O,O-DIETHYL O-(3-CHLORO-4-METHYL-2-OXO-2H-1-BENZOPYRAN-7-YL)PHOSPHOROTHIOATE*

PRINCIPAL FORMULATIONS: EC, S, oil solution, WP, D, Pr.

TYPE PESTICIDE: Insecticide, Acaricide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
LIVESTOCK AND POULTRY		
(Dairy Livestock)		

Do not spray or dust animals in a confined, unventilated area. Some formulations, including those for cattle grub control and those to be applied as thoroughly-wetting sprays and dips, are accompanied by the following cautions:

Do not apply to sick, convalescent, or stressed animals or animals less than three months old.
Do not dip or spray animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases.
Do not apply in conjunction with oral drenches of other internal medications, such as phenothiazine, or with natural or synthetic pyrethroids or their synergists, or with other organic phosphates.

Cattle, dairy (lactating)		0.5 ppm (milk-fat). 1.0 ppm (in or on meat, fat, and meat by-products). No interval required between treatment and use of milk or meat.
Face fly	1.0 lb./13 gal. oil(EC)	Backrubber. Use No.2 fuel oil. Saturate the fiber portion. Place backrubber where animals congregate or travel regularly. For most effective control, place backrubber so as to allow animal to rub its face, but prevent straddling. Resaturate or refill backrubber as needed.
	1.0% or 5.0%(D)	Dust bag. Claims are limited to aiding in control of face fly populations. Hang bag so that bottom is 18-24 inches from the ground. Bags must be located for daily forced-use. For best results, use on an area-wide basis. Do not hang bags over feed, mineral, or water.

*coumaphos; Co-Ral

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, dairy (lactating) (continued)		
Horn fly	1.0 lb./13 gal. oil(EC)	Backrubber. Use No.2 fuel oil. Saturate fiber portion. Place backrubber where animals congregate or travel regularly. Suspend at a height that will prevent straddling. Resaturate or refill backrubber as needed.
	1.0%(oil solution)	Spray application. Apply undiluted as a fine mist by hand powered spray gun or low pressure power sprayer. Do not attempt to obtain penetration of the spray to the skin. Direct spray to the back, flanks, neck, withers, and lower front legs, but avoid the udder area. Apply after either the morning or the evening milking. Apply 1-2 fluid ounces per animal daily for up to 3 consecutive days for initial fly control and repeat thereafter at 5- to 7-day intervals. Repeat application also after exposure of animals to heavy rainfall.
	1.0%(D)	Dust application. Apply 2.0 ounces of dust per animal by shaker can over the head, neck, shoulders, back and tailhead. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, dairy (lactating) (continued)		
Horn fly (continued)	1.0% or 5.0%(D)	Dust bag. Suspend bags in areas frequented by cattle, such as in loafing sheds, in front of mineral shelters, across gateways or lanes through which animals pass daily for feed, mineral, or water, or across the exit of the milking barn. Hang bags so that the bottom is 4-6 inches below topline of cattle. Do not hang bags over feed, mineral, or water.
Lice	0.25/100 gal. water(EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
	1.0%(D)	Dust application. Apply 2.0 ounces of dust per animal by shaker can over the head, neck, shoulders, back, and tailhead. Repeat as needed.
	1.0% or 5.0%(D)	Dust bag. Suspend bags in areas frequented by cattle, such as in loafing sheds, in front of mineral shelters, across gateways or lanes through which animals pass daily for feed, mineral, or water, or across the exit of the milking barn. Hang bags so that the bottom is 4-6 inches below topline of cattle. Do not hang bags over feed, mineral or water.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, dairy (lactating) (continued)		
Screwworms	5.0%(D)	Spot treatment. Use puff duster to apply a light, even coat of dust to infested wounds. Immediately treat new wounds from docking, dehorning, etc. to avoid infestations. Repeat as needed.
Ticks, ear	5.0%(D)	Spot treatment. Apply by puff duster into the ears and on the adjacent areas of head. Repeat as needed.
Cattle, dairy (non-lactating)		0.5 ppm (milk-fat). 1.0 ppm (in or on meat, fat and meat by-products). Do not treat animals within 14 days of freshening. If freshening occurs within 14 days of treatment, do not use milk for human consumption for the balance of the 14 days.
Cattle grubs		
Refer to uses and limitations under Cattle, beef.		
Horn fly	0.5 lb./100 gal. water(EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
	0.5 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.

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	Site and Pest	Dosage	Tolerance, Use, Limitations
		actual	
	Cattle, dairy (non-lactating) (continued)		
	Lice	0.5 lb./100 gal. water(EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
		0.5 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
**	Scab mite	2.0 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Submerge each animal to assure complete coverage and thorough wetting of the skin. Two applications 10 to 14 days apart are necessary for control.
	Screwworms	2.0 lb./100 gal. water(EC,WP)	Spray application. Thoroughly wet the skin. Also treat all accessible portions of wounds. Repeat as needed.
	Ticks	1.0 lb./100 gal. water(EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
		1.0 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.

O,O-DIETHYL O-(3-CHLORO-4-METHYL-2-OXO-2H-1-BENZOPYRAN-7-YL)PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Goats, dairy (lactating)		0.5 ppm (milk fat). 1.0 ppm (in or on meat, fat, and meat by-products). No interval required between treatment and use of milk or meat.
Screwworms	5.0%(D)	Spot treatment. Use puff duster to apply a light even coat of dust to infested wounds. Immediately treat new wounds from docking, dehorning, etc. to avoid infestations. Repeat as needed.
Ticks, ear	5.0%(D)	Spot treatment. Apply by puff duster into the ears and on the adjacent areas of the head. Repeat as needed.
Goats, dairy (non-lactating) (Refer also to lactating dairy goats)		0.5 ppm (milk fat). 1.0 ppm (in or on meat, fat, and meat by-products). Do not treat animals within 14 days of freshening. If freshening occurs within 14 days of treatment, do not use milk for human consumption. Do not treat lactating dairy goats.
Horn fly Lice	0.5 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed.
		Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Goats, dairy (non-lactating) (continued)		
Screwworms	2.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Thoroughly treat all wounds. Repeat as needed. Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
Sheep ked Ticks Wool maggots (fleeceworms)	1.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Thoroughly treat all wounds. Repeat as needed. Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

(Livestock Intended for Slaughter)

Do not spray or dust animals in a confined, nonventilated area. Some formulations, including those for cattle grub control and those to be applied as thoroughly-wetting sprays and dips, are accompanied by the following cautions:

Do not apply to sick, convelascent, or stressed animals or animals less than three months old.
Do not dip or spray animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases.
Do not apply in conjunction with oral drenches, or with internal medications, such as phenothiazine, or with natural or synthetic pyrethroids or their synergists, or with other organic phosphates.

Cattle, beef	1.0 ppm (in or on meat, fat, and meat by-products). No preslaughter interval for EC, S,D. 14 day preslaughter interval for Pr. formulated with dimethyl=(2,2,2-trichloro-1-hydroxyethyl)=phosphonate.

Cattle grubs

Proper timing is important. Cattle should be treated as soon as possible after fly activity ceases. Reactions such as bloat, salivation, staggering and paralysis may occur when cattle are treated while the common cattle grub is in the gullet, or while the northern cattle grub is near the spinal cord. Cattle should be treated either before or after these stages of development. Consult your veterinarian or Cooperative Agricultural Extension Service regarding timing of treatment.

If exact stage of development of grubs is unknown, cattle should receive only a maintenance ration of low energy feed during treatment period to lessen likelihood of severe bloat if grubs are in the gullet.
For most effective reduction of carcass damage and trim loss to cattle to be slaughtered, treatment should be made at least 6 weeks before the expected appearance of the grubs in the back.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, beef (continued)		
Cattle grubs (continued)	3.0 lb./100 gal. water(EC), 3.0-4.0 lb./100 gal. water(WP)	Single spray application. Apply as a spray at high pressure (250-350 psi) to wet the skin. Operate box-type spray chutes at maximum pressure. Use the higher WP rate in northern areas or for late fall applications where animals have long hair coats.
	2.0-3.0 lb./100 gal. water(EC), 2.0 lb./100 gal. water(WP)	Double spray application. Apply as a spray at high pressure (250-350 psi) to wet the skin. Operate box-type spray chutes at maximum pressure. Apply twice per season, not more than three months apart. Second application should be soon after fly activity has ceased.
	2.0 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid.
	0.5 fl. oz. 4% solution/100 lb. body weight(S)	Pour-on application. Pour correct amount of solution uniformly along back of animal.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, beef (continued)		
Face fly	1.0 lb./13 gal. oil(EC)	Backrubber. Use No. 2 fuel oil. Saturate the fiber portion. Place backrubber where animals congregate or travel regularly. For most effective control, backrubber should be placed so as to allow animal to rub its face. Resaturate or refill as needed.
	1.0% or 5.0%(D)	Dust bag. Claims are limited to aiding in the control of fly populations. Hang bags so that bottom is 18-24 inches from the ground. Bags must be located for daily forced-use. For best results, use on an area-wide basis. Do not hang bags over feed, mineral, or water.
Horn fly	0.5 lb./100 gal. water(EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
	0.5 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
	1.0 lb./13 gal. oil(EC)	Backrubber. Use No. 2 fuel oil. Saturate the fiber portion. Place backrubber where animals congregate or travel regularly. Resaturate or refill as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, beef (continued)		
Horn fly (continued)	1.0%(oil solution)	Spray application. Apply undiluted as a fine mist with hand powered spray gun or low pressure power sprayer. Do not attempt to obtain penetration of the spray to the skin. Direct spray to the back, flanks, neck, withers, and lower front legs. Apply 1-2 fluid ounces per animal daily for up to 3 consecutive days for initial fly control and repeat thereafter at 5- to 7-day intervals. Repeat application also after exposure of animals to heavy rainfall.
	1.0%(D)	Dust application. Apply 2 ounces of dust per animal by shaker can over the head, neck, shoulders, back, and tailhead. Repeat as needed.
		Dust application. Apply up to 4.0 ounces of dust per animal by shaker can or mechanical duster. Treat animal thoroughly. Repeat at weekly interval if needed.
	1.0% or 5.0%(D)	Dust bag. Suspend bags in areas frequented by cattle, such as in loafing sheds, in front of mineral shelters, or across gateways or lanes through which animals pass daily for feed, mineral, or water. Hang bags so that the bottom is 4-6 inches below topline of cattle. Do not hang bags over feed, mineral, or water.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, beef (continued)		
Lice	0.25-0.5 lb./ 100 gal. water (EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
	0.25-0.5 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
	1.0%(D)	Dust application. Apply 2.0 ounces of dust per animal by shaker can over the head, neck, shoulders, back, and tailhead. Repeat as needed.
		Dust application. Apply up to 4.0 ounces of dust per animal by shaker can or mechanical duster. Treat animal thoroughly. Repeat at weekly intervals if needed.
	1.0% or 5.0%(D)	Dust bag. Suspend bags in areas frequented by cattle, such as in loafing sheds, in front of mineral shelters, or across gateways or lanes through which animals pass daily for feed, mineral, or water. Hang bags so that the bottom is 4-6 inches below topline of cattle. Do not hang bags over feed, mineral, or water.
** Scab mite	2.0 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Submerge each animal to assure complete coverage and thorough wetting of the skin. Two applications 10 to 14 days apart are necessary for control.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, beef (continued)		
Screwworms	2.0 lb./100 gal. water(EC,WP)	Spray application. Apply with high pressure to thoroughly wet the skin. Also treat all accessible portions of wounds. Repeat as needed.
	3.0%(Pr.)	Spot treatment. Treat infested wounds with a light, but thorough coverage. Also, immediately treat new wounds from docking, dehorning, etc. to prevent infestations. Be sure all parts of wound are completely covered. Repeat as needed. Do not apply within 14 days of slaughter. Formulated with dimethyl(2,2,2-trichloro-1-hydroxy=ethyl)phosphonate.
	5.0%(D)	Spot treatment. Use puff duster to apply a light, even coat of dust to infested wounds. Immediately treat new wounds from docking, dehorning, etc. to avoid infestations. Repeat as needed.
Ticks	1.0 lb./100 gal. water (EC,WP)	Spray application. Thoroughly wet the skin. Repeat as needed.
	1.0 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
Ticks, ear	5.0%(D)	Spot treatment. Apply by puff duster into the ears and on the adjacent areas of the head. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Goats		1.0 ppm (in or on meat, fat, and meat by-products). 15 day preslaughter interval.

** Refer to dairy goats (lactating and non-lactating) for pests, dosages, and uses.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
**		
Sheep		1.0 ppm (in or on meat, fat, and meat by-products). 15 day preslaughter interval.
Horn fly Lice	0.5 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed. Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
Screwworms	2.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Thoroughly treat all wounds. Repeat as needed. Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.

Sheep continued on next page.

O,O-DIETHYL O-(3-CHLORO-4-METHYL-2-OXO-2H-1-BENZOPYRAN-7-YL)PHOSPHOROTHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		actual	
	Sheep (continued)		
	Screwworms (continued)	5.0%(D)	Spot treatment. Use puff duster to apply a light, even coat of dust to infested wounds. Immediately treat new wounds from docking, dehorning, etc. to avoid infestations. Repeat as needed.
	Sheep ked	1.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed.
			Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
		0.5%(D)	Dust application by rotary, hand, or puff dusters, or by sprinkling from a can. Apply 1-2 ounces of formulation per animal. Work dust well into wool over the entire body. Repeat as needed.
			For direct application by power duster. Set machine to deliver 1.5-4.0 pounds of dust per 50-100 animals. Repeat as needed.
**	Sheep scab mite	2.0 lb./100 gal. water(WP)	Dip application. Agitate dip fluid thoroughly before each use. Submerge each animal to assure complete coverage and thorough wetting of the skin. Two applications 10 to 14 days apart are necessary for control.
	Ticks	1.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed.
	Tick, ear	5.0%(D)	Spot treatment. Apply by puff duster into the ears and on the adjacent areas of head. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sheep (continued)		
Wool maggots (fleeceworms)	1.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Thoroughly treat all wounds. Repeat as needed.
		Dip application. Agitate dip fluid thoroughly before each use. Water animals well before treatment to prevent drinking of vat fluid. Repeat as needed.
	0.5%(D)	Dust application by rotary, hand, or puff duster, or by sprinkling from a can. Apply 1-2 ounces of formulation per animal. Work dust well into wool over the entire body. Repeat as needed.
		Dust application by power duster. Set machine to deliver 1.5-4.0 pounds of dust per 50-100 animals. Repeat as needed.
Swine		1.0 ppm (in or on meat, fat, and meat by-products). No preslaughter interval.
Horn fly	0.5 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed.
Lice	0.5 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed.
	1.0%(D)	Dust application. Apply up to 1.0 ounce per animal as a uniform coat to the head, shoulders, and back. Repeat as needed, but not more frequently than once every 10 days. May be used simultaneously with 1.0% dust bedding treatment for severe infestations.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Swine (continued)		
Screwworms	2.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Thoroughly treat all wounds. Repeat as needed.
	5.0%(D)	Spot treatment. Use puff duster to apply a light, even coat of dust to infested wounds. Treat new wounds from docking, dehorning, etc. to avoid infestations. Repeat as needed.
Ticks	1.0 lb./100 gal. water(WP)	Spray application. Completely wet the animal. Repeat as needed.
Ticks, ear	5.0%(D)	Spot treatment. Apply by puff duster into the ears and on the adjacent areas of head. Repeat as needed.
(Poultry)		
Poultry		1.0 ppm (in or on meat, fat, and meat by-products). 0.1 ppm (eggs). No preslaughter interval. Do not treat birds within 10 days of vaccination or other stress influence. Do not contaminate feed, water, or utensils. Provide thorough ventilation while dusting.
Lice	1.5 oz./5.0 gal. water(WP)	Direct application. Apply as a low pressure spray using one gallon of the spray mixture per 100-125 birds. Repeat as needed, but not more frequently than once a week. Supplemental control can be obtained by treating litter and housing.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Poultry (continued)		
Lice (continued)	0.5%(D)	Direct application. Dust birds thoroughly, especially under the wings and around vent. Repeat as needed, but not more frequently than once a week. Supplemental control can be obtained by treating litter and housing.
	0.2 oz./50 birds(D)	Dust box for self-treatment. Use 2.5 pounds of 0.5% dust per 50 birds. Repeat as needed. Supplemental control can be obtained by treating litter and housing.
Northern fowl mite	0.75 oz./5.0 gal. water(WP)	Direct application. Apply as a low pressure spray using one gallon of the spray mixture per 100-125 birds. Repeat as needed, but not more frequently than once a week. Supplemental control can be obtained by treating litter and housing.
	0.5%(D)	Direct application. Dust birds thoroughly, especially under the wings and around vent. Repeat as needed, but not more frequently than once a week. Supplemental control can be obtained by treating litter and housing.
	0.2 oz./50 birds(D)	Dust box for self-treatment. Use 2.5 pounds of 0.5% dust per 50 birds. Repeat as needed. Supplemental control can be obtained by treating litter and housing.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Livestock Not Intended for Slaughter)		

Do not spray or dust animals in a confined, nonventilated area. Some formulations, including those for cattle grub control and those to be applied as thoroughly-wetting sprays and dips, are accompanied by the following cautions:

Do not apply to sick, convalescent, or stressed animals or animals less than three months old.
Do not dip or spray animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases.
Do not apply in conjunction with oral drenches or other internal medications, such as phenothiazine, or with natural or synthetic pyrethroids or their synergists, or other organic phosphates.

Horses		1.0 ppm (in or on meat, fat, and meat by-products).
Horn fly Lice	0.5 lb./100 gal. water (EC,WP)	Spray thoroughly to penetrate the hair coat to point of run-off. Repeat as needed.
Screwworms	2.0 lb./100 gal. water (EC,WP)	Spray thoroughly to penetrate the hair coat to point of run-off. Thoroughly treat all accessible wounds. Repeat as needed.
	5.0%(D)	Spot treatment. With a puff duster, apply a light, even coat of dust to infested wounds. Immediately treat new wounds from docking, dehorning, etc. to avoid infestations. Repeat as needed.
Ticks	1.0 lb./100 gal. water (EC,WP)	Spray thoroughly to penetrate the hair coat to point of run-off. Repeat as needed.
Ticks, ear	5.0%(D)	Spot treatment. Apply by puff duster into the ears and on the adjacent areas of head. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL PREMISES AND EQUIPMENT		
(Poultry Houses and Yards)		
Poultry houses		
Flies Lice Northern fowl mite Poultry mite	1.5 oz./5.0 gal. water(WP)	Apply to walls, ceilings, floors, roosts, nests and adjacent areas at the rate of one gallon of spray mixture per 1,000 square feet. Treat all cracks and crevices. Repeat as needed. May be used as supplemental control to direct application to poultry.
	0.1-0.11 oz./100 sq. ft.(D)	Apply to walls, ceilings, floors, roosts, nests, and adjacent areas. Force dust into all cracks and crevices. Repeat as needed. May be used as supplemental control to direct application to poultry.
Ticks	0.1 oz./100 sq. ft.(D)	Refer to directions above for dust.
Litter areas		
Flies Lice Northern fowl mite Poultry mite	1.5 oz./5.0 gal. water(WP)	Thoroughly treat all areas at the rate of one gallon of spray mixture per 1,000 square feet. Repeat as needed. May be used as supplemental control to direct application to poultry.
	0.1-0.12 oz./ 30 sq. ft.(D)	Thoroughly treat all areas. Repeat as needed. May be used as supplemental control to direct application to poultry.
Ticks	0.1 oz./30 sq. ft.(D)	Thoroughly treat all areas. Repeat as needed.

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Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Other Animal Buildings)		
Swine bedding		
Lice	0.02 oz./30 sq. ft.(D)	Apply uniformly to fresh, dry bedding. Repeat as needed, but not more frequently than once every 10 days. May be used simultaneously with direct dust applications for severe infestations.
HUMANS, PETS AND OTHER ANIMALS		
Dogs		
Fleas Lice Ticks	0.25%(Pr.)	Spray entire body against the natural lay of the hair. Spray for 5-10 seconds for dogs up to 10 pounds in weight, 10-20 seconds for dogs 10-30 pounds in weight, and 20-30 seconds for dogs over 30 pounds in weight. Do not spray into eyes. Do not use on cats. Formulated with dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate.
	1.0%(Pr.)	Spray entire body and rub hair for penetration of the spray to the skin. Repeat as needed, but not more than once a week. Spray the bedding also to help prevent reinfestation. Do not use on nursing puppies or on cats.
	0.5%(D)	Dust entire body and work dust into the hair. Repeat as needed, but not more often than once a week. Dust the bedding also to help prevent reinfestation. Provide thorough ventilation while dusting. Do not use on nursing puppies or on cats. Avoid contamination of feed, water, or utensils.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE*

PRINCIPAL FORMULATIONS: L, G, FM, cartridge, conc.

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Bee caution: This product is toxic to bees and should not be applied when bees are actively visiting the area.

Cartridge and G products containing up to 2% active ingredient and FM containing up to 1% active ingredient are registered for use by the home gardener.
G and FM products with higher percentages of disulfoton and other formulations are for commercial applicator use only.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL CROPS		
Unless otherwise stated, apply specific dosages as needed to crops grown for seed purposes provided that they are not to be grazed or used for food, feed or forage. For specific recommendations, consult your local Agricultural Experiment Station or Cooperative Agricultural Extension Service.		
Alfalfa (hay, forage)		5.0 ppm (fresh alfalfa). 12 ppm (alfalfa hay). 7 day preharvest interval through 1.0 lb./A. Foliage application. Do not apply more than once per cutting. Allow a minimum of 28 days between applications. Marginal leaf burn may occur under some conditions of use with L formulations.
(seed crop only)		NF. 14 day preharvest interval through 1.0 lb./A. Foliage application. Do not apply more than four times per season. Chaff and hulls from treated crops may be used for feed or forage. G and FM applications may be made as needed. Do not graze or use treated crop for food, feed or forage.

*disulfoton; Di-Syston

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Alfalfa (continued)		
Aphids	1.0 lb./A. (G,FM,L)	Soil application. Broadcast G or FM at planting, prior to growth in spring or during the growing season. Apply L as a water emulsion or with liquid fertilizer in early spring prior to growth or on stubble after alfalfa has been cut and removed from the field.
Aphid, pea	0.5-1.0 lb./A. (L)	Foliage application. Apply in not less than one gallon total volume per acre.
Mites	1.0 lb./A. (G,FM,L)	Soil application. Refer to directions for aphids.
Barley		0.75 ppm (grain). 5.0 ppm (forage or straw). 30 day precutting for forage or pregrazing interval through 1.0 lb./A. Soil application. 60 day preharvest interval through 1.0 lb./A. Soil application. Allow a minimum of 21 days between applications. Do not apply more than twice per season. For seed crop only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids Mites	1.0 lb./A. (G,FM,L)	Soil application. Broadcast or drill G and FM at planting or broadcast after crop emergence. Inject L as a water emulsion or with liquid fertilizer at planting.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Beans, dry		0.75 ppm (beans). 5.0 ppm (vines). 60 day preharvest interval through 2.0 lb./A. Row application. Do not apply more than once per season. Do not apply in direct contact with seed. Under adverse conditions (i.e. extremely cool and wet or extremely dry) and maximum rates disulfoton may cause delay in emergence, stunting or stand reduction. Such damage may be more pronounced in light, sandy soil. Plant injury may also occur or be enhanced when disulfoton is used with certain preemergence herbicides. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids Leafhoppers Mexican bean beetle (larvae) Mites Thrips	1.0-2.0 lb./A. (with 30-inch row spacing) or 0.9-1.8 oz./ 1,000 ft. of row(G,FM,L)	Row application. Apply at planting or sidedress on each side of the row. Inject L as a water emulsion or in a liquid fertilizer. L may also be applied undiluted with specially designed equipment.
	0.05-0.09 oz./ 50 ft. of row (G)	Row application. For home garden use. Refer to G above.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Beans, (green, lima and snap)		0.75 ppm (beans). 5.0 ppm (vines). Do not apply more than once per season. Do not apply in direct contact with seed. Under adverse conditions (i.e. extremely cool and wet or extremely dry) and maximum rates disulfoton may cause delay in emergence, stunting or stand reduction. Such damage may be more pronounded in light, sandy soil. Plant injury may also occur or be enhanced when disulfoton is used with certain preemergence herbicides. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids Leafhoppers Mexican bean beetle (larvae) Mites Thrips	1.0-2.0 lb./A. (with 30-inch row spacing) or 0.9-1.8 oz./ 1,000 ft. of row(G,FM,L)	Row application. Place G or FM in a band on each side of the row at planting. Inject L as a water emulsion or in a liquid fertilizer or apply undiluted with specially designed equipment on each side of the seed furrow at planting.
	0.05-0.09 oz./ 50 ft. of row (G)	Row application. For home garden use. Refer to G above.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Blackeyed peas (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed, or forage.
Aphids Leafhoppers Mites Thrips	1.0-2.0 lb./A. (with 38-inch row spacing) or 1.2-2.4 oz./1,000 ft. of row(G)	Row application. Place in band on each side of seed furrow at planting or sidedress after plants become established.
Broccoli		0.75 ppm. 14 day preharvest interval through 1.0 lb./A. Row or soil application. Do not apply in direct contact with seed. Do not apply more than one field application per season. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids Flea beetles Leafhoppers	1.0 lb./A. (with 36-inch row spacing) or 1.1 oz./1,000 ft. of row (G,FM,L)	Row application. Place G or FM in a band on each side of the seed furrow at planting or sidedress after plants become established. For transplant seed bed, apply L as a water emulsion prior to seeding. Work into to 2-3 inches of soil. For field application, inject L as a water emulsion or with liquid fertilizer on each side of seed furrow or transplant row or sidedress after plants become established.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Broccoli (continued)		
Aphids Flea beetles Leafhoppers (continued)	0.04-0.05 oz./ 50 ft. of row (G)	Row application. For home garden use. Apply in a band at planting or sidedress.
	2.0 tsp. 1% or 1.0 tsp. 2%/ plant(G)	Soil application. Mix with soil in transplant holes prior to setting plants.
Brussels sprouts		0.75 ppm. 30 day preharvest interval through 1.0 lb./A. Row or soil application. Do not apply in direct contact with seed. Do not make more than two applications per season. Allow a minimum of 21 days between applications. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids Flea beetles Leafhoppers Mites Thrips	1.0 lb./A. (with 36-inch row spacing) or 1.1 oz./1,000 ft. of row (G,FM,L)	Row application. Place G or FM in a band on each side of the seed furrow at planting or sidedress after plants become established. For transplant seed bed, apply L in a water emulsion prior to seeding. Work into top 2-3 inches of soil. For field application, inject L as a water emulsion or with liquid fertilizer on each side of seed furrow or transplant row or sidedress after plants become established.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Brussels sprouts (continued)		
Aphids Flea beetles Leafhoppers Mites Thrips (continued)	0.04-0.05 oz./ 50 ft. of row (G)	Row application. For home garden use. Apply in a band at planting or sidedress.
	2.0 tsp. 1% or 1.0 tsp. 2%/ plant(G)	Soil application. Mix with soil in transplant holes prior to setting plants.
Cabbage		0.75 ppm. 42 day preharvest interval through 1.5 lb./A. Row or soil application. Do not apply in direct contact with seed. Do not apply more than one field application per season. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids (excluding root aphids)	1.0-1.5 lb./A (with 36-inch row spacing) or 1.1-1.7 oz./ 1,000 ft. of row(G,FM)	Row application. Place in band on each side of the seed furrow at planting or apply as a sidedress after plants become established.
	1.0 lb./A. (with 36-inch row spacing) or 1.1 oz./1,000 ft. of row(L)	Row application. For transplant seed bed, apply in water emulsion spray prior to seeding. Work into top 2-3 inches of soil. For field treatment, inject as a water emulsion or with liquid fertilizer on each side of seed furrow or transplant row or sidedress after plants become established.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cabbage (continued)		
Aphids (continued) (excluding root aphids)	0.04-0.05 oz./ 50 ft. of row (G)	Row application. For home garden use. Apply in a band at planting or sidedress.
	2 tsp. 1% or 1 tsp. 2%/ plant(G)	Soil application. Mix with soil in transplant holes prior to setting plants.
Aphids, root	1.5 lb./A. (with 36-inch row spacing) or 1.7 oz./1,000 ft. of row (G,FM,L)	Row application. Place G in band on each side of the seed furrow at planting or apply as a sidedress after plants become established. For transplant seed bed, apply L in a water emulsion spray prior to seeding. Work into top 2-3 inches of soil. For field treatment, inject L as a water emulsion or with liquid fertilizer on each side of seed furrow or transplant row or sidedress after plants become established.
	0.05 oz./50 ft. of row(G)	Row application. For home garden use. Refer to G above.
	2 tsp. 1% or 1 tsp. 2%/ plant(G)	Soil application. Mix with soil in transplant holes prior to setting plants.
Flea beetles		Row application. Soil application. Refer to directions for aphids (excluding root aphids).

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Carrots (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed or forage.
Aphids Leafhoppers Mites Thrips	1.0-2.0 lb./A. (with 18-inch row spacing) or 0.56-1.1 oz./1,000 ft. of row(G)	Row application. Place in band on each side of seed furrow at planting or apply as a sidedress after plants become established.
	1.0 lb./A. (with 18-inch row spacing) or 0.56 oz./1,000 ft. of row(L)	Row application. Inject as a water emulsion or with liquid fertilizer on each side of the seed furrow at planting or sidedress after plants become established.
Cauliflower		0.75 ppm. 40 day preharvest interval through 1.0 lb./A. Row or soil application. Do not apply in direct contact with seed. Do not make more than two applications per season. Allow a minimum of 21 days between applications. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cauliflower (continued)		
Aphids Flea beetles Leafhoppers	1.0 lb./A. (with 36-inch row spacing) or 1.1 oz./1,000 ft. of row (G,FM,L)	Row application. Place G or FM in a band on each side of the seed furrow at planting or sidedress after plants become established. For transplant seed bed, apply L as a water emulsion spray prior to seeding. Work into top 2-3 inches of soil. For field application, inject L as a water emulsion or with liquid fertilizer on each side of seed furrow or transplant row or sidedress after plants become established.
	0.04-0.05 oz./ 50 ft. of row(G)	Row application. For home garden use. Refer to G above.
	2.0 tsp. 1% or 1.0 tsp. 2%/ plant(G)	Soil application. Mix with soil in transplant holes prior to setting plants.
Clover		5.0 ppm (fresh clover). 12 ppm (clover hay). 7 day preharvest or pregrazing interval through 1.0 lb./A. Soil application. Allow 28 days between applications.
Aphids Mites	1.0 lb./A. (G,FM)	Soil application. Broadcast prior to active growth in spring or as needed.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Clover (seed crop only)		NF. Do not graze or use treated crop for food, feed or forage.
Aphids Mites	1.5 lb./A.(G)	Broadcast soil application. Apply as needed.
Coffee		0.3 ppm. 90 day preharvest interval through 0.6 gm. per foot of tree height. Soil application. Make no more than one preharvest and one postharvest application per season.
Leafminers	0.3-0.6 gm./ft. of tree height (G)	Use restricted to Puerto Rico. Soil application. Distribute evenly around tree from near base out to drip line.
Corn		0.3 ppm [corn, grain including field corn, sweet corn (kernels plus cob with husks removed), popcorn]. 5.0 ppm (corn fodder or forage including field, sweet and popcorn). 40 day preharvest interval for G and FM through 1.0 lb./A. for food, feed or ensilage. Row or foliage application. Do not apply more than twice per season by any method. 40 day preharvest interval for L through 1.0 lb./A. for forage, feed or ensilage. At planting soil application. 100 day preharvest interval for L through 1.0 lb./A. for forage, feed or ensilage. Postemergence soil application. 100 day preharvest interval for L through 1.0 lb./A. for human food purposes. Soil application.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Corn (continued)		For L at extremely narrow row spacings, do not place treated zones closer together than 6 inches. Do not apply more than once per season by any method. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row (G,FM)	Row application. Place FM or G in a band on each side of seed furrow at planting or sidedress as plants emerge. Foliage application. Broadcast to direct G into the whorl.
	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row (any row spacing)(L)	Row application. Spray L in a 4- to 6-inch band at planting. For early season control, inject as a water emulsion or with liquid fertilizer on each side of the furrow after emergence.
Leafhoppers Mites	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row (G,FM)	Row application. Place G and FM in a band on each side of the seed furrow at planting or sidedress as plants emerge. Foliage application. Broadcast to direct G into the whorl.
	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row(any row spacing)(L)	Row application. Spray L in a 4- to 6-inch band at planting. For early season control, inject as a water emulsion or with liquid fertilizer on each side of the furrow after emergence.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Corn (continued)		
Rootworms	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row (G,FM)	Row application. Place FM or G in a band on each side of the seed furrow at planting or side-dress as plants emerge.
	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row(any row spacing)(L)	Row application. Spray L in a 4- to 6-inch band at planting. For early season control, inject as a water emulsion or with liquid fertilizer on each side of the furrow after emergence.
Thrips	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row (G,FM)	Row application. Place FM or G in a band on each side of the seed furrow at planting or side-dress as plants emerge. Foliage application. Broadcast to direct G into the whorl.
	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row(any row spacing)(L)	Row application. Spray L in a 4- to 6-inch band at planting. For early season control, inject as a water emulsion or with liquid fertilizer on each side of the furrow after emergence.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cotton		0.75 ppm (cottonseed). Apply up to bloom through 0.56 lb./A. Foliage application. Do not apply more than three times per season. 28 day preharvest interval through 1.0 lb./A. Row application. Do not apply in direct contact with the seed. Do not apply more than twice per season. Allow a minimum of 21 days between applications. Under adverse conditions (i.e. extremely cool and wet or extremely dry) and maximum rates disulfoton may cause delay in emergence, stunting or stand reduction. Such damage may be more pronounced in light, sandy soil. Plant injury may also occur or be enhanced when disulfoton is used with certain preemergence herbicides.
Aphids Mites Thrips	0.25-0.5 lb./ 100 lb. of seed(conc.)	Seed treatment for early season control. For use by commercial seed treaters only. Use higher rate only for mite reduction from emergence through about the 4- to 6-leaf stage. Do not use treated seed for food, feed or oil purposes.
	0.19-0.56 lb./A. (L)	Foliage application. For use against aphids and thrips only. Apply in not less than one gallon total volume per acre. Repeat as needed, but not more than 3 times per season with the last application no later than bloom. Do not apply with soil treatments within the same crop year.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cotton (continued)		
Aphids (continued) Mites Thrips	0.56-1.0 lb./A. or 0.7-1.2 oz./ 1,000 ft. of row(L)	Row application. For a preplant treatment, apply a 16-inch band in a water emulsion or with a preemergence herbicide. -or- Apply at planting as a water emulsion or with a liquid fertilizer. Spray in furrow on either side of the seed or inject on each side of the furrow. -or- Apply a postplant treatment as a water emulsion or with a liquid fertilizer. Inject on each side of the row as follows: Light soils - 0.56 lb./A. or 0.85 oz./1,000 ft. of row. Medium soils - 0.75 lb./A. or 0.97 oz./1,000 ft. of row. Heavy soils - 1.0 lb./A. or 1.36 oz./1,000 ft. of row.
	0.6-1.0 lb./A. (with 40-inch row spacing) or 0.7-1.2 oz./ 1,000 ft. of row(G FM)	Row application. Apply at a depth of 8 inches below seed or band on each side of the furrow at planting. Apply as a side-dress on each side of the row after plants become established.
	0.3-0.4 lb./A. (G)	Hill-dropped cotton. Use lower rate where hill spacing is greater than 14 inches. Apply as follows: Light soils - 0.3 lb./A. Medium soils - 0.35 lb./A. Heavy soils - 0.4 lb./A.

O.O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cotton (Irrigated)		28 day preharvest interval through 1.0 lb./A Row application. 90 day preharvest interval through 2.0 lb./A. Broadcast, foliage or sidedress application.
Refer also to Cotton		
Aphids Mites Thrips	0.6-1.0 lb./A. (with 40-inch row spacing)	Row application. Place in seed furrow or band on each side of the furrow at planting.
		-plus-
	2.0 lb./A.	Broadcast over foliage or sidedress up to first squaring (90 days before harvest).
		-or-
	1.0 lb./A (G)	Row application. Sidedress up to 28 days before harvest.
Cowpeas Crowder peas (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed or forage.
Aphids Leafhoppers Mites Thrips	1.0-2.0 lb./A. (with 38-inch row spacing) or 1.2-2.4 oz./ 1,000 ft. of row(G)	Row application. Place in band on each side of seed furrow at planting or sidedress after plants become established.
Fruit trees (nonbearing)		NF.
Aphids Lace bugs Leafhoppers Mites Thrips Whiteflies	0.025-0.25 lb./ tree or 0.4 oz./inch of trunk diameter (G)	Soil application. For use by commercial growers only. Distribute evenly around tree from near the base of the trunk out to the drip line. Work into soil and water thoroughly. Use higher dosage on heavy, organic or muck soils. -or- Mix equivalent amounts with soil when setting transplants.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Garlic (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed or forage.
Aphids Mites Thrips	1.0-2.0 lb./A. (with 18-inch row spacing) or 0.6-1.1 oz./ 1,000 ft. of row(G)	Row application. Place G in a band on each side of the seed furrow at planting. Apply broadcast or sidedress after plants become established.
	1.0 lb./A. (with 18-inch row spacing) or 0.6 oz./1,000 ft. of row(L)	Row application. Inject as a water emulsion or with liquid fertilizer to each side of the seed furrow at planting. Inject as a sidedress application after plants become established.
** Hops		0.5 ppm. Do not graze or feed crop refuse to animals.
Aphids Mites	2.0-4.0/A. or 2-4 level tsp./plant (7 by 7 ft. spacing) (G)	Soil application. Apply uniformly in a 6-inch square area at the base of each plant. Apply in mid- to late June just prior to hilling. Hilling should cover granules with soil. Irrigate as normal crop culture requires.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Lettuce		0.75 ppm. 60 day preharvest interval through 2.0 lb./A. Row application. Do not apply in direct contact with seed. Do not apply to transplanted lettuce. Under adverse conditions (i.e. extremely cool and wet or extremely dry) and maximum rates disulfoton may cause delay in emergence, stunting or stand reduction. Such damage may be more pronounced in light, sandy soil. Plant injury may also occur or be enhanced when disulfoton is used with certain preemergence herbicides. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

(Lettuce continued on next page)

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Lettuce (continued)		
Aphids Leafhoppers Mites Thrips	1.0-2.0 lb./A. (with 20-inch row spacing) or 0.6-1.2 oz./ 1,000 ft. of row(G,FM)	Row application. For spring or summer seeded lettuce, place in band on each side of the seed furrow at planting. For fall or winter seed lettuce, apply as a sidedress at thinning.
	0.97-2.0 lb./A. (with 20-inch row spacing) or 0.56-1.2 oz./ 1,000 ft. of row(L)	Row application. For spring or summer seeded lettuce, inject as a water emulsion or with liquid fertilizer on each side of the seed furrow at planting. For fall or winter seeded lettuce, inject as a water emulsion or with liquid fertilizer at thinning.
	0.04-0.06 oz./ 50 ft. of row (G)	Row application. For home garden use. Place in band on each side of the row at planting.
Oats		0.75 ppm (grain). 5.0 ppm (forage or straw) 30 day pregrazing and precutting interval for forage through 1.0 lb./A. Soil application. 60 day preharvest interval through 1.0 lb./A. Soil application. Do not apply more than twice per season. Allow a minimum of 21 days between applications. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Oats (continued)		
Aphids Mites	1.0 lb./A. (G,FM,L)	Soil application. For G or FM, drill or broadcast at planting. Broadcast or sidedress after plants emerge. Inject L as a water emulsion or with liquid fertilizer at planting.
Onions (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed or forage.
Aphids Mites Thrips	1.0-2.0 lb./A. (with 18-inch row spacing) or 0.6-1.0 oz./1,000 ft. of row(G)	Row application. Apply in band on each side of the seed furrow at planting. Broadcast or sidedress after plants become established.
	0.97 lb./A. (with 18-inch row spacing) or 0.56 oz./1,000 ft. of row(L)	Row application. Inject as a water emulsion or with liquid fertilizer on each side of the seed furrow at planting. Inject as a sidedress after plants become established.
Peanuts		0.75 ppm (peanuts) 5.0 ppm (peanut hay) Apply up to pegging through 2.0 lb./A. Row application. Do not apply in direct contact with seed. Do not feed treated vines to livestock. Do not allow hogging of treated peanuts. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O.O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Peanuts (continued)		
Aphids Leafhoppers Mites	1.0-2.0 lb./A. (with 36-inch row spacing) or 1.1-2.2 oz./ 1,000 ft. of for(G,FM.L)	Row application. Apply FM or G in band on each side of the furrow at planting or sidedress at pegging. Apply L undiluted in specially designed low volume injection equipment of inject L as a water emulsion or with liquid fertilizer. Apply on each side of the seed furrow at planting or sidedress at pegging.
Thrips	6.0 lb./A.(L)	Preplant broadcast soil application. Incorporate to a depth of 3-6 inches. Do not apply more than once per season.
	1.0-2.0 lb./A. (with 36-inch row spacing) or 1.1-2.2 oz./ 1,000 ft. of row(G.FM.L)	Row application. Refer to directions for aphids, leafhoppers and mites.
Peas		0.75 ppm (peas). 5.0 ppm (vines). 50 day preharvest interval through 2.5 lb./A. Soil application. Do not apply in direct contact with seed. Do not apply more than once per season. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Peas (continued)		
Aphids Leafhoppers	1.0-2.5 lb./A (G,FM)	Soil application. Drill or broadcast at planting or side-dress on each side of the row after emergence.
	0.97-1.72 lb./A. (L)	Row application. Use undiluted in specially designed injection equipment or apply as a water emulsion or with liquid fertilizer. Apply as an in-furrow spray or inject on each side of the seed furrow at planting or inject after plants become established.
	0.025-0.04 oz./ 50 ft. of row (G)	Row application. For home garden use. Apply below, to one side, or in a band on each side of the seed furrow at planting.
Pecans		0.75 ppm. 80 day preharvest interval through 3.0 lb./A. Soil application. Do not apply more than once per season.
Aphids	1.5-3.0 lb./A. (G,L)	Use restricted to South Central and Southwestern United States. Soil appliction preferably in early spring. Apply in 6 foot bands on both sides of the tree under the drip line. Work into top 2-3 inches of soil. On irrigated pecans, apply water as soon as possible following treatment.

O.O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Pineapples		0.75 ppm (pineapple). 5.0 ppm (pineapple foliage). 60 day preharvest interval through 2.5 lb./A. Soil or basal leaf application. Do not apply more than twice per crop season. When two applications are made, do not ensile foliage within one year of last application.
Mealybugs	2.5 lb./A.(G)	Soil application Broadcast or apply topically for base-leaf feeding after plants have developed root systems.
	2.5 lb./A.(L)	Use restricted to Hawaii. Inject with liquid fertilizer after plants have developed root systems.
Potatoes		0.75 ppm. 30 day preharvest interval through 1.0 lb./A. Foliage application. Do not make more than three applications per season. 75 day preharvest interval through 4.0 lb./A. Soil application. Do not make more than two applications per season. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Potatoes (continued)		
Aphids	2.0-3.0 lb./A. (with 38-inch row spacing) or 2.3-3.5 oz./ 1,000 ft. of row(G,L)	Row application. Apply G in furrow or sidedress alone or with fertilizer at planting. May also be side-dressed after plants become established. Apply L undiluted in specially designed equipment for low volume injection or apply as a water emulsion or with liquid fertilizer as an in-furrow spray or inject on each side of the seed furrow at planting. An additional sidedress water emulsion injection may be made after plants become established. Use higher rate on organic soils.
	0.12-0.18 oz./ 50 ft. of row(G)	Row application. For home garden use. Refer to G above.
	2.0-4.0 oz./A. (FM)	Row application. Place at 8 inch depth in furrow at planting or apply sidedress after plants become established. Use higher rate on organic soils.
	3.0-4.0 lb./A. (L)	Preplant broadcast soil application. Work into the top 2-3 inches of soil.
Aphid, green peach	0.37-1.0 lb./A. (L)	Foliage application. Apply in not less than one gallon total volume per acre. Use higher rate for heavy infestations.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Potatoes (continued)		
(Colorado potato beetle)	2.0-3.0 lb./A. (with 38-inch row spacing) or 2.3-3.5 oz./ 1,000 ft. of row(G,FM,L)	Row application. For early season reduction only. Refer to directions for aphids.
Flea beetles (excluding tuber flea beetle)	2.0-3.0 oz./A. (with 38-inch row spacing) or 2.3-3.5 oz./ 1,000 ft. of row(G,L)	Row application. Refer to directions for aphids.
	2.0-4.0 lb./A. (FM)	Row application. Refer to directions for aphids.
Leafhoppers Potato psyllid	2.0-3.0 lb./A. (with 38-inch row spacing) or 2.3-3.5 oz./ 1,000 ft. of row(G,FM,L)	Row application. Refer to directions for aphids.
	0.12-0.18 oz./ 50 ft. of row(G)	Row application. For home garden use. Refer to directions for aphids.
Southern potato wireworm	2.0-3.0 lb./A. (with 38-inch row spacing) or 2.3-3.5 oz./ 1,000 ft. of row(G,L)	Row application. Refer to directions for aphids.
	2.0-4.0 lb./A. (FM)	Row application. Refer to directions for aphids.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Radishes (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed or forage.
Aphids Thrips	1.0-2.0 lb./A. (with 18-inch row spacing) or 0.6-1.1 oz./1,000 ft. of row(G)	Row application. Place in a band on each side of the seed furrow or apply by broadcasting or side-dressing after plants become established.
	0.97 lb./A. (with 18-inch row spacing) or 0.56 oz./1,000 ft. of row(L)	Row application. Inject as a water emulsion or with liquid fertilizer on each side of the seed furrow at planting. Also may be injected as a sidedress after plants become established.
Raspberries (nonbearing nursery stock)		NF. Do not use treated crop for food, feed or forage.
Aphids	8.0 lb./A.(G)	Use restricted to the Northeast United States. Soil application. Broadcast in plant row of new or established plantings. Work into top 2-3 inches of soil. A second broadcast application may be made later in the season.
	0.18 lb./1,000 ft. of row(G)	Band application. Apply in a 24-inch band over row. Work into top 2-3 inches of soil. A second band application may be made later in the season.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Rice		0.75 ppm (rice). 5.0 ppm (straw). 100 day preharvest interval through 2.0 lb./A. Soil application. Do not apply more than twice per season. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Leafhoppers	2.0 lb./A.(G)	Soil application. Broadcast at planting or prior to flooding.
Sorghum		0.75 ppm (grain). 5.0 ppm (fodder and forage). 7 day preharvest interval for L through 0.5 lb./A. for grain. Foliage application. 28 day preharvest interval for L through 0.5 lb./A. for forage and fodder. Foliage application. Do not apply L more than twice per crop season. 14 day preharvest interval for G through 1.0 lb./A. for forage and fodder. Soil and foliage applications. 30 day preharvest interval for G through 1.0 lb./A. for grain. Soil and foliage applications. Do not apply G more than once per crop season. For extremely narrow row spacings, do not place treated zones closer together than 6 inches. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sorghum (continued)		
Aphids (including greenbug)	0.25-0.5 lb./A. (L)	Foliage application. Apply in not less than one gallon of water for aerial applications and in not less than five gallons of water for ground equipment.
	0.75-1.0 lb./A. (with 40-inch row spacing) or 0.9-1.2 oz./ 1,000 ft. of row(any row spacing) (G)	Row application. Apply G into seed furrow approximately 1/2 inch above seed at planting.
	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row (any row spacing) (G)	Row application. Apply G in a 4-6 inch band directly behind planter shoe and in front of press wheel at planting. Foliage application. Broadcast G into whorls.
Banks grass mite	0.5/A.(L)	Use restricted to Oklahoma and Texas (excluding the Trans-Pecos area). Foliage application. Apply in not less than one gallon of water for aerial application and in not less than five gallons of water for ground equipment. Do not apply more than twice per season. For use only if no at-planting application was made.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sorghum (continued)		
Sorghum midge	0.25-0.5 lb./A. (L)	Use restricted to Arkansas, Louisiana, Oklahoma and Texas. Foliage application. Apply in not less than one gallon of water for aerial application and in not less than five gallons of water for ground equipment. Make one application when 50% of the heads have emerged from the boot. Repeat application 3-5 days later.
Soybeans (food crop)		0.1 ppm (soybeans). 0.25 ppm (forage and hay). Do not apply in direct contact with seed.
(seed crop only)		NF. Do not apply in direct contact with seed. At extremely narrow row spacings, do not place treated zones closer together than 6 inches. Apply as needed. Do not graze or use treated crop for food, feed or forage.
Mexican bean beetle (larvae) Thrips (excluding flower thrips)	1.0 lb./A. (with 36-inch row spacing)(G)	Row application. Place in 4-inch band over the seed furrow behind the planter shoe and in front of the press wheel or apply in a band on each side of the seed furrow at planting.
Spinach		0.75 ppm. Do not apply in direct contact with seed. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Spinach (continued)		
Aphids Leafhoppers	1.0 lb./A. (with 20-inch row spacing) or 0.6 oz./1,000 ft. of row (G,FM,L)	Row application. Place G and FM in a band on each side of the seed furrow at planting. Inject L as a water emulsion or with liquid fertilizer on each side of seed furrow at planting.
	0.02-0.06 oz./ 50 ft. of row(G)	Row application. For home garden use. Refer to G above.
Leafminers	1.0 lb./A. (with 20-inch row spacing) or 0.6 oz./1,000 ft. of row(G)	Row application. Place in a band on each side of the seed furrow at planting.
Mites Thrips	1.0 lb./A. (with 20-inch row spacing) or 0.6 oz./1,000 ft. of row (FM,G,L)	Row application. Place G and FM in a band on each side of the seed furrow at planting. Inject L as a water emulsion or with liquid fertilizer on each side of seed furrow at planting.
	0.02-0.06 oz./ 50 ft. of row(G)	Row application. For home garden use. Refer to G above.
Strawberries (propagating beds only)		NF. Do not use treated crop for food, feed or forage.
Aphids Mites (excluding cyclamen mite)	2.0-4.0 lb./A. (with 42-inch row spacing) or 2.6-5.2 oz./ 1,000 ft. of row(G,L)	Soil application. Sidedress G on each side of the row or broadcast over the row as needed. Inject L as a water emulsion or with liquid fertilizer on each side of the row as needed.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sugar beets		0.5 ppm (beets). 2.0 ppm (tops). 30 day preharvest interval through 1.0 lb./A. Foliage or soil application. Do not apply in direct contact with seed. Do not apply more than 3 times per season. Allow a minimum of 21 days between applications. Under adverse conditions (i.e. extremely cool and wet or extremely dry) and maximum rates disulfoton may cause delay in emergence, stunting or stand reduction. Such damage may be more pronounced in light, sandy soil. Plant injury may also occur or be enhanced when disulfoton is used with certain preemergence herbicides. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids Leafhoppers Mites	1.0 lb./A. (with 30-inch row spacing) or 0.9 oz./1,000 ft. of row (FM,G,L)	Soil application. Apply G in seed furrow two inches under the seed or band on each side of the seed furrow at planting. Apply FM in a band on each side of the seed furrow at planting or sidedress after plants become established. Inject L as a water emulsion or with liquid fertilizer on each side of the seed furrow or spray in seed furrow two inches under seed at planting or inject as a sidedress after plants become established. Foliage application. Apply G to foliage and crowns.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sugar beets (continued)		
Sugarbeet root maggot	1.0 lb./A. (with 22-inch row spacing) or 0.7 oz./1,000 ft. of row(G)	Use restricted to Minnesota and North Dakota. Row application. Apply in a 4-6 inch band directly behind the planter shoe and in front of the press wheel. Place approximately one inch above seed.
Sugarcane		0.3 ppm. 28 day preharvest interval through 0.56 lb./A. Foliage application. Do not apply more than 4 times per season.
Aphids	0.37-0.56 lb./A. (L)	Use restricted to Puerto Rico. Foliage application. For aerial application, use approximately 4 gallons of water per acre.
Tobacco		NF.
Aphids	2.0-4.0 lb./A. (with 48-inch row spacing) or 3.0-6.0 oz./1,000 ft. of row(G,FM)	Preplant soil application. Apply G in a 6-12 inch band over the row or broadcast FM and work into top 2-3 inches of soil immediately before transplanting.
	4.0 lb./A. (with 48-inch row spacing) or 6.0 oz./1,000 ft. of row(L)	Use restricted to Southeastern United States. Preplant soil application. Broadcast or apply in a 10-12 inch band over the row. Work into the top 2-3 inches of soil. Formulated with O,O-diethyl O-[p-(methylsulfinyl) phenyl] phosphorothioate.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tobacco (continued)		
Flea beetles	2.0-4.0 lb./A. (with 48-inch row spacing) or 3.0-6.0 oz./ 1,000 ft. of row(G,FM)	Preplant soil application. Refer to directions for aphids.
	4.0 lb./A.(L)	Preplant broadcast soil application. Disc into top 2-3 inches of soil.
(Southern potato wireworm)	2.0-4.0 lb./A. (with 48-inch row spacing) or 3.0-6.0 oz./ 1,000 ft. of row(G,FM)	Preplant soil application. Refer to directions for aphids.
Wireworms	4.0 lb./A. (with 48-inch row spacing) or 6.0 oz./1,000 ft. of row(L)	Use restricted to Southeastern United States. Preplant soil application. Broadcast or apply in a 10-12 inch band over the row. Work into the top 2-3 inches of soil. Formulated with O,O-diethyl O-[p-(methylsulfinyl) phenyl] phosphorothioate.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tomatoes		0.75 ppm. 30 day preharvest interval through 5.0 lb./A. Soil application. Do not apply in direct contact with seed. Allow a minimum of 21 days between applications. Under adverse conditions (i.e. extremely cool and wet or extremely dry) and maximum rates disulfoton may cause delay in emergence, stunting or stand reduction. Such damage may be more pronounced in light, sandy soil. Plant injury may also occur or be enhanced when disulfoton is used with certain preemergence herbicides. Claims against the Colorado potato beetle are limited to early season reduction only. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids (Colorado potato beetle) Flea beetles Leafhoppers Leafminers Mites	1.0-3.0 lb./A. (with 38-inch row spacing) or 1.2-3.5 oz./ 1,000 ft. of row(G,FM)	Row application. Place in band on each side of the seed furrow at planting.
		-or-
	1.0-2.0 lb./A. (with 38-inch row spacing) or 1.2-2.4 oz./ 1,000 ft of row(G,FM,L)	Row application. Place G and FM in band on each side of the seed furrow or transplant row at planting and repeat as a side-dress application on each side of the row after plants become established. Inject L on each side of the seed furrow or transplant row at planting and repeat as a side-dress after plants become established.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tomatoes (continued)		
Aphids (Colorado potato beetle) Flea beetles Leafhoppers Leafminers Mites (continued)	3.0 lb./A. (with 38-inch row spacing)(L)	Broadcast soil application. For transplant seed beds, Work into top 2-3 inches of soil.
		Row application. Use undiluted in specially designed low volume injection equipment or apply as a water emulsion or with liquid fertilizer on each side of the seed furrow or transplant row at planting.
	0.54-5.0 lb./A. (with 72-inch row spacing) or 1.2-11 oz./ 1,000 ft. of row(G)	Use restricted to Florida on highly alkaline soils. Row application. Band on each side of the seed furrow at planting.
		-or-
	0.27-2.5 lb./A. (with 72-inch row spacing) or 0.6-5.5 oz./ 1,000 ft. of row(G)	Use restricted to Florida on highly alkaline soils. Row application. Band on each side of the seed furrow at planting and repeat as a sidedress after plants become established.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tomatoes (continued)		
Aphids (Colorado potato beetle) Flea beetles Leafhoppers Leafminers Mites (continued)	0.54-5.0 lb./A. (with 72-inch row spacing) or 1.2-11 oz./ 1,000 ft. of row(L)	Use restricted to Florida on highly alkaline soils. Row application. Inject in a band on each side of seed furrow or the transplant row at planting.
		-or-
	0.27-2.5 lb./A. (with 72-inch row spacing) or 0.6-5.5 oz./ 1,000 ft. of row(L)	Use restricted to Florida on highly alkaline soils. Row application. Inject in a band on each side of seed furrow or transplant row at planting and repeat as a sidedress after plants become established.
	1 rounded tsp. 2%/ft. of row or 0.06-0.18 oz./ 50 ft. of row(G)	Soil application. For home garden use. Place below or in a band to one side of the seed at planting.
	2 rounded tsp. 1% or 1 rounded tsp. 2%/plant(G)	Soil application. Mix with soil in transplant hole prior to setting plants.
Turnips (seed crop only)		NF. Do not apply in direct contact with seed. Do not graze or use treated crop for food, feed or forage. Repeat as needed.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Turnips (continued)		
Aphids Thrips	1.0-2.0 lb./A. (with 18-inch row spacing) or 0.6-1.1 oz./1,000 ft. of row(G)	Row application. Apply in band on each side of furrow at planting. Broadcast or sidedress applications after plants become established.
	0.97 lb./A. (with 18-inch row spacing) or 0.56 oz./1,000 ft. of row(L)	Row application. Inject as a water emulsion or with liquid fertilizer on each side of the furrow at planting or inject as sidedress after plants become established.
Wheat		0.3 ppm (grain). 5.0 ppm (green fodder and straw). 7 day pregrazing interval through 0.25 lb./A. Foliage application. 14 day pregrazing interval through 0.375 lb./A. Foliage and soil applications. 21 day pregrazing interval through 0.75 lb./A. Foliage and soil applications. ** 30 day pregrazing or preharvest interval through 1.0 lb./A. Soil application. For seed crop use only, refer to paragraph under Agricultural Crops, III-D-28.1.
Aphids (including greenbug)	0.25-0.75 lb./A. (L)	Use restricted to states west of the Mississippi River. Foliage application. Apply in the fall. Repeat in 30 days as needed. Apply in the spring at green-up. Repeat in 30 days as needed. Spring applications may be made following fall treatment. Apply in not less than one gallon total volume. Use lower dosages on plants up to tillering (stooling) and higher dosages after tillering has started.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Wheat (continued)		
Aphids (continued) (including greenbug)	0.375-0.75 lb./A. (L)	Use restricted to states west of the Mississippi River. Soil application. Apply as a top dressing with ground equipment in liquid fertilizer.
**	1.0 lb./A.(G)	Fall soil application. Drill or broadcast at planting.
Hessian fly	1.0 lb./A. (L,G,FM)	Fall soil application. Drill or broadcast G or FM at planting. Inject L as a water emulsion or with liquid fertilizer at planting.
Mites	0.25-0.75 lb./A. (L)	Refer to directions for aphids above.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS		
(Herbaceous Plants and Bulbs)		
Do not use formulations of disulfoton containing the herbicide trifluralin around Ajuga, Amaranthus, Celosia, Periwinkle or Portulaca. Apply only to established plants.		
Annual plants Herbaceous plants (including Ageratum Asters Calendulas Carnations Chrysanthemums Dahlias Delphiniums Gladioli Iris Petunias Zinnias)		
Aphids Lace bugs Leafhoppers Leafminers Mites (including spider mites)	0.08-0.4 oz./ 100 sq. ft. of bed(FM)	Broadcast soil application. Work into the top 1-2 inches of soil and water thoroughly. Do not repeat application for at least 6 weeks.
Thrips Whiteflies	0.08-0.32 oz./ 100 sq. ft. of bed(G)	Broadcast soil application. Work into the soil before planting or after plants become established. Repeat at 4-6 week intervals as needed.
	1-2 rounded tsp. 1% or 1 rounded tsp. 2%/ft. of row or/6-inch pot or/plant(G)	Soil application. Place around base of plant, work into the soil and water thoroughly. Repeat at 4-6 week intervals as needed.
	0.5 cup 2%/ 6 ft. of row(G)	Row application. Band near base of plants, work into soil and water thoroughly.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Annual plants (continued) Herbaceous plants		
	1.6 oz./150-300 ft. of row (G)	Row application. For use by commercial growers and applicators only. Band on each side of seed furrow or over the row. Work into the soil and water thoroughly. Use higher rate for muck or other high organic content soils. For Easter lilies and gladioli, apply in furrow over bulbs before covering them with soil. Do not apply in furrow treatment to garden lily bulbs.

(Woody Shrubs, Trees and Vines)

Do not use formulations of disulfoton containing the herbicide trifluralin around Ajuga, Amaranthus, Celosia, Periwinkle or Portulaca. Apply only to established plants.

Elm

Elm leaf beetle European elm scale	0.025-0.25 lb./tree or 0.025 lb./inch of trunk diameter(G)	Broadcast soil application. For use by commercial growers and applicators only. Distribute evenly around tree from near base of trunk out to the drip line. Work into soil and water thoroughly. The higher dosage per tree is for muck and other high organic content soils. For transplanting, place disulfoton into the planting hole or dip tree into a puddling clay slurry of 2 parts disulfoton to 4-9 parts by weight of clay before planting.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Roses		
Aphids Brown soft scale Leafhoppers Spider mites Thrips Whiteflies	0.02-0.08 oz./ plant(FM)	Soil application for established roses. Water plants before and after application. Distribute evenly around plant from near the base out to the drip line in spring when about one inch of new growth is present. Work into top 1-2 inches of soil. Repeat at 6 week intervals as needed.
	0.64 oz./100 sq. ft. of area(FM)	Preplant broadcast soil application. Distribute evenly on prepared bed. Work into top 4-5 inches of soil.
	0.02-0.03 oz./ plant(FM)	Soil application at time of transplanting. Place 1/3 to 1/2 of the disulfoton into the transplant hole and mix with the fill. Add remainder to the top 2 inches of soil and water thoroughly. Six weeks later, apply 0.03 oz. and work lightly into the soil.
	0.5 cup of 1%/ plant(FM)	Soil application. For bare root transplants, prepare hole 12-15 inches deep and wide enough to extend roots. Mix disulfoton with the soil, plant and water thoroughly. For potted roses, prepare a hole 12-15 inches deep and up to 16 inches wide. Mix disulfoton with the soil, fill in around plant and water thoroughly. For established plants, distribute evenly around rose from near the base out to the drip line. Work into the soil and water thoroughly. Repeat monthly as needed during the growing season.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Roses (continued)		
Aphids Brown soft scale Leafhoppers Spider mites Thrips Whiteflies (continued)	4 tbsp. 2%/ft. (plants 1-3 ft. high), 0.5 cup 2%/ft. (plants over 3-6 ft. high), 0.75 cup 2%/ft. (plants over 6-12 ft. high) (G)	Soil application. Distribute evenly under rose bush. Work into soil and water thoroughly. Repeat in 4-6 weeks as needed.
	4-8 rounded tbsp. 1%/plant or 2-4 rounded tbsp. 2%/plant (G)	Soil application. Distribute evenly around plant from near the base out to the drip line. Work into top 1-2 inches of soil and water thoroughly. Use lower rate for plants up to 3 feet high and higher rate for plants over 3 up to 6 feet high.
	2 rounded tbsp. 2%/ft. (plants 1-3 ft. high), 4 rounded tbsp. 2%/ft. (plants over 3-6 ft. high) (G)	Soil application. Distribute evenly around plant from near the base out to the drip line. Work into top 1-2 inches of soil and water thoroughly. Repeat at 4-6 week intervals as needed.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Roses (continued)		
Aphids Brown soft scale Leafhoppers Spider mites Thrips Whiteflies (continued)	2% (cartridge)	Soil application. Apply in early spring when new growth first appears. Dispense cartridge in special device attached to a garden hose. Use one cartridge/ 1-3 foot high plant. Apply 1 additional cartridge for each added foot of height or breadth. Place probe into root zone under outer branches to a depth of 6 to 14 inches depending on shallowness of the root system. Do not remove device while water is running. Repeat probing around plant until cartridge is dissolved. Repeat at 6 week intervals through midsummer as needed.
Shrubs Trees (including Azalea Birch Camelia Euonymous Holly Liliac Moraine locust Pine Pyracantha Rhododendron Spirea Yew)		

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees		
Aphids Lace bugs Leafhoppers Leafminer, birch Leafminer, holly Leafminers Mimosa webworm Mites (including spider mites) Pine tip moth Scale, brown soft Scale, camellia Scale, tea Thrips Whiteflies	0.03-0.04 oz./ 8-10 sq. ft. of soil area or/ plant(FM) or 0.04 oz./5 ft. of row(FM)	Broadcast soil application. Distribute evenly around plant from near base out to the drip line. Work lightly into the top 1-2 inches of soil and water thoroughly. Apply at 6 week intervals as needed.
	0.02 oz./plant (FM)	Transplant soil application. Place one half the amount in the transplant hole while filling it. Work the rest into the top 2 inches of soil and water thoroughly. Apply at 6 week intervals as needed.
	0.02 oz./ft. (plants 1-3 ft. high), 0.04 oz./ft. (plants over 3-6 ft. high), 0.05 oz./ft. (plants over 6-12 ft. high) (FM)	Soil application. Distribute evenly around plant from near base out to the drip line. Work into the top 1-2 inches of soil and water thoroughly. -or- Place in 2 or more holes, 4-6 inches deep, scattered under the drip line.
	4.0-8.0 rounded tbsp. 1% or 2.0-4.0 rounded tbsp. 2%/plant (G)	Soil application. Distribute evenly around plant from near the base out to the drip line. Work into the top 1-2 inches of soil and water thoroughly. Use lower rates for plants up to 3 feet high and higher rates for plants over 3 up to 6 feet high.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees		
	4.0 tbsp. 2%/ft. (plants 1-3 ft. high), 0.5 cup 2%/ft. plants over 3-6 ft. high), 0.75 cup 2%/ft. (plants over 6-12 ft. high) (G)	Soil application. Distribute evenly around plant from near base out to the drip line. Work into the top 1-2 inches of soil and water thoroughly. Repeat in 4-6 weeks as needed.
	2 rounded tbsp. 2%/ft.(plants 1-3 ft. high), 4 rounded tbsp. 2%/ft.(plants over 3-6 ft. high) (G)	Soil application. Distribute evenly around plant from near base out to the drip line. Work into top 1-2 inches of soil and water thoroughly. Repeat at 4-6 week intervals as needed.
	0.025-0.25 lb./ plant or 0.025 lb./inch of trunk diameter (G)	Distribute evenly around plant from near base out to the drip line. Work into soil and water thoroughly. The higher dosage per plant is for muck and other high organic content soil. For transplanting, place disulfoton into the planting hole or dip plant into a puddling clay of 2 parts disulfoton to 4-9 parts by weight of clay before planting.

O,O-DIETHYL S-[2-(ETHYLTHIO)ETHYL] PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees		
	2% (cartridge)	Soil application. Apply in early spring when new growth first appears. Dispense cartridge in special device attached to a garden hose. Use one cartridge/ 1-3 foot high plant. Apply 1 additional cartridge for each added foot of height or breadth. Place probe into root zone under outer branches to a depth of 6 to 14 inches depending on shallowness of the root system. Do not removed device while water is running. Repeat probing around plant until cartridge is dissolved. Repeat at 6 week intervals through midsummer as needed.
FOREST, NONAGRICULTURAL AND WASTELAND		
Forest plantings		
Aphids Elm leaf beetle Lace bugs Leafhoppers Leafminer, birch Leafminer, holly Mimosa webworm Mites Pine tip moth Scale, brown soft Scale, camellia Scale, European elm Scale, tea Thrips Whiteflies	0.025-0.25 lb./ tree or 0.025 lb./inch of trunk diameter(G)	Distribute evenly around plant from near base out to the drip line. Work into soil and water thoroughly. The higher dosage per tree is for muck and other high organic content soil. For transplanting, place disulfoton into the planting hole or dip tree into a puddling clay slurry of 2 parts disulfoton to 4-9 parts by weight of clay before planting.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE*

PRINCIPAL FORMULATIONS: EC; WP; D; G

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Alfalfa	40 (fresh alfalfa) 10 (hay)	0.5 (spray)	Dairy cattle, beef cattle, and sheep; (1) may be grazed immediately following application; (2) may be fed green alfalfa immediately following cutting; and (3) may be fed hay provided alfalfa is not cut for hay for 7 days following treatment. Do not spray livestock directly with either air or ground equipment.
		0.6 (dust)	Do not apply within 7 days of cutting or grazing by animals being finished for slaughter.
		4.0	Preplanting broadcast soil application.
		1.5	Do not graze livestock within 2 days after application. Do not cut for hay within 10 days after application.
Almonds	0.5(nuts) 3(hulls)	6.0	No time limitations.
Apples	0.75	6.0	14 days. Full coverage spray.
Apricots	0.75	4.0	10 days. Full coverage spray.
Bananas	0.2 (not more than 0.1 ppm in pulp)	0.5	Apply in water to achieve thorough coverage of hanging stems. No limitations.
		2.0	Apply to soil around mats 3 to 4 times at monthly intervals. Application should be made with hand or ground equipment.

*Proprietary name: "Diazinon"

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Bananas (continued)	0.2 (not more than 0.1 ppm in pulp)	0.0175 (oz. per stem)	Wettable powder. Apply to inner surface of polyethylene bag which is tied securely around newly developing stem and left in place until harvest.
		0.036 (oz. per stem)	Granular formulations. Apply in paper or plastic envelope and attach to stalk above bottom hand of newly developing stem. Then cover stem with polyethylene bag which is left in place until harvest.
Barley	NF	2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Beans (pole) (snap)	0.75 (beans) 25.0 (forage)	0.5 (spray)	Do not apply within 7 days of bean harvest. Treated forage may be fed to livestock after 1 day following treatment or cut for hay after 4 days following treatment.
	10.0 (hay)	0.75 (spray)	Do not apply within 7 days of bean harvest. Forage and hay may be fed to beef cattle, dairy cattle and sheep. Wait 4 days following treatment if forage is to be cut for hay.
		1.4 (dust)	7 days.
		10.0	Preplanting broadcast soil application.
		2.0 (granular)	Apply in 6-inch band over row when plants are 1/2 to 1 inch tall.
		2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Beets	0.75 (roots and tops)	10.0	Preplanting broadcast soil application.
		0.5	14 days.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Blueberries	0.75	1.0	7 days.
Broccoli	0.75	0.5 (spray) 1.6 (dust)	5 days.
		1.0	Furrow and seed treatment at time of planting.
		0.06% (in water)	Apply as a transplant solution at the rate of one cupful per plant.
		4.0	Preplanting broadcast soil application.
Brussels sprouts	0.75	0.5	7 days. Foliar application.
		4.0	Preplanting broadcast soil application.
Cabbage	0.75	0.5 (spray) 1.6 (dust)	7 days.
		1.0	Furrow and seed treatment at time of planting.
		0.06% (in water)	Apply as a transplant solution at the rate of one cupful per plant.
		10.0	Preplanting broadcast soil application.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Caneberries:	0.75	1.0	7 days.
Blackberries Boysenberries Dewberries Loganberries Raspberries		6.0	Apply as a drench to lower canes and crown area. Do not apply when fruit is present.
Carrots	0.75	0.5 (foliar spray)	10 days.
		10.0	Preplanting broadcast soil application.
		2.0	Apply to seed furrow at time of planting.
Cauliflower	0.75	0.5 (spray) 1.6 (dust)	5 days.
		1.0	Furrow and seed treatment at time of planting.
		0.06% (in water)	Apply as a transplant solution at the rate of one cupful per plant.
		4.0	Preplanting broadcast soil application.
Celery	0.75	0.5	10 days.
		4.0	Preplanting broadcast soil application.
Cherries	0.75	5.0	Postharvest application only.
		4.0	10 days.
Citrus	0.75	10.0	21 days.
Clover	40 (fresh clover)	0.6	Dust or spray application. Do not apply within 7 days of cutting or grazing by animals being finished for slaughter.
	10 (clover hay)	4.0	Preplanting broadcast soil application.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Collards	0.75	0.5 (spray) 1.6 (dust)	10 days.
		4.0	Preplanting broadcast soil application.
Corn	0.75 (on kernels and cob with husks removed) 40.0 (on corn forage)	1.25 (spray)	Corn may be picked immediately following last application. Corn forage may be fed to dairy cattle, beef cattle, and sheep.
		2.0	Corn may be picked immediately following last application. Do not feed forage to livestock within ten days following last application.
		1.6 (dust)	Do not apply within 2 days of harvest. Do not feed treated forage to animals being finished for slaughter within 2 days after treatment.
		1.0	Apply as a spray around base of plants, between time of planting and last cultivation.
		2.0	Soil application to furrow at time of planting, or in a 10-inch band over row at planting time or when crop begins to emerge.
		5.2 (granular) 5.5 (spray)	Soil application at planting time; 15 inch row spacing, 34,848 linear feet of row per acre.
		10.0	Preplanting broadcast soil application.
		2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Cotton	0.2 (cotton-seed)	1.0 (spray)	Do not apply within 14 days of harvest. Do not graze treated cotton plants nor feed gin waste to livestock.
	NF	2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Cowpeas	0.1 (cowpeas and forage)	4.0	Preplanting broadcast soil application. Work into soil immediately.
Cranberries	0.75	3.0	7 days.
Cucumbers	0.75	0.5 (spray) 1.6 (dust)	7 days.
		4.0	Preplanting broadcast soil application.
Dandelions	0.75	0.5	Do not apply within 10 days of harvest.
Endive	0.75	0.5	10 days.
		4.0	Preplanting broadcast soil application.
Figs	0.75	4.0	10 days. Full coverage spray.
		2.5	5 days. Full coverage spray.
Filberts	0.5	2.0	No time limitations.
Grapes	0.75	1.0	10 days.
		0.56	7 days.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Grass (other than range or pasture grasses but including Bermuda grass)	60 ppm on grass of which not more than 40 ppm shall remain 24 hrs. after application	0.5 (in water)	Dairy cattle, beef cattle and sheep; (1) may be grazed immediately following application, (2) may be fed green forage immediately following cutting and (3) grass may be cut for hay 7 days following treatment. Do not repeat application more often than once every 30 days.
	10 ppm on grass hay	0.5 (in oil)	Dairy cattle, beef cattle and sheep; (1) may be grazed immediately following application, (2) may be fed green forage immediately following cutting and (3) grass should not be cut for hay for 30 days following treatment. Do not repeat application more often than once every 30 days if grass is to be grazed.
Grass ((range and pasture grasses only)(this includes the slower growing grass not usually used for hay))	60 ppm on grass of which not more than 40 ppm shall remain 24 hrs.after application.	0.5 (in water)	Dairy cattle, beef cattle and sheep; (1) may be grazed immediately following application, (2) may be fed green forage immediately following cutting and (3) grass should not be cut for hay for 21 days following treatment. Do not repeat application more often than once every 30 days.
	10 ppm on grass hay	0.5 (in oil)	Dairy cattle, beef cattle and sheep; (1) may be grazed immediately following application, (2) may be fed green forage immediately following cutting and (3) grass should not be cut for hay for 30 days following treatment. Do not repeat application more often than once every 30 days if grass is to be grazed.
** Guar	0.1(beans &forage)	0.5	Use restricted to Oklahoma and Texas only. Do not make more than three applications to the same crop. Do not apply within 12 weeks of harvest. Do not graze or feed treated forage to livestock within 12 weeks of harvest.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Hops	0.75	1.0 (spray) 2.0 (dust)	14 days.
Kale	0.75	0.5 (spray) 1.6 (dust)	10 days.
		4.0	Preplanting broadcast soil application.
Lespedeza	1.0	4.0	Preplanting broadcast soil application. Work into soil immediately.
Lettuce	0.75	0.5	10 days.
		10.0	Preplanting broadcast soil application.
Lima beans	0.75 (beans) 25.0 (forage)	0.5 (spray)	Do not apply within 7 days of bean harvest. Treated forage may be fed to livestock after 1 day following treatment or cut for hay after 4 days following treatment.
	10.0 (hay)	0.75 (spray)	Do not apply within 7 days of bean harvest. Forage and hay may be fed to beef cattle, dairy cattle and sheep. Wait 4 days following treatment if forage is to be cut for hay.
		1.4 (dust)	7 days.
		4.0	Preplanting broadcast soil application.
		2.0 (granular)	Apply in a 6-inch band over row when plants are 1/2 to 1 inch tall.
		2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Melons	0.75	0.75 (spray) 1.4 (dust)	3 days.
		4.0	Preplanting broadcast soil application.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Mustard greens	0.75	1.0	Broadcast soil application 1-2 days prior to sowing seed or transplanting. Mix immediately with top 1-2" of soil.
Nectarines	0.75	4.0	10 days. Full coverage spray.
Oats	NF	2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Olives	1.0	12.0	75 days.
Onions (including green onions)	0.75	0.5 (spray) 1.2 (dust)	10 days.
		4.0	Preplanting broadcast soil treatment.
		1.5	Apply to furrow at time of planting.
Parsley	0.75	0.5 (spray) 1.6 (dust)	12 days.
		4.0	Preplanting broadcast soil application.
Parsnips	0.75	0.5	10 days.
		4.0	Preplanting broadcast soil application.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Peaches	0.75	4.0	20 days.
Peanuts	0.75 (in nuts) 40 ppm (in forage) 10 ppm (in hulls and hay)	4.0	Apply just prior to pegging and work into top few inches of soil immediately.
		2.0	21 days. Livestock (1) may be fed peanut hulls, (2) may be fed peanut forage 7 days following treatment, and (3) may be fed peanut hay 21 days following treatment.
Pears	0.75	12.0	Postharvest application.
		6.0	14 days. Full coverage spray.
Peas	0.75 (peas with shells removed)	0.5	Peas may be picked immediately. Peavines and peavine hay may be fed to dairy cattle, beef cattle, and sheep. Wait 4 days following treatment if forage is to be cut for hay.
	10 (peavine hay)	10.0	Preplanting broadcast soil application.
	25 (peavine)	2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Pecans	0.5	3.0	Do not apply after husks crack.
Peppers	0.75	5.0	No application after first bloom.
		0.25 (spray) 1.6 (dust)	5 days.
		4.0	Preplanting broadcast soil application.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Pineapples	0.75 (pineapple)	2.0	Pineapple forage and refuse may be fed to livestock 7 days after last application.
	40 (pineapple forage)	5.0	Postharvest application to vegetative slips on the plants.
Potatoes	0.1	2.0	Foliar spray. 35 days.
		2.0	Preplanting band soil application.
		3.0 (granular)	Preplanting band soil application.
		6.0	Preplanting broadcast soil application.
Plums	0.75	4.0	Full coverage spray. 10 days.
Prunes	0.75	4.0	Full coverage spray. 10 days.
Radishes	0.75	0.5	10 days.
		2.0	Apply to furrow at time of planting.
		10.0	Preplanting broadcast soil application.
Rye	NF	2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Sorghum	0.75 (grain)	0.5	Do not apply within 7 days of harvest for grain. Crop may be fed to livestock immediately following treatment.
	10 (forage)	4.0	Preplanting broadcast soil application.
		2.0 (granular)	Apply in a 10-inch band over row at planting time or when crop begins to emerge.
		2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Soybeans	0.1 (soybeans and forage)	4.0	Preplanting broadcast soil application. Work into soil immediately.
		2.0 (granular)	Apply in a 6-inch band over row when plants are 1/2-1 inch high.
	NF	2.0 oz./bu. seed	Seed treatment. Do not use for food, feed or oil.
Spinach	0.75	0.5	10 days.
		4.0	Preplanting broadcast soil application.
Squash (summer)	0.75	0.75 (spray) 1.4 (dust)	7 days.
		4.0	Preplanting broadcast soil application.
Squash (winter)	0.75	0.75 (spray) 1.4 (dust)	3 days.
		4.0	Preplanting broadcast soil application.
Strawberries	0.75	1.0	Broadcast soil application 1 to 2 days prior to sowing seed in plant beds or transplanting in fields. Mix with top 1-2" of soil.
		3.0	Postharvest use only.
		1.0 (spray) 1.2 (dust)	5 days.
Sugar beets	10 (tops) 0.75 (roots)	4.0	Preplanting broadcast soil application.
		0.5 (spray)	No time limitations. Tops may be fed to dairy and beef animals.
		2.0 (granular)	Soil treatment at planting time. Apply in a 5-7-inch band above seed, or as a furrow treatment after seed is covered.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Sugarcane	0.75	4.0 (spray) 6.0 (granular)	Apply in a 12-inch band over seed pieces in open furrow at time of planting.
		2.5 (granular)	Broadcast application to young plants. Do not apply more than 4 times per growing season. Allow 28 days between last application and harvest. At that time, bagasse and forage may be fed to livestock.
		0.5 (spray)	1 day. Foliar application. Bagasse and forage may be fed to livestock.
Sweetpotatoes	0.1	3.0	Apply at time roots begin to enlarge.
		4.0	Preplanting broadcast soil application.
Swiss chard	0.75	0.5 (spray) 1.6 (dust)	12 days.
		4.0	Preplanting broadcast soil application.
Tobacco	NF	3	Soil treatment 3 to 4 weeks before transplanting. Incorporate into soil.
		12	Plant bed treatment. Apply as a drench with sprinkling can.
		0.5 (spray)	Do not apply within 14 days of harvest.
		1 (dust)	Do not apply within 14 days of harvest.
Tomatoes	0.75	0.75 (spray) 0.8 (dust)	1 day.
		1.0 (granular)	No time limitations.
		1.6 (dust)	3 days.
		10.0	Preplanting broadcast soil application.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Tropical fruits	NF	30 gms./A.	Fruit pomace bait formulation. Do not contaminate fruit.
Turnips	0.75 (roots and tops)	0.75 (spray) 1.6 (dust)	10 days.
		1.0	Apply to furrow at time of planting.
		10.0	Preplanting broadcast soil application.
Walnuts	0.5	3.0	Do not apply after the husks open.
Watercress	0.75	0.5	5 days. Use restricted to Hawaii.
Watermelons	0.75	0.75 (spray) 1.4 (dust)	3 days.
		4.0	Preplanting broadcast soil application.
Wheat	NF	2.0 oz./bu. seed	Seed treatment. Do not use as food or feed.
Miscellaneous: Rangeland Ditchbanks Roadsides Wasteland Noncrop areas Barrier strips	60 ppm on grass of which not more than 40 ppm shall remain 24 hrs.after application 10 ppm on grass hay	0.5	Dairy cattle, beef cattle, and sheep; (1) may be grazed immediately following application; (2) may be fed green forage immediately following cutting; and (3) may be fed hay provided grass is not cut. for hay for 21 days if the spray is a water solution or for 30 days if the spray is an oil solution. Do not spray livestock directly with either air or ground equipment. Do not repeat the application for 30 days.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Animals:			
Sheep	0.75 (fat, meat, and meat by-products)	0.03% (in water)	Apply one gallon per animal as a high pressure spray. Do not apply within 14 days of slaughter.
		0.06% (in water)	Apply one quart per animal as a low pressure spray or as a sprinkler can application. Do not apply within 14 days of slaughter.
		2.0% (dust)	Apply 1 1/2 oz. per animal. Do not apply within 14 days of slaughter.
Agricultural premises:			
Barns	NF	120 mgs./sq. ft.	Apply to interior and exterior surfaces as a residual spray. Do not contaminate milk, feed, or drinking water. Do not apply to animals. (Add sugar or molasses for bait spray.)
Animal sleeping quarters (except dairy barns, milk rooms, and poultry houses)	NF	5.0% (dust)	Apply thoroughly in cracks, crevices, and places where insects hide or congregate. Do not contaminate milk, feed, or drinking water.
		2.0% (bait)	Dry sugar bait formulation. Apply 40 gms. of bait per 1,000 sq. ft. of floor space.
		10.0 gms./ 100 sq. ft.	Dry sugar bait formulation. Apply over breeding area.

O,O-DIETHYL O-(2-ISOPROPYL-6-METHYL-4-PYRIMIDINYL) PHOSPHOROTHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Mushroom houses	NF	1.0% (in water)	Apply as a spray to all exterior and interior surfaces and ventilators after compost has been pasteurized by heating. Do not apply to compost or after spawning.
		0.5% (in water)	Apply with a brush to wooden sides of beds, doors, posts, and other interior surfaces after compost has been pasteurized.
Poultry houses (for caged poultry only)	NF	1 oz. actual/ 500 sq. ft.	Use one ounce in 5 gallons of water per 500 square feet of poultry droppings under caged poultry only. Do not use in poultry houses except for fly maggot control in manure where poultry is on wire and cannot come in contact with the product.

O,O-DIETHYL O-[*p*-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE*

PRINCIPAL FORMULATIONS: EC, G

TYPE PESTICIDE: Insecticide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Livestock Tolerances

0.02 ppm (meat, fat, meat byproducts of cattle, goats, sheep).

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL CROPS		
Corn (field, pop, and sweet)		0.1 ppm (grain). 1.0 ppm (fodder, forage). 40 day preharvest interval through 1.0 lb./A. or 1.2 oz./1,000 ft. of row for applications during cultivation. Do not place treated zones (bands or furrows) closer together than 6 inches.
Refer also to Corn (field only)		
Corn rootworms	0.5-1.0 lb./A. (with 40-inch row spacing) or 0.6-1.2 oz./ 1,000 ft. of row(with any row spacing) (EC,G)	Band application at planting. Dilute EC in water. Apply in a 4- to 6-inch band behind planter shoe and in front of press wheel.

** *O,O-diethyl O-[4-(methylsulfinyl)phenyl]phosphorothioate is also acceptable in the ingredient statement.

*Dasanit

O,O-DIETHYL O-[*p*-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Corn (field, pop, and sweet) (continued)		
Corn rootworms (continued)	0.5-1.0 lb./A. (with 4-inch row spacing) or 0.6-1.2 oz./1,000 ft. of row(with any row spacing) (EC)	Split-boot application at planting. Apply in combination with liquid fertilizer as bands two inches away from seed on both sides of the planting row. An additional emulsifier may be needed with high phosphorous fertilizers.
	0.75-1.0 lb./A. (with 40-inch row spacing) or 0.9-1.2 oz./1,000 ft. of row(with any row spacing)(EC)	Band application at cultivation. Apply evenly in water in a 4- to 6-inch band along the row around the base of the stalks. Apply directly in front of the cultivating equipment. Consult your Cooperative Agricultural Extension Service for proper timing. One application at cultivation may be made in addition to one EC application at planting, but do not apply more than twice per season by any one method or combination of methods.
Seed corn beetle Seed corn maggot	1.0 lb./A. (with 40-inch row spacing) or 1.2 oz./1,000 ft. of row(any row spacing)(G)	Use restricted to Midwestern States. Band application at planting. Apply in a 4- to 6-inch band behind planter shoe and in front of the press wheel.
Corn (field only)		0.1 ppm (grain). 1.0 ppm (fodder, forage). 40 day preharvest interval through 1.0 lb./A. or 1.2 oz./1,000 ft. of row for applications during cultivation. Do not place treated zones (bands or furrows) closer together than 6 inches.

O,O-DIETHYL O-[*p*-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Corn (field only) (continued)		
Corn rootworms	0.75-1.0 lb./A. (with 40-inch row spacing) or 0.9-1.2 oz./ 1,000 ft. of row(with any row spacing)(G)	Band application at cultivation. Apply in a 4- to 6-inch band along the row around the base of the stalks. Apply directly in front of the cultivating equipment. Consult your Cooperative Agricultural Extension Service for proper timing. One application at cultivation may be made in addition to one at planting, but do not apply more than twice per season by any one method or combinations of methods.
Onions (dry bulb only)		0.1 ppm (dry onions).
Onion maggot	1.0 lb./A.(with 18-inch row spacing) or 0.5-0.55 oz./ 1,000 ft. of row(with any row spacing) (EC,G)	Use restricted to the North Central and Northeastern States. Furrow application at planting. Distribute evenly in the seed furrow. Apply EC in 100 gallons of water per acre. Do not use on green bunching onions. Do not place treated zones (bands or furrows) closer together than 6 inches.
Peanuts		0.05 ppm (peanuts). 5.0 ppm (hulls). Do not apply more than 7.0 lb./A. per crop year. Do not feed vines or hay from treated fields to livestock. Do not place treated zones (bands or furrows) closer together than 6 inches.

O,O-DIETHYL O-[*p*-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Peanuts (continued)		
Lesser cornstalk borer	1.0 lb./A. (with 36-inch row spacing) or 1.1 oz./1,000 ft. of row(with any row spacing) (EC)	Use restricted to Oklahoma and Texas. Postplanting band application. Apply in 20-30 gallons of water per acre as a basal directed spray. Repeat as needed, but do not exceed 4 applications per crop. Do not apply within 30 days of harvest. Do not apply basal directed spray if any spray or granular application was made at planting or pegging.
Southern corn rootworm	2.0-4.0 lb./A. (with 36-inch row spacing) or 2.2-4.4 oz./ 1,000 ft. of row(with any row spacing)(G)	Band application at pegging. Apply in a 12- to 18-inch band over the row. Incorporate into the top 1-2 inches of soil on each side of row.
Thrips (early season reduction)	2.0-4.0 lb./A. (with 36-inch row spacing) or 2.2-4.4 oz./ 1,000 ft. of row(with any row spacing) (EC,G)	Use of granular formulation restricted to the Southeastern States. Preplant band application. Apply EC in water. Apply in a 12- to 18-inch band. Incorporate into top 4-6 inches of soil. Plant seed in the center of the treated band.
	3.0-6.0 lb./A. (EC,G)	Use of granular formulation restricted to the Southeastern States. Preplant broadcast application. Apply EC in water. Incorporate into the top 4-6 inches of soil.

O,O-DIETHYL O-[*p*-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Potatoes		0.1 ppm.
Southern potato wireworm Tobacco wireworm	2.0 lb./A.(G)	Preplant broadcast soil application. Incorporate into top 3-4 inches of soil.
Tuber flea beetle (larvae) Wireworms (*Ctenicera spp.*)	5.0 lb./A.(G)	Preplant broadcast soil application. Incorporate into top 3-4 inches of soil.
Sugar beets		0.05 ppm (roots and tops).
Sugarbeet root maggot	1.0-2.0 lb./A. (with 22-inch row spacing) or 0.66-1.33 oz./ 1,000 ft. of row(with any row spacing)(G)	Band application at planting. Apply in a 4- to 6-inch band in one of the following ways: (1) Apply in front of the planter, incorporate lightly into the soil soil with shallow tilling equipment, and plant seed in center of treated band, or (2) apply one inch or more above the seed behind the planter shoe and in front of the press wheel. Do not allow granules to directly contact the seed. For light, sandy soils, use only the lower dosage. Do not place treated zones (bands or furrows) closer together than 6 inches.
Sweet potatoes		0.5 ppm.
(Southern potato wireworm)	7.0 lb./A.(G)	Use restricted to Southeastern States. Claims are limited to aid in the reduction of feeding damage. Preplant broadcast application. Incorporate into top 4-6 inches of soil.

O,O-DIETHYL O-[*p*-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tobacco		NF.
Aphids Flea beetles Wireworms	4.0 lb./A.(EC)	Use restricted to Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia. Broadcast in water or liquid fertilizer spray before planting. Incorporate into the top 2-3 inches of soil. Do not make more than one field application per crop season. Formulated with O,O-diethyl S-[2-(ethylthio)ethyl] phosphoro= dithioate.
	0.6 oz./1,000 ft. of row (with 48-inch row spacing)(EC)	Use restricted to Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia. Preplant band application. Apply in a 10- to 12-inch band over the row. Incorporate into the top 2-3 inches of soil. Do not make more than one field application. Formulated with O,O-diethyl S-[2-(ethylthio)ethyl] phosphoro= dithioate.
Wireworms	2.0 lb./A.(EC,G)	Preplant broadcast application. Apply EC in sufficient water for even coverage. Incorporate into top 2-3 inches of soil.
	3.0 oz./1,000 ft. of row (with any row spacing)(EC,G)	Preplant band application. Apply in a 10- to 12-inch band. Apply EC in sufficient water for even coverage. Incorporate into top 2-3 inches of soil. Do not place treated zones (bands or furrows) closer together than 6 inches.

O,O-DIETHYL O-2-PYRAZINYL PHOSPHOROTHIOATE*

PRINCIPAL FORMATION: EC

TYPE PESTICIDE: Insecticide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Asparagus		NF. Use restricted to the western states.
Garden symphylan	6.0-10 lb./A. (EC)	Broadcast soil application. Apply prior to transplanting or after transplanting, but before first spears emerge. Incorporate thoroughly into soil immediately after application. Do not harvest crop until second year after application. Do not apply to established beds.
Beans, snap		0.1 ppm (beans, vines). Use restricted to Colorado and the Pacific Northwest.
Garden symphylan	2.0 lb./A.(EC)	Broadcast soil application at planting. Apply in at least 30 gallons of water per acre. Incorporate into soil on day of application.
	0.07 lb./1,000 ft. of row(EC)	Band application at planting. Apply in sufficient water in an 18-inch band centered over the row. Incorporate into the soil on day of application.

*Zinophos

O,O-DIETHYL O-2-PYRAZINYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Broccoli Brussels sprouts Cabbage Cauliflower		0.1 ppm. Use restricted to the Pacific Northwest.
Cabbage maggot	0.125 lb./50 gal. water(EC) (0.03% suspension)	Apply 4-6 fluid ounces per plant at time of transplanting. Higher dosages may cause plant injury.
Garden symphylan	2.0 lb./A.(EC)	Broadcast soil application at planting. Apply in at least 30 gallons of water per acre. Incorporate into the soil on day of application.
	0.07 lb./1,000 ft. of row(EC)	Band application at planting. Apply in sufficient water in an 18-inch band centered over the row. Incorporate into the soil on day of application.
Corn		0.1 ppm [forage, fodder, grain, fresh corn (kernels plus cob with husks removed)]. Use restricted to the Pacific Northwest.
Garden symphylan	2.0 lb./A.(EC)	Broadcast soil application at planting. Apply in at least 30 gallons of water per acre. Incorporate into the soil on day of application.
	0.07 lb./1,000 ft. of row(EC)	Band application at planting. Apply in sufficient water in an 18-inch band centered over the row. Incorporate into the soil on day of application.

O,O-DIETHYL O-2-PYRAZINYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Mint		0.1 ppm. Use restricted to the Pacific Northwest.
Garden symphylan	2.0-5.0 lb./A. (EC)	Spring treatment. Apply in a minimum of 30 gallons of water per acre just prior to first cultivation in early April. Cultivate on day of application and irrigate as soon as possible.
	5.0 lb./A.(EC)	Fall treatment. Apply in a minimum of 30 gallons of water per acre just prior to fall plowing. Plow down on day of application.
Strawberries		0.1 ppm. Use restricted to the Pacific Northwest.
Garden symphylan	2.0 lb./A.(EC)	Broadcast soil application at planting. Apply in at least 30 gallons of water per acre. Incorporate into the soil on day of application.
	0.07 lb./1,000 ft. of row(EC)	Band application at planting. Apply in sufficient water in an 18-inch band centered over the row. Incorporate into the soil on day of application.
	0.125 lb./100 gal. water(EC) (0.015% suspension)	Postplant drench. Apply 8 fluid ounces per plant. 90 day preharvest interval.
	1.5 lb./200-400 gal. water/A.(EC)	Postharvest application. Apply as a low pressure, drenching spray. Sprinkler irrigate with one acre inch of water immediately after treatment. Do not apply later than August 15.

O,O-DIETHYL O-2-PYRAZINYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sugar beets		0.1 ppm (roots, tops). Use restricted to Colorado and the Pacific Northwest. Do not graze or feed treated sugar beet tops to livestock.
Garden symphylan	2.0 lb./A.(EC)	Broadcast soil application at planting. Apply in at least 30 gallons of water per acre. Incorporate into soil on day of application.
	0.07 lb./1,000 ft. of row(EC)	Band application at planting. Apply in sufficient water in an 18-inch band centered over the row. Incorporate into the soil on day of application.

DIMETHOATE*

PRINCIPAL FORMULATIONS: EC, WP

TYPE PESTICIDE: Insecticide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Livestock and Poultry Tolerances

0.02 ppm in eggs and meat, fat, and meat byproducts of cattle, goats, horses, poultry, sheep and swine.

0.002 ppm in milk.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Where a dosage range is given, use the lower rate on small or young plants and against light infestations. Use the higher rate on large or more mature plants and against heavy pest infestations.		
Alfalfa (grown for hay)		2.0 ppm. 10 day preharvest or pregrazing interval through 0.5 lb./A. Foliage application. Do not apply to alfalfa during bloom period. Make only one application per season.
(Alfalfa weevil) (larvae) Aphids Grasshoppers Leafhoppers Lygus bugs	0.083-0.5/A.(EC)	Foliage application. Effective only on the cutting to which applied. Claims for alfalfa weevil control are limited to population reduction only.

*O,O-dimethyl S-[(methylcarbamoyl)methyl] phosphorodithioate; Cygon

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Alfalfa (grown for seed)		2.0 ppm. 10 day preharvest or pregrazing interval through 0.5 lb./A. Foliage application. Do not apply to alfalfa during bloom period. Do not feed livestock on threshings or stubble within 10 days of application.
(Alfalfa weevil) (larvae) Aphids Grasshoppers Leafhoppers Lygus bugs	0.25-0.5/A.(EC)	Foliage application. Claims for alfalfa weevil control are limited to population reduction only.
Apples		2.0 ppm. 28 day preharvest interval through 6.0 lb./A. Foliage application. Do not apply during bloom period.
Aphids Leafhoppers Mites (excluding rust mites)	0.25-0.5/100 gal. water (EC,WP)	Foliage application.
	1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Make a minimum of 2 applications no more than 2 weeks apart. For best aphid control, apply from green tip through early cover sprays and as needed thereafter.
Beans (dry, green, lima, snap)		2.0 ppm. No preharvest interval through 0.5 lb./A. Foliage application. Do not feed treated vines to livestock.
Aphids Leafhoppers Leafminers Lygus bugs Mites	0.25-0.5/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Broccoli		2.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application.
Aphids	0.25-0.5/A.(EC)	Foliage application.
Cabbage		2.0 ppm. 3 day preharvest interval through 0.5 lb./A. Foliage application.
Aphids	0.25-0.5/A.(EC)	Foliage application.
Cauliflower		2.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application.
Aphids	0.25-0.5/A.(EC)	Foliage application.
Citrus (nonbearing including nursery stock)		NF. Do not enter groves or nurseries within 4 days of last application.
Refer to Grapefruit, Lemons, Oranges, and Tangerines for uses on trees that will bear fruit within one year.		
Aphids Thrips	0.5/100 gal. water(EC)	Use restricted to Arizona and California. Foliage application. Repeat as needed.
	2.0/A.(EC)	Use restricted to Arizona and California. Soil drench. For use on 1 to 3 year old trees. Apply in furrow or soil ring around tree base. Apply when injury to new growth appears.
Collards		2.0 ppm. 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton		0.1 ppm (cottonseed). 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not repeat applications within 14 days. Do not feed treated forage or graze livestock on treated fields.
Aphids Fleahoppers Mites	0.11-0.22/A.(EC)	Foliage application. For early season control.
Thrips	0.11-0.22/A.(EC)	Foliage application. For early season control.
	0.25/A.(EC)	Use restricted to Arizona and California. Foliage application.
	0.5/A.(EC)	Use restricted to Arizona and California. Foliage application. Make up to 2 applications per season.
Black fleahopper complex Leafhoppers	0.25/A.(EC)	Use restricted to Arizona and California. Foliage application.
Lygus bugs	0.5/A.(EC)	Use restricted to Arizona and California. Foliage application. Make up to 2 applications per season.
Endive (escarole)		2.0 ppm. 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit		2.0 ppm (grapefruit). 5.0 ppm (dried citrus pulp for cattle feed). 15 day preharvest interval through 0.5 lb./100 gal. water. Foliage application. Ground equipment. 15 day preharvest interval through 2.0 lb./A. Aerial application. 45 day preharvest interval through 0.75 lb./100 gal. water. Foliage application. Ground equipment. Do not apply during bloom period. Do not treat seedlings. Make up to 2 applications to mature fruit. Do not enter treated groves within 4 days of application.
Aphids	0.25-0.5/100 gal. water(EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.
Mites (excluding rust mites)	0.25-0.5/100 gal. water (EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Scales (excluding black scale snow scales)	0.5-0.75/100 gal. water (EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Thrips	0.25-0.5/100 gal. water (EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water (EC)	Aerial application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit (continued)		
Whiteflies	0.25-0.5/100 gal. water (EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Grapes (including canning, raisin, table, wine)		1.0 ppm. 28 day preharvest interval through 2.0 lb./A. Foliage application.
Grape leafhopper complex Pacific spider mite	1.5-2.0/A.(WP)	Use restricted to California. Foliage application. For dilute ground equipment apply in 200 to 400 gallons and for concentrate ground equipment apply in 20 to 40 gallons of water per acre, depending upon growth density. For aerial application, apply in 15 to 30 gallons of water per acre. To avoid possible, objectionable (visible) deposits on canning or table grapes at maturity, do not apply after berries reach 1/4 inch in diameter.
Kale		2.0 ppm. 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.

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DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons		2.0 ppm (lemons). 5.0 ppm (dried citrus pulp for cattle feed). 15 day preharvest interval through 0.5 lb./100 gal. water. Foliage application. Ground equipment. 15 day preharvest interval through 2.0 lb./A. Aerial application. 45 day preharvest interval through 0.75 lb./100 gal. water. Foliage application. Ground equipment. Do not apply during bloom period. Do not treat seedlings. Make up to 2 applications to mature fruit. Do not enter treated groves within 4 days of application. When a mixture of 2 or more organophosphate insecticides is applied, the reentry interval shall be extended by adding to the longest applicable interval an additional 50% of that interval.
Aphids	0.25-0.5/100 gal. water, 1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.
Mites (excluding rust mites)	0.25-0.5/100 gal. water, 1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons (continued)		
Scales (excluding black scale, snow scales)	0.5-0.75/100 gal. water, 2-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Thrips	0.25-0.5/100 gal. water, 1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.
Whiteflies	0.5/100 gal. water, 2-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Lettuce (head, leaf)		2.0 ppm. 7 day preharvest interval through 0.25 lb./A. for head lettuce. Foliage application. 14 day preharvest interval through 0.25 lb./A. for leaf lettuce. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.
Melons (excluding watermelons)		1.0 ppm. 3 day preharvest interval through 0.5 lb./A. Foliage application.
Refer also to Watermelons.		
Aphids Leafhoppers Leafminers Thrips	0.5/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Mustard greens		2.0 ppm. 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.
Oranges		2.0 ppm (oranges). 5.0 ppm (dried citrus pulp for cattle feed). 15 day preharvest interval through 0.5 lb./100 gal. water. Foliage application. Ground equipment. 15 day preharvest interval through 2.0 lb./A. Aerial application. 45 day preharvest interval through 0.75 lb./100 gal. water. Foliage application. Ground equipment. Do not apply during bloom period. Do not treat seedlings. Make up to 2 applications to mature fruit. Do not enter treated groves within 4 days of application. When a mixture of 2 or more organophosphate insecticides is applied, the reentry interval shall be extended by adding to the longest applicable interval an additional 50% of that interval.
Aphids	0.25-0.5/100 gal. water, 1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Mites (excluding rust mites)	0.25-0.5/100 gal. water, 1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Scales (excluding black scale, snow scales)	0.5-0.75/100 gal. water, 2-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Thrips	0.25-0.5/100 gal. water, 1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.
Whiteflies	0.5/100 gal. water, 2-3 tbsp. 8%/ gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Pears		2.0 ppm. 28 day preharvest interval through 6.0 lb./A. Foliage application. Do not apply during bloom period.
Aphids Leafhoppers Mites (excluding rust mites)	0.25-0.5/100 gal. water (EC,WP)	Foliage application.
Pear psylla	1-3 tbsp. 8%/ gal. water(EC)	Foliage application. Make a minimum of 2 applications no more than 2 weeks apart. For best aphid control, apply from green tip through early cover sprays and as needed thereafter.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peas		2.0 ppm. No preharvest interval through 0.166 lb./A. Foliage application. Do not feed or graze hay within 21 days after last application when a stationary viner is used. Do not feed or graze hay when a mobile viner is used.
Aphids	0.166/A.(EC)	Foliage application.
Pecans		0.1 ppm. 21 day preharvest interval through 0.33 lb./A. Foliage application. Do not graze livestock in treated groves.
Aphids Leafhoppers Mites	0.33/A.(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Peppers		2.0 ppm. No preharvest interval through 0.33 lb./A. Foliage application.
Aphids Leafminers Pepper maggot	0.25-0.33/A.(EC)	Foliage application.
Potatoes		0.2 ppm. No preharvest interval through 0.5 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25-0.5/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Safflower		0.1 ppm (safflower seed). 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not repeat application within 14 days.
Aphids Leafhoppers Lygus bugs	0.25/A.(EC)	Use restricted to Arizona and California. Foliage application.
Thrips	0.5/A.(EC)	Use restricted to Arizona and California. Foliage application. Do not make more than 2 applications per season.
Sorghum (milo)		0.1 ppm (grain). 0.2 ppm (forage). 28 day preharvest interval through 0.5 lb./A. Foliage application. Make up to 3 applications per season.
Aphids (including greenbug)	0.11-0.22/A.(EC)	Foliage application against light infestations on sorghum prior to head formation.
	0.25-0.5/A.(EC)	Foliage application against moderate to heavy infestations.
Spinach		2.0 ppm. 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Swiss chard		2.0 ppm. 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.
Tangerines		2.0 ppm (tangerines). 5.0 ppm (dried citrus pulp for cattle feed). 15 day preharvest interval through 0.5 lb./100 gal. water. Foliage application. Ground equipment. 15 day preharvest interval through 2.0 lb./A. Aerial application. 45 day preharvest interval through 0.75 lb./100 gal. water. Foliage application. Ground equipment. Do not apply during bloom period. Do not treat seedlings. Make up to 2 applications to mature fruit. Do not enter treated groves within 4 days of application.
Aphids	0.25-0.5/100 gal. water (EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.
Mites (excluding rust mites)	0.25-0.5/100 gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangerines (continued)		
Scales (excluding black scale snow scales)	0.5-0.75/100 gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Thrips	0.25-0.5/100 gal. water(EC)	Foliage application. Apply as an outside cover spray with ground equipment.
	1.0-2.0/A. in 15-20 gal. water(EC)	Aerial application.
Whiteflies	0.25-0.5/100 gal. water(EC)	Foliage application. Apply as a thorough cover spray with ground equipment.
Tobacco		NF. 21 day preharvest interval through 0.33 lb./A. Foliage application.
Aphids	0.25-0.33/A.(EC)	Foliage application.
Tomatoes		2.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25-0.5/A.(EC)	Foliage application.
Turnips		2.0 ppm (tops, roots). 14 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25/A.(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Watermelons		1.0 ppm. 3 day preharvest interval through 0.5 lb./A. Foliage application.
Aphids Leafhoppers Leafminers	0.25-0.5 lb./A. (EC)	Foliage application.
Wheat		0.04 ppm (grain). 2.0 ppm (green fodder, straw). 14 day pregrazing interval for immature plants through 0.33 lb./A. Foliage application. 60 day preharvest interval through 0.33 lb./A. Foliage application.
Aphids (including greenbug)	0.25-0.33 lb./A. (EC)	Use restricted to Kansas, Oklahoma, South Dakota and Texas. Foliage application.
Brown wheat mite	0.11-0.22 lb./A. (EC)	Use restricted to Kansas, Oklahoma and Texas. Foliage application.

AGRICULTURAL PREMISES AND EQUIPMENT

Good sanitation is a necessary part of any house fly control program.
Treatments will control adult house flies for up to 8 weeks.
Do not contaminate feed and foodstuffs, drinking fountains, litter and feed troughs.
Do not treat freshly white-washed surfaces.
May be formulated with 2,2-dichlorovinyl dimethyl phosphate or naled.

(Dairy Barns and Milk Rooms)

Do not treat milk rooms, milk storage rooms or milk processing plants.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Dairy barns		0.002 ppm (milk).
House fly (adults)	1.0%(EC)	Residual application. Remove animals from buildings prior to treatment. Apply to ceilings, walls and stanchions to the point of runoff or at the rate of 1 gallon per 500 to 1,000 square feet. Repeat as needed.
	1.1-1.25%(EC)	Spot treatment. Apply to areas frequented by flies such as around doorways and windows.
House fly (maggots)	1.0-1.25%(EC)	Apply to breeding areas as a coarse spray or with a watering can. Repeat as needed or when fresh manure or refuse is added. Addition of a spreader-sticker will aid in spray penetration.
(Poultry Houses and Yards)		
Poultry houses		0.02 ppm (eggs, meat, fat and meat byproducts of poultry).
House fly (adults)	1.0%(EC)	Residual application. Remove poultry from buildings prior to treatment. Apply to ceilings and walls to the point of runoff or at the rate of 1 gallon per 500 to 1,000 square feet. Repeat as needed.
	1.1-1.25%(EC)	Spot treatment. Apply to areas frequented by flies such as around doorways and windows.
House fly (maggots)	1.0-1.25%(EC)	Apply to poultry droppings in caged layer houses. Repeat as needed. Addition of a spreader-sticker will aid in spray penetration. Poultry need not be removed from caged layer houses before treating droppings. Do not treat birds.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Animal Buildings Other Than Dairy and Poultry)		
Farm buildings (including calf barns livestock shelters stables swine pens)		0.02 ppm (eggs, meat, fat, and meat byproducts of cattle, goats, horses, poultry, sheep and swine).
House fly (adults)	1.0%(EC)	Residual application. Remove animals from buildings prior to treatment. Apply to ceilings and walls to the point of runoff or at the rate of 1 gallon per 500 to 1,000 square feet. Repeat as needed.
	1.1-1.25%(EC)	Spot treatment. Apply to areas frequented by flies such as around doorways and windows.
House fly (maggots)	1.0-1.25%(EC)	Apply to breeding areas as a coarse spray or with a watering can. Repeat as needed or when fresh manure or refuse is added. Addition of a spreader-sticker will aid in spray penetration.
(Feedlots and Holding Pens) (Outdoor Areas)		
Feedlots and holding pens (including corrals) Outdoor areas		0.02 ppm (meat, fat, and meat byproducts of cattle, goats, horses, sheep and swine).
House fly (adults)	1.0%(EC)	Residual application. Treat exterior walls of farm buildings and livestock shelters, fence posts and other exposed surfaces where flies congregate. Apply to the point of runoff or at the rate of 1 gallon per 500 to 1,000 square feet. Repeat as needed.
	1.1-1.25%(EC)	Spot treatment. Apply to areas frequented by flies such as around doorways and windows.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Feedlots and holding pens (including corrals) Outdoor areas (continued)		
House fly (maggots)	1.0-1.25%(EC)	Apply to breeding areas as a coarse spray or with a watering can. Repeat as needed or when fresh garbage, manure or refuse is added. Addition of a spreader-sticker will aid in spray penetration.

HUMANS, PETS AND OTHER ANIMALS

Good sanitation is a necessary part of any house fly control program.
Treatments will control adult house flies for up to 8 weeks.
Do not use in homes.
Do not contaminate feed and foodstuffs, drinking fountains, litter and feed troughs.
Do not treat freshly white-washed surfaces.
May be formulated with 2,2-dichlorovinyl dimethyl phosphate or naled.

Animal quarters (outdoors)		
House fly (adults)	1.0%(EC)	Residual application. Treat exterior walls of buildings and shelters, fence posts and other exposed surfaces where flies congregate. Apply to the point of runoff or at the rate of 1 gallon per 500 to 1,000 square feet. Repeat as needed.
	1.1-1.25%(EC)	Spot treatment. Apply to areas frequented by flies such as around doorways and windows.
House fly (maggots)	1.0-1.25%(EC)	Apply to breeding areas as a coarse spray or with a watering can. Repeat as needed or when fresh manure or refuse is added. Addition of a spreader-sticker will aid in spray penetration.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS		
Do not use on any ornamental stock plants grown as a source of propagation material, such as cuttings, layers, root stocks or scions for grafting or budding. Do not use in mixtures with oil. Do not use on plants growing in greenhouses. Do not transplant, pick or otherwise handle treated plants until they are dry.		
(Herbaceous Plants and Bulbs)		
Carnations		
Aphids Mites Thrips	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water(EC)	Soil drench. Apply 3 gallons per 500 square feet of bed or 500 gallons per 1/2 acre. Water in thoroughly after application.
Cyperus		
Aphids Mites	2 tbsp. 8%/ gal. water(EC)	Foliage application.
Bactra moths (larvae)	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water(EC)	Foliage application. Apply as a drenching spray.
Day lilies		
Aphids Thrips	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application. Do not use on Easter lilies as injury may result.
Gerberas		
Thrips	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Gladiolus		
Aphids Thrips	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application.
Iris		
Aphids Iris borer Thrips	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application. For iris borer control, apply when new leaves are 5 to 6 inches tall.
(Woody Shrubs, Trees and Vines)		
Arborvitae		
Aphids Bagworm Mites	0.5 lb./50 gal. water, 2-4 tsp. 23.4%/ gal. water(EC)	Foliage application. May be formulated with 2,2-dichlorovinyl dimethyl phosphate.
	2 tbsp. 8%/ gal. water(EC)	Foliage application.
Azaleas		
Lace bugs Leafminers Mites Tea scale Whiteflies	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water(EC)	Foliage application. May be formulated with 2,2-dichlorovinyl dimethyl phosphate.
	2 tbsp. 8%/ gal. water(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Birches		
Aphids Leafminers	0.125 lb./50 gal. water, 1 tsp. 23.4%/ gal. water(EC)	Foliage application. For leafminers, apply when leaves are expanded (about mid May) and repeat in early July. May be formulated with 2,2-dichlorovinyl dimethyl phosphate.
	2 tbsp. 8%/ gal. water(EC)	Foliage application. For leafminers, apply when leaves are expanded (about mid May) and repeat in early July.
Boxwoods		
Dipterous leafminers Mealybugs Mites	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application. For leafminers, apply in spring when adult leafminer flies first appear or in early summer for control of larvae in infested leaves.
Camellias		
Aphids Camellia scale Mites Tea scale	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application. Apply 2 treatments 6 weeks apart the the first year. Repeat annual applications soon after growth begins in the spring.
	4 tbsp. 23.4%/ gal. water or 12 tbsp. 8%/ gal. water/6 foot plant(EC)	Soil drench. Apply around base of plants in early spring. Increase rate proportionately for larger plants.
	inch plant(EC)	

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cedars		
Mites	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application.
Euonymus		
Aphids Scales	0.5 lb./50 gal. water, 4-6 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application.
Ficus nitida		
Thrips	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water(EC)	Foliage application. Do not use on potted plants.
Gardenias		
Tea scale Whiteflies	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application.
Hemlocks		
Mites Scales	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Hollies (American, English)		Do not apply to the Burford variety of Holly.
Brown soft scale Dipterous leafminers Mites	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water(EC)	Foliage application. For leafminers, apply in early spring when adult leafminer flies appear or in early summer for control of larvae in infested leaves. May be formulated with 2,2-dichlorovinyl dimethyl phosphate.
	2 tbsp. 8%/ gal. water(EC)	Foliage application. For leafminers, apply in early spring when adult leafminer flies appear or in early summer for control of larvae in infested leaves.
Junipers		
Aphids Bagworm Gall midges Mites	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application.
Oaks		
Golden oak scale	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Pines		
Aphids Bagworm European pine shoot moth Nantucket pine tip moth Zimmerman pine moth	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application.
Poinsettias		
Aphids Mealybugs Mites Whiteflies	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water or 2 tbsp. 8%/ gal. water(EC)	Foliage application.
Roses		
Aphids Leafhoppers Mites Thrips	0.25 lb./50 gal. water, 2 tsp. 23.4%/ gal. water(EC)	Foliage application. May be formulated with 2,2-dichlorovinyl dimethyl phosphate.
	2 tbsp. 8%/ gal. water(EC)	Foliage application.
Taxus (Yew)		
Fletcher scale Mealybugs Mites	0.5 lb./50 gal. water, 4 tsp. 23.4%/ gal. water, 2-4 tbsp. 8%/ gal. water(EC)	Foliage application.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
FOREST, NONAGRICULTURAL AND WASTELANDS		
Douglas-fir		
Douglas fir cone midge	2.0 lb./100 gal. water(EC)	Foliage application. Apply when cones are closed and pendant. Ground application with knapsack or hydraulic equipment.
Pines		
Loblolly pine sawfly	0.125-0.25 lb./ A. in 2 gal. water(EC)	Aerial application when air is calm and temperature is below 68°F. Apply when most larvae are in second and third instars. Do not apply to trees used for pine nut production.
Pinyon pine		
Pinyon needle scale	8.0 lb./100 gal. water(EC)	Bark application when crawlers begin to emerge. Apply to egg masses at the base of trees and to all rough bark and crotches that can be reached from the ground. Do not treat needles as phytotoxicity may occur. Do not apply to trees used for pinyon nut production.

DIMETHOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS

Do not use in homes.
Refer to uses and limitations under COMMERCIAL ESTABLISHMENTS: Outdoor areas.

URBAN AND RURAL OUTDOOR AREAS (PUBLIC HEALTH)

Refer to uses and limitations under COMMERCIAL ESTABLISHMENTS: Outdoor areas.

COMMERCIAL ESTABLISHMENTS

Do not use in edible products areas of food processing plants, restaurants or other areas where food is commercially prepared or processed.
Do not use in serving areas while food is exposed.

Outdoor areas
(including food processing plants, garbage cans, loading docks, recreation areas, refuse areas and warehouses)

Good sanitation is a necessary part of any house fly control program.
May be formulated with 2,2-dichlorovinyl dimethyl phosphate or naled.

House fly (adults)	1.0%(EC)	Residual application. Treat exterior walls of buildings and other exposed surfaces where flies congregate. Apply to point of runoff or at the rate of 1 gallon per 500 to 1,000 square feet. Repeat as needed.
House fly (maggots)	1.0-1.25%(EC)	Treat garbage dumps and refuse piles or other fly breeding areas. Apply as a coarse spray or with a watering can. Repeat as needed or when fresh garbage or refuse is added. Addition of a spreader-sticker will aid in spray penetration.

DIMETHRIN*

PRINCIPAL FORMULATIONS: L, G

TYPE OF PESTICIDE: Insecticide

General Warnings and Limitations

Do not contaminate feed or food.
Do not store near feed or food.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AQUATIC AREAS		
Do not treat water to be used by man, dairy animals, meat animals or poultry.		
Ponds (shallow) Swamps		
Do not graze dairy or meat animals in treated swamps.		
Dimethrin will kill fish. Consult your state fish and game agency before applying.		
Mosquitoes (larvae)	0.5 lb./A.(G)	Apply uniformly over the water surface. Mechanical seeders can be used for this purpose. Repeat as needed, but do not apply more frequently than at 7-day intervals. Formulated with piperonyl butoxide.

*2,4-dimethylbenzyl 2,2-dimethyl-3-(2-methylpropenyl)cyclopropane=carboxylate

DIMETHRIN

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Standing water (in containers and pools)		
Mosquitoes (larvae)	0.05 lb./12,000 gal. water or 1 tbsp./500 gal. water(G)	Apply uniformly over the water surface. Repeat as needed, but do not apply more frequently than at 7-day intervals.
	0.5 lb./12,000 gal. water or 0.0375 oz./60 gal. water(G)	Apply uniformly over the water surface. Repeat as needed, but do not apply more frequently than at 21-day intervals. Formulated with piperonyl butoxide.

DIMETHRIN

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Sewage water		
Filter flies (larvae pupae)	1 gal. 0.2% (L)/100 gal. sewage flowing over filters/ minute	Apply directly to sewage flowing to trickling filters. Formulated with 2-carbo= methoxy-1-methylvinyl dimethyl phosphate, alpha isomer; carbaryl; petroleum distillate; and 2,2-dichlorovinyl dimethyl phosphate.
	1/7 gal. 0.2% (L)/100 gal. sewage	Apply to sewage in flooded trickling filters. Close the gate from the filter to the secondary clarifier and raise the sewage level in the filter to the rock surface. Add dimethrin directly at a number of points around the side of the filter. Allow filter arms to make several revolutions for distribution of dimethrin. The contact period should be 5 hours or more depending upon the extent of infestation. Following treatment, open gate to secondary clarifier and resume normal operations. Formulated with 2-carbomethoxy-1-methylvinyl dimethyl phos= phate, alpha isomer; carbaryl; petroleum distillate; and 2,2-dichlorovinyl dimethyl phosphate.

2-(DIMETHYLAMINO)-5,6-DIMETHYL-4-PYRIMIDINYL DIMETHYLCARBAMATE

PRINCIPAL FORMULATIONS: WP

TYPE PESTICIDE: Insecticide

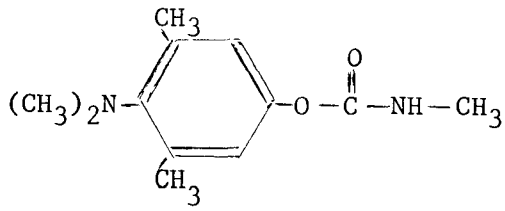
Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS		
(Greenhouse plants)		
Chrysanthemums		
Chrysanthemum aphid Green peach aphid	2-4 oz./ 100 gal. water (WP)	Foliage application. Do not make more than 4 applications per crop. The high rate may be needed against heavy infestations. Do not use in tank mixes due to the many varieties of chrysanthemums that often respond differently to chemicals used in combination.

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE
(a carbamate)

Other name: Zectran

Empirical formula: $C_{12}H_{18}N_2O_2$ *Molecular weight:* 222

Structural formula



Purity: 99+%

Color: White

Physical state: Crystalline

Odor: Nearly odorless

Density:

Specific gravity:

Vapor pressure: <0.1 mm. Hg. at 139° C.

Boiling point:

Flammability:

Melting point: 85° C.

Corrosive action:

Solubility: Solubility in water at 25° C. is 0.01%; readily soluble in acetonitrile, acetone, chloroform, ethanol, methylene, chloride, and benzene. Slightly soluble in xylene and isopropyl alcohol. Nearly insoluble in hexane.

Remarks: Decomposes in highly alkaline media.

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Representative Labeling for an Emulsifiable Concentrate Formulation

BRAND NAME

Active Ingredients:

4-(dimethylamino)-3,5-xylyl methylcarbamate 22.7%
aromatic petroleum derivative solvent.....30.7%

Inert Ingredients: 46.6%

Precautionary Labeling:

WARNING. KEEP OUT OF REACH OF CHILDREN.

May be fatal if swallowed. May be absorbed through skin. May be injurious to eyes. Avoid eye and skin contact. Avoid breathing spray mists. Avoid contamination of food, feedstuffs, and water supplies. Wash thoroughly after handling. In case of contact, immediately flush contaminated eyes with plenty of water for at least 15 minutes and get medical attention. If swallowed, call a physician immediately. Avoid contamination of lawn and garden fishpools. Keep children and pets off treated areas until spray has dried.

Disposal precautions: Bury waste in noncropland away from water supplies. Containers should be disposed of by burying with wastes.

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Wildlife Precautions: Toxic to birds and other wildlife. Keep out of lakes, streams, or ponds. Do not apply when weather conditions favor drift from areas treated.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Contents

Manufacturer's Name and Address

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Representative Labeling for a Solution Formulation

BRAND NAME

Active Ingredient:

4-(dimethylamino)-3,5-xylyl methylcarbamate 18.3%

Inert Ingredients: 81.7%

Precautionary Labeling:

WARNING: KEEP OUT OF REACH OF CHILDREN.

May be harmful or fatal if swallowed. May cause irritation. Avoid eye and skin contact. Avoid breathing spray mists.

Do not contaminate food, feedstuffs and domestic water supplies. Wash thoroughly after handling. Flush contaminated eyes with plenty of water and get medical attention. If swallowed, induce vomiting by giving an emetic such as two tablespoonfuls of salt in a glass of warm water. Call a physician.

Disposal precautions: Do not reuse container. Dispose of unused chemical by burying at least 18 inches deep in a location away from water supplies. Punch holes in container and bury with waste. Never use container in any connection with food, feed, or drinking water.

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Wildlife Precautions: Toxic to birds and other wildlife. Keep out of lakes, streams, or ponds. Do not apply when weather conditions favor drift from areas treated.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Contents

Manufacturer's Name and Address

Issued: 11-14-72

EPA Compendium of Registered Pesticides

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Representative Labeling for a Wettable Powder Formulation

BRAND NAME

Active Ingredient:

4-(dimethylamino)-3,5-xylyl methylcarbamate.....25%

Inert Ingredients: 75%

Precautionary Labeling:

WARNING! KEEP OUT OF REACH OF CHILDREN.

May be fatal if swallowed. Avoid eye and skin contact. Avoid breathing spray mists. Wash well after handling. If swallowed, call a physician immediately. Avoid contamination of feed, foodstuffs, water supplies, and lawn or garden fishpools. Keep children and pets off treated areas until spray has dried. CAUTION: Do not contamirate skin or hands with drench. Use rubber gloves or mechanical pot dipper.

Disposal precautions: Dispose of waste by burying in noncropland away from water supplies. Do not contaminate water by cleaning equipment or disposal of wastes. Containers should be disposed of by burning or by burying with waste.

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Wildlife Precautions: Toxic to birds and other wildlife. Keep out of lakes, streams, or ponds.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Weight

Manufacturer's Name and Address

Issued: 11-14-72 III-D-37.d

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Representative Labeling for a Bait Formulation

BRAND NAME

Active Ingredient:

4-(dimethylamino)-3,5-xylyl methylcarbamate..... 2%

Inert Ingredients: 98%

Precautionary Labeling:

CAUTION: KEEP OUT OF REACH OF CHILDREN.

CAUTION: May be harmful if swallowed. Wash thoroughly after handling. Avoid contamination of food, feedstuffs and domestic water supplies. If swallowed, induce vomiting by giving an emetic such as two tablespoonfuls of salt in a glass of warm water. Call a physician immediately.

Disposal precautions: Do not contaminate water by cleaning of equipment or disposal of wastes. Bury waste in noncropland away from water supplies. Dispose of empty container by burning or by burying with waste.

Wildlife Precautions: Toxic to bird and other wildlife. Keep out of lakes, streams, or ponds.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Weight

Manufacturer's Name and Address

Issued: 11-14-72

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE*

PRINCIPAL FORMULATIONS: EC, S, WP, bait

TYPE PESTICIDE: Insecticide, Molluscicide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
ORNAMENTALS		
(Lawns and Turf)		
Grass Ground cover		
Armyworm Cutworms Millipedes Slugs Snails Sod webworms (lawnmoths) Sowbugs (pillbugs)	0.75/100 gal. water(EC), 0.75/250 gal. water(WP)	Water turf thoroughly before treating. Use one gallon per 130-180 square feet to soak debris and soil. Repeat as needed.
Slugs Snails Sowbugs (pillbugs)	0.02/1,200 sq. ft.(bait)	Water infested area thoroughly before application. Apply uniformly over area, or place in piles where pests travel or congregate.

*Mexacarbate is now the acceptable common name to be used in the ingredient statement of pesticide labels. This chemical presentation will be issued in the correct alphabetical sequence at a later date.

*Zectran

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
(Herbaceous Plants and Bulbs)		
Flowers (including bedding plants)		Do not use EC on maidenhair fern, cape chestnut or geraldton wax flower. Excessive dosage may cause slight injury to new foliage growth on roses, phlox, and petunias.
Slugs Snails Sowbugs (pillbugs)	0.02/1,200 sq. ft.(bait)	Water infested are thoroughly before application. Apply uniformly over area, or place in piles where pests travel or congregate.
Millipedes Slugs Snails Sowbugs (pillbugs)	0.75/100 gal. water(EC), 0.75/250 gal. water(WP)	Spray to wet plants thoroughly Use one gallon per 130-180 square feet to soak debris and soil under infested plants. Repeat as needed.

2,2-DIMETHYL-1,3-BENZODIOXOL-4-OL METHYLCARBAMATE

PRINCIPAL FORMULATIONS: WP

TYPE PESTICIDE: Insecticide

General Warnings and Limitations:

For use only by professional applicators.

Does not damage paints, plastics, fabrics or other surfaces where water alone causes no damage.

Do not allow children or pets to contact treated surfaces until deposit has dried.

Do not apply to areas where children or pets are likely to make frequent contact with the deposit.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS		
Indoor Areas		
Ants Crickets Firebrats Silverfish	0.125%(WP)	Spot treatment. Use for follow-up applications or where infestations are low and sites are inspected and treated at monthly intervals or less.
	0.25%(WP)	Spot treatment. Apply where pests hide. For ants, apply to ant trails around doors, windows and other places where they enter premises. Control will last for up to 30 days and often for 60 days.
Centipedes Earwigs Ground beetles Millipedes Scorpions Sowbugs	0.25%(WP)	Spot treatment. Apply around doors, windows and other places where pests enter premises.
	0.50%(WP)	Spot treatment. Apply where access is difficult or deposits will not be quickly removed by cleaning.

2,2-DIMETHYL-1,3-BENZODIOXOL-4-OL METHYLCARBAMATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Indoor areas (continued)		
Cockroaches	0.125%(WP)	Use for follow-up applications or where infestations are low and sites are inspected and treated at monthly intervals or less.
	0.25%(WP)	Spot treatment. Apply where cockroaches hide. Control will last for up to 30 days and often for up to 60 days.
	0.5%(WP)	Spot treatment. Apply where access is difficult or deposits will not be quickly removed by cleaning.
Indoor Areas Outdoor Areas		
Bees Wasps	0.25%(WP)	Spot treatment. Thoroughly spray nest including the entrance plus surrounding areas where bees and wasps alight. It is generally advisable to treat nests in the evening when insects are less active and have returned to the nest. For best results check nest in one or two days to ensure complete kill. Remove and destroy nest to prevent emergence of young.

COMMERICAL ESTABLISHMENTS

(Areas other than Edible Product Areas)

Refer to sites, pests and limitations under DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Flowering plants (including bedding plants) (continued)		
Loopers Plant bugs (including lygus bugs) Thrips	0.5/100 gal. water(EC,WP)	Foliage application.
Aphids Armyworm Cutworms Mealybugs Mites Scales (crawlers) Soft scales Whiteflies	0.75/100 gal. water(EC,WP)	Foliage application.
(Woody Shrubs, Trees and Vines)		
Shrubs Trees Vines		
** Gypsy moth (larvae)	0.25/100 gal. water(EC)	Foliage application. Treat infested host plants using conventional hand or power operated ground spray equipment.
Birch leafminer complex European pine shoot moth Genista caterpillar Leafhoppers Loopers Plant bugs (including lygus bugs) Red pine sawfly Spiny elm caterpillar Tent caterpillars Thrips Yellownecked caterpillar	0.5/100 gal. water(EC,WP)	Foliage application. Do not use EC on maidenhair fern, cape chestnut, or geraldton wax flower. Excessive dosage may cause slight injury to new foliage growth on roses, phlox, and petunias.

4-(DIMETHYLAMINO)-3,5-XYLYL METHYLCARBAMATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
(Woody Shrubs, Trees and Vines) (continued)		
** Shrubs (continued) Trees Vines		
Aphids Armyworm Cutworms Mealybugs Mites Scales (crawlers) Soft scales Whiteflies	0.75/100 gal. water(EC,WP)	Foliage application. Do not use EC on maidenhair fern, cape chestnut, or geraldton wax flower. Excessive dosage may cause slight injury to new foliage growth on roses, phlox, and petunias.
(Houseplants)		
Orchids		
Snails (on roots)	1.5/100 gal. water(WP)	Immerse infested pots containing orchids so that the upper edge of the pot is slightly below the surface of the liquid. Leave until bubbling stops. Withdraw and drain before returning pot to its normal location. Repeat as needed.
FOREST, NONAGRICULTURAL AND WASTELANDS		
Forests		
Jack pine budworm Spruce budworm Western spruce budworm	0.15/A.(EC,S)	Apply using suitable aerial spray equipment as specified by qualified U.S. Forest Service personnel.

DIMETHYL 3-HYDROXYGLUTACONATE DIMETHYL PHOSPHATE*

PRINCIPAL FORMULATION: bait

TYPE PESTICIDE: Insecticide

General Warnings and Limitations

Distribute bait from container or with a can to avoid handling product.

AGRICULTURAL PREMISES AND EQUIPMENT

(Animal Buildings Other Than Dairy and Poultry)
(Feed Lots and Holding Pens)

Barns and other Buildings (including Loafing sheds Pens Pig parlors Stables)		NF. Do not contaminate feed and foodstuffs. Do not apply where animals, especially young calves, can pick it up or lick it.
Flies (including house fly)	1.0%(bait)	Scatter 4.0 oz. of bait per 1,000 sq. ft. on floor and ground areas where flies congregate, especially around doorways, feed rooms, alleyways and window sills. Place bait on clean paper if floors are freshly limed.

HUMANS, PETS AND OTHER ANIMALS

Dog Kennels
Furbearing animal units

Flies (including house fly)	1.0%(bait)	Scatter bait outside dog runways, on window sills, ledges, and other surfaces out of reach of the animals. For cage units, apply to dropping area at the rate of 4.0 oz. per 500 sq. ft.

*Bomyl

DIMETHYL 3-HYDROXYGLUTACONATE DIMETHYL PHOSPHATE

Site and Pest	Dosage	Tolerance, Use, Limitations
COMMERCIAL ESTABLISHMENTS		
(Areas Other Than Edible Products Areas)		
Food Processing Plants (including poultry and meat)		NF.
Flies (including house fly)	1.0%(bait)	Apply in inedible product areas only. Scatter 4.0 oz. of bait per 1,000 sq. ft. Product may be used outside of livestock pens and loading docks. Do not contaminate feed or foodstuffs. Do not use in edible products areas of food processing plants, restaurants or other areas where food is commercially prepared or processed. Do not use in serving areas while food is exposed.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE*

PRINCIPAL FORMULATIONS: EC, WP, D

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
** Alfalfa		1.25 ppm (fresh alfalfa). 5.0 ppm (alfalfa hay). 15 day preharvest interval through 1.0 lb./A. Foliage application. 20 day preharvest interval from above 1.0 through 1.25 lb./A. Foliage application. When applied to seed crops, treat in the early morning or late evening to avoid injury to pollinators.
Alfalfa caterpillar	0.5/A.(EC)	Foliage application.
Alfalfa seed chalcid	0.25-1.25/A.(EC)	Foliage application. For use on seed crops only.
Alfalfa weevil		
Refer also to Egyptian alfalfa weevil.		
(adults)	0.5/A.(EC)	Foliage application.
(larvae)	0.25-0.5/A. (EC), 0.5/A.(WP)	Foliage application. Apply when 75% of terminals show feeding, when buds and shoots appear ragged, or when the larval count reaches 25 per sweep.

*methyl parathion

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Alfalfa (continued)		
Aphids (including pea aphid spotted alfalfa aphid)	0.23-0.5/A. (EC), 0.25-1.0/A.(D)	Foliage application. For spotted alfalfa aphid, apply early in spring.
Armyworm	0.23-0.5/A. (EC)	Foliage application.
Armyworm, beet	0.7/A.(D)	Foliage application.
Armyworm, yellow-striped	0.7/A.(D)	Foliage application.
Clover leaf weevil	0.5/A.(EC)	Foliage application.
Cutworms, climbing	0.25-0.5/A. (EC)	Foliage application.
Egyptian alfalfa weevil	0.5-1.0/A. (EC)	Foliage application.
Flea beetles	0.23-0.5/A. (EC)	Foliage application.
Grasshoppers	0.6-0.7/A.(D)	Foliage application.
Leafhoppers	0.23-0.5/A. (EC)	Foliage application.
Lygus bugs	0.25-0.75/A. (EC), 0.6-0.7/A.(D)	Foliage application.
Mites	0.23-0.75/A. (EC), 0.6-0.7/A.(D)	Foliage application.
Stink bugs	0.25-0.75/A. (EC)	Foliage application. For use on seed crops only.
Thrips	0.6-0.7/A.(D)	Foliage application.
Webworms	0.5/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
**	Almonds		0.1 ppm (interim). Do not apply after hulls open through 3.0 lb./A. Used only in formulation with parathion.
	Apples		1.0 ppm. 14 day preharvest interval through 6.0 lb./A. Foliage application. Fruit and foliar injury may occur on McIntosh, Cortland, and related varieties. Consult your state Cooperative Agricultural Extension Service for further information.
	Aphids (including apple aphid rosy apple aphid woolly apple aphid)	0.12-0.5/100 gal. water(EC)	Foliage application.
	Codling moth	0.25-1.0/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
	Leafroller, redbanded	0.25-1.0/100 gal. water(EC)	Foliage application.
	Mite, European red	0.12-0.5/100 gal. water(EC)	Foliage application.
	Plum curculio	0.25-1.0/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
	Scales	0.25-1.0/100 gal. water(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apricots		1.0 ppm. 14 day preharvest interval through 2.5 lb./A. Foliage application.
Aphids (including green peach aphid)	0.12-0.25/ 100 gal. water(EC)	Foliage application.
Mite, European red	0.12-0.25/ 100 gal. water(EC)	Foliage application.
Artichokes		1.0 ppm. 7 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids	0.5/A.(EC,WP)	Foliage application.
Armyworm (to 3rd instar)	0.5/A.(EC,WP)	Foliage application
Artichoke plume moth	1.0/A.(EC,WP)	Foliage application. If plants are cut in April and May, begin applications after September, and repeat at 14- to 21-day intervals as needed through December; 30-day intervals through January and February; 14-day intervals from March through the end of picking season. Workers should not re-enter fields for 7 days following treatment.
Cutworms (including climbing and surface feeding species)	1.0/A.(EC)	Foliage application.
Looper, cabbage	1.0/A.(EC)	Foliage application.
Plant bugs	0.5/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Barley		1.0 ppm. No preharvest interval through 0.25 lb./A. Foliage application. 15 day preharvest interval from above 0.25 through 0.75 lb./A. Foliage application.
Aphids (including greenbug)	0.12-0.75/A. (EC), 0.25-0.7/A.(D)	Foliage application. Apply in early spring for greenbug control.
Armyworm (to 3rd instar)	0.25-0.75/A. (EC)	Foliage application.
Armyworm, beet	0.7/A.(D)	Foliage application.
Armyworm, yellow-striped	0.7/A.(D)	Foliage application.
Black grass bugs	0.12-0.75/A. (EC)	Foliage application
Chinch bug	0.75/A.(EC)	Foliage application.
Cutworms, climbing	0.38-0.5/A.(EC)	Foliage application.
False chinch bug	0.75/A.(EC)	Foliage application.
Grasshoppers	0.6-0.7/A.(D)	Foliage application.
Leafhoppers	0.25-0.5/A.(EC)	Foliage application.
Mites, spider	0.6-0.7/A.(D)	Foliage application.
Mite, brown wheat	0.12-0.5/A. (EC)	Foliage application.
Mite, winter grain	0.25-0.75/A. (EC)	Foliage application.
Stink bugs	0.23-0.75/A. (EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Barley (continued)		
Stink bug, Say	0.75/A.(EC)	Foliage application.
Thrips	0.6-0.7/A.(D)	Foliage application.
Thrips, barley	0.25-0.38/A. (EC)	Foliage application.
Beans		1.0 ppm (dry). 15 day preharvest interval through 1.5 lb./A. Foliage application. 1.0 ppm (green, lima). 15 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.5-1.5/A.(EC)	Foliage application.
Armyworm	0.5-1.5/A.(EC)	Foliage application.
Cowpea curculio	1.0-1.5/A.(EC)	Foliage application.
Cutworms (including climbing and surface feeding species)	1.0-1.5/A.(EC)	Foliage application.
Flea beetles	0.5-1.5/A.(EC)	Foliage application.
Leafhoppers	0.5-1.5/A.(EC)	Foliage application.
Looper, cabbage	1.0/A.(EC)	Foliage application.
Mites	0.5-1.5/A.(EC)	Foliage application.
Plant bugs (including Lygus bugs)	0.5-1.5/A.(EC)	Foliage application.
Stink bugs	1.0-1.5/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beets		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. (beets). Foliage application. 21 day preharvest interval through 1.0 lb./A. (if tops are to be used for food or feed). Foliage application.
Aphids	0.5-1.0/A. (EC)	Foliage application.
Armyworm	0.46-1.0/A. (EC)	Foliage application.
Flea beetles	0.5-1.0/A. (EC)	Foliage application.
Leafhoppers	0.46-1.0/A. (EC)	Foliage application.
Looper, cabbage	1.0/A. (EC)	Foliage application.
Mites	0.46-1.0/A. (EC)	Foliage application.
Plant bugs (including Lygus bugs)	1.0/A. (EC)	Foliage application.
Stink bugs	1.0/A. (EC)	Foliage application.
Black-eyed peas		1.0 ppm. 15 day preharvest interval through 0.25 lb./A. Used only in formulations with parathion.
Broccoli		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Broccoli (continued)		
Armyworm	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Flea beetles	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Imported cabbageworm	1.0-1.5/A. (EC)	Foliage application.
Leafhoppers	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Looper, cabbage	1.0-1.5/A. (EC)	Foliage application.
Mites	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Plant bugs	1.5/A. (EC)	Foliage application.
Stink bugs	1.0-1.5/A. (EC)	Foliage application.
Thrips	0.25-1.0/A. (EC)	Foliage application.
Brussels sprouts		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Brussels sprouts (continued)		
Armyworm	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Flea beetles	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Imported cabbageworm	1.0-1.5/A. (EC)	Foliage application.
Leafhoppers	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Looper, cabbage	1.0-1.5/A. (EC)	Foliage application.
Mites	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Plant bugs	1.5/A. (EC)	Foliage application.
Stink bugs	1.0-1.5/A. (EC)	Foliage application.
Thrips	0.25-1.0/A. (EC)	Foliage application.
Cabbage		1.0 ppm. 10 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cabbage (continued)		
Armyworm	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Flea beetles	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Imported cabbageworm	1.0-1.5/A. (EC)	Foliage application.
Leafhoppers	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Looper, cabbage	1.0-1.5/A. (EC)	Foliage application.
Mites	0.5-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Plant bugs	1.5/A. (EC)	Foliage application.
Stink bugs	1.0-1.5/A. (EC)	Foliage application.
Thrips	0.25-1.0/A. (EC)	Foliage application.
Carrots		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. Foliage application. Do not use treated carrot tops for food or feed.
Aphids	0.46-1.0/A. (EC)	Foliage application.
Armyworm	0.46-1.0/A. (EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Carrots (continued)		
Cutworms (including climbing and surface feeding species)	1.0/A.(EC)	Foliage application.
Flea beetles	0.46-1.0/A.(EC)	Foliage application.
Leafhoppers	0.46-1.0/A.(EC)	Foliage application.
Looper, cabbage	1.0/A.(EC)	Foliage application.
Mites	0.46-1.0/A.(EC)	Foliage application.
Plant bugs	1.0/A.(EC)	Foliage application.
Cauliflower		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Armyworm	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Flea beetles	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Imported cabbageworm	1.0-1.5/A.(EC)	Foliage application.
Leafhoppers	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cauliflower (continued)		
Looper, cabbage	1.0-1.5/A.(EC)	Foliage application.
Mites	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Plant bugs	1.5/A.(EC)	Foliage application.
Stink bugs	1.0-1.5/A.(EC)	Foliage application.
Celery		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids	0.46-1.0/A. (EC), 1.0/A.(WP)	Foliage application.
Armyworm	0.46-1.0/A. (EC), 1.0/A.(WP)	Foliage application.
Flea beetles	0.46-1.0/A.(EC)	Foliage application.
Leafhoppers	0.46-1.0/A.(EC)	Foliage application.
Looper, cabbage	1.0/A.(EC,WP)	Foliage application.
Mites	0.46-1.0/A.(EC)	Foliage application.
Plant bugs (including Lygus bugs)	1.0/A.(EC)	Foliage application.
Stink bugs	1.0/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cherries		1.0 ppm. 14 day preharvest interval through 2.5 lb./A. Foliage application.
Aphid, black cherry	0.125-0.25/ 100 gal. water(EC)	Foliage application.
Mite, European red	0.125-0.25/ 100 gal. water(EC)	Foliage appliction.
Clover		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. Foliage application. 20 day preharvest interval from above 1.0 through 1.25 lb./A. Foliage application.
Alfalfa weevil Refer also to Egyptian alfalfa weevil.		
(adults)	0.5/A.(EC)	Foliage application.
(larvae)	0.25-0.5/A.(EC)	Foliage application. Apply when 75% of terminals show feeding, when buds and shoots appear ragged, or when the larval count reaches 25 per sweep.
Aphids (including spotted alfalfa aphid)	0.25-0.5/A.(EC)	Foliage application. Apply early in the spring.
Armyworm	0.25-0.5/A.(EC)	Foliage application.
Clover leaf weevil	0.5/A.(EC)	Foliage application.
Clover seed chalcid	0.25-1.25/A. (EC)	Foliage application. For use on seed crops only.
Cutworms, climbing	0.25-1.25/A. (EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Clover (continued)		
Egyptian alfalfa weevil	0.5-1.0/A.(EC)	Foliage application.
Leafhoppers	0.25-0.5/A.(EC)	Foliage application.
Lygus bugs	0.25-0.75/A. (EC)	Foliage application.
Mites	0.25-0.75/A. (EC)	Foliage application.
Thrips	0.5-0.75/A.(EC)	Foliage application.
Webworms	0.5/A.(EC)	Foliage application.
Collards		1.0 ppm. 10 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.5-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Armyworm	0.5-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Flea beetles	0.5-1.0/A. (EC), 0.87-1.0/A.(D)	Foliage application.
Imported cabbageworm	1.0-1.5/A.(EC)	Foliage application.
Leafhoppers	0.5-1.0/A. (EC), 0.87-1.0/A.(D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Collards (continued)		
Looper, cabbage	1.0-1.5/A.(EC)	Foliage application.
Mites	0.5-1.0/A. (EC), 0.87-1.0/A.(D)	Foliage application.
Plant bugs	1.5/A.(EC)	Foliage application.
Stink bugs	1.0-1.5/A.(EC)	Foliage application.
Thrips	1.0-1.5/A.(EC)	Foliage application.
Corn		1.0 ppm. 12 day preharvest interval through 0.25 lb./A. Foliage application. Workers entering treated fields within 24 hours after application should wear protective clothing.
Aphids (including corn leaf aphid)	0.25/A.(EC)	Foliage application.
Armyworm	0.25/A.(EC)	Foliage application.
Armyworm, fall	0.25/A.(EC)	Foliage application.
Corn rootworms (including western corn rootworm) (adults)	0.25/A.(EC)	Foliage application.
Cutworms, climbing	0.25/A.(EC)	Foliage application.
Flea beetles	0.25/A.(EC)	Foliage application.
Mites	0.25/A.(EC)	Foliage application.
Stink bugs	0.25/A.(EC)	Foliage application.

O,O-DIMETHYL O-p-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton		0.75 ppm (cottonseed). 7 day preharvest interval through 3.0 lb./A. Foliage application. Do not hand pick or harvest within 7 days of application. Workers entering fields within 24 hours after application should wear protective clothing.
Aphids (including cotton aphid)	0.25-1.0/A. (EC), 0.25-0.5/A.(D)	Foliage application. Apply when aphids appear in buds and on leaves of seedlings or when honeydew appears on older plants.
Armyworm	1.0-2.0/A.(EC)	Foliage application.
Armyworm, fall (to 3rd instar)	0.25-1.0/A. (EC)	Foliage application.
Boll weevil	0.25-3.0/A. (EC), 0.25-0.5/A.(D)	For early season control of over-wintering boll weevils, apply as early as the 2- to 4-leaf stage and repeat 1-3 times at 7- to 10-day intervals. For mid-season control, apply at the start of squaring or after 10-25% of the first squares are punctured and repeat at 3- to 8-day intervals as needed or until the top bolls are full grown. Repeat at 3-day intervals during the major fruiting season, and periods of heavy weevil migration.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Boll weevil (continued)	0.56-0.75/A. (S)	Use restricted to Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas. ULV application. Begin application when injury is noted or the percentage of punctured squares reaches 5 to 10%. Apply lower rate in mid-season and higher rate in late season or when cotton becomes rank and insect infestations are severe. Aerial application. Apply at 5 feet above the crop using a 50 feet swath width. Do not apply when wind is in excess of 5 mph. Ground application. Mist blowers with a pump capable of producing up to 40 psi and blower speeds of 2,600 rpm are satisfactory. Use flat fan nozzles, 8001 to 8002, placed 30° into the air blast or rotary atomizers into the air blast that produce an efficient spray particle with a mass medium diameter of 40 to 100 microns. Swath widths should not exceed 30 feet, and applications should not be made when winds exceed 5 mph.

(continued on next page)

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Boll weevil (continued)		Boom sprayers with a filtered rotary air compressor, either PTO or gas engine driven or an air pump capable of producing at least 12 psi are satisfactory. Use air pressure on chemical tanks and an accurate metering valve to assure a calibrated flow of the pesticide. Air should be regulated with relief valve and gauge for proper air and liquid mixture. Pneumatic-type spray nozzles, as suggested by equipment manufacturer, should be used for spray particles with mass medium diameter of 30 to 100 microns. Applications should not be made when winds exceed 5 mph. Formulated with malathion.
Bollworm	1.0-3.0/A.(EC)	Foliage application.
	0.56-0.75/A. (S)	Use restricted to Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas. ULV application. Begin application when eggs are noted and 4 to 5 small caterpillars are found per 100 terminals. Apply lower rate in mid-season and higher rate in late season or when cotton becomes rank or the infestation exceeds 10%. Repeat on a 5-day schedule. Refer to directions above under boll weevil. Formulated with malathion.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Cotton leafworm	0.12-0.5/A. (EC), 0.25-0.5/A.(D)	Foliage application.
Cotton leaf-perforator	0.25-1.0/A. (EC), 0.25-0.5/A.(D)	Foliage application.
Cutworms	0.5-1.0/A.(EC)	Foliage application.
False chinch bug	0.5/A.(EC)	Foliage application.
Fleahoppers (including cotton fleahopper)	0.12-0.5/A. (EC), 0.25-0.5/A.(D)	Foliage application.
Grasshoppers	0.25/A.(EC)	Foliage application.
Leafrollers	0.6-1.0/A.(EC)	Foliage application.
Looper, cabbage	0.5-1.0/A.(EC)	Foliage application.
Lygus bugs	0.12-1.0/A. (EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Mites, spider (including desert spider mite twospotted spider mite)	0.23-1.0/A. (EC), 0.25-0.5/A. (D)	Foliage application.
Saltmarsh caterpillar	1.0/A.(EC)	Foliage application.
Stink bugs	1.0/A.(EC)	Foliage application.
Stink bug, southern green	0.5/A.(EC)	Foliage application.
Thrips	0.12-0.5/A. (EC), 0.25-0.5/A. (D)	Foliage application. Apply before or during the 4-leaf stage and repeat 1-3 times at 7- to 10-day intervals.
Webworm, garden	0.25-0.5/A.(EC)	Foliage application.
Cucumbers		1.0 ppm. 15 day preharvest interval through 0.25 lb./A. Foliage application. Do not apply before vining.
Aphids	0.25/A.(EC)	Foliage application.
Mite, twospotted spider	0.25/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Eggplant		1.0 ppm. 15 day preharvest interval through 0.25 lb./A. Used only in formulations with parathion.
Gooseberries		1.0 ppm. 15 day preharvest interval through 0.25 lb./A. Foliage application.
Aphids	0.12-0.25/A. (EC)	Foliage application.
Grapes		1.0 ppm. 14 day preharvest interval through 0.75 lb./A. Foliage application.
Aphids	0.25-1.0/100 gal. water(EC)	Foliage application.
Grape leaffolder	0.25-1.0/100 gal. water(EC)	Foliage application.
Leafhoppers, grape	0.25-1.0/100 gal. water(EC)	Foliage application.
Mites	0.75/A.(EC)	Foliage application.
Thrips	0.75/A.(EC)	Foliage application.
Grass (Hay, Pasture)		1.0 ppm (grass for forage). 15 day preharvest interval through 0.75 lb./A. Foliage application.
Armyworm (to 3rd instar)	0.75/A.(EC)	Foliage application.
Black grass bugs (including *Irbisia*)	0.75/A.(EC)	Foliage application.
False chinch bug	0.75/A.(EC)	Foliage application.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grass (Hay, Pasture) (continued)		
Grasshoppers	0.75/A. (EC)	Foliage application.
Leafhoppers	0.75/A. (EC)	Foliage application.
Hops		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids	0.5-1.0/A. (EC)	Foliage application.
Armyworm	0.5-1.0/A. (EC)	Foliage application.
Leafhoppers	0.5-1.0/A. (EC)	Foliage application.
Mites	0.5-1.0/A. (EC)	Foliage application.
Kale		1.0 ppm. 10 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Armyworm	0.25-1.0/A. (EC), 1.0/A. (WP), 0.87-1.0/A. (D)	Foliage application.
Flea beetles	0.5-1.0/A. (EC), 0.87-1.0/A. (D)	Foliage application.
Imported cabbageworm	1.0-1.5/A. (EC)	Foliage application.
Leafhoppers	0.5-1.0/A. (EC), 0.87-1.0/A. (D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Kale (continued)		
Looper, cabbage	1.0-1.5/A.(EC)	Foliage application.
Mites	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Plant bugs	1.5/A.(EC)	Foliage application.
Stink bugs	1.0-1.5/A.(EC)	Foliage application.
Kohlrabi		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Armyworm	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Flea beetles	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Imported cabbageworm	1.0-1.5/A.(EC)	Foliage application.
Leafhoppers	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Looper, cabbage	1.0-1.5/A.(EC)	Foliage application.
Mites	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Plant bugs	1.5/A.(EC)	Foliage application.
Stink bugs	1.0-1.5/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lettuce		1.0 ppm. 21 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids	0.46-1.0/A. (EC), 0.6-1.0/A.(WP), 0.6/A.(D)	Foliage application.
Armyworm	0.46-1.0/A. (EC), 0.6/A.(WP,D)	Foliage application.
Flea beetles	0.46-1.0/A. (EC), 0.6/A.(WP,D)	Foliage application.
Imported cabbageworm	0.5-1.0/A.(EC)	Foliage application.
Leafhoppers	0.46-1.0/A. (EC), 0.6/A.(WP,D)	Foliage application.
Looper, cabbage	1.0/A.(EC)	Foliage application.
Mites	0.46-1.0/A. (EC), 0.6/A.(WP,D)	Foliage application.
Plant bugs	1.0/A.(EC)	Foliage application.
Melons		1.0 ppm. 7 day preharvest interval through 0.2 lb./A. Used only in formulations with parathion.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Mustard greens		1.0 ppm. 10 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Armyworm	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Flea beetles	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Imported cabbageworm	1.0-1.5/A.(EC)	Foliage application.
Leafhoppers	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Looper, cabbage	1.0-1.5/A.(EC)	Foliage application.
Mites	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Plant bugs	1.5/A.(EC)	Foliage application.
Stink bugs	1.0-1.5/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Nectarines		1.0 ppm. Areas other than California: 14 day preharvest interval through 2.0 lb./A. Do not apply more than 5.0 lb. actual ingredient per acre per year. Used only in formulations with parathion. California: 21 day preharvest interval through 2.0 lb./A. Do not apply more than 5.0 lb. actual ingredient per acre between January 1 and harvest. Used only in formulations with parathion.
Oats		1.0 ppm. No preharvest interval through 0.25 lb./A. Foliage application. 15 day preharvest interval from above 0.25 through 0.75 lb./A. Foliage application.
Aphids (including greenbug)	0.12-0.75/A. (EC), 0.25-0.7/A. (D)	Foliage application.
Armyworm (to 3rd instar)	0.25-0.75/A. (EC)	Foliage application.
Black grass bugs (including *Irbisia*)	0.12-0.75/A. (EC)	Foliage application.
Chinch bug	0.75/A. (EC)	Foliage application.
Cutworms, climbing	0.38-0.5/A. (EC)	Foliage application.
False chinch bug	0.75/A. (EC)	Foliage application.
Leafhoppers	0.25-0.5/A. (EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oats (continued)		
Mite, brown wheat	0.12-0.5/A.(EC)	Foliage application.
Mite, winter grain	0.25-0.75/A. (EC)	Foliage application.
Stink bugs	0.23-0.75/A. (EC)	Foliage application.
Stink bug, Say	0.75/A.(EC)	Foliage application.
Thrips, barley	0.25-0.38/A. (EC)	Foliage application.
Onions		1.0 ppm. 15 day preharvest interval through 0.87 lb./A. Foliage application.
Thrips (including onion thrips)	0.25-0.87/A. (EC)	Foliage application.
Pasture (Irrigated) Refer also to Grass		1.0 ppm (grass for forage). 7 day preharvest interval through 0.1 lb./A. Broadcast application.
Mosquitoes (larvae)	0.1/A.(EC)	Broadcast application.
Peaches		1.0 ppm. 14 day preharvest interval through 4.0 lb./A. Foliage or trunk application.
Aphids (including green peach aphid mealy plum aphid)	0.12-0.5/100 gal. water(EC)	Apply in early cover treatment or apply twice with a 5-day interval as needed.
Mite, European red	0.12-0.5/100 gal. water(EC)	Apply in early cover treatment or apply twice with a 5-day interval as needed.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peaches (continued)		
Oriental fruit moth	0.25-1.0/100 gal. water (EC)	Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Peachtree borer	0.25-1.0/100 gal. water (EC)	Make applications during appearance of moths in early to late summer. Apply 2 or 3 sprays to trunk from ground to scaffold limbs timed with moth flight.
Plum curculio	0.25-1.0/100 gal. water (EC)	Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Peanuts		1.0 ppm. 15 day preharvest interval through 0.375 lb./A. Foliage application. Workers entering treated fields within 24 hours of application should wear protective clothing. Do not graze dairy animals or animals being finished for slaughter in treated fields.
Aphids Thrips Velvetbean caterpillar	0.375/A.(D)	Foliage application. Formulated with copper oxide and sulfur.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peas		1.0 ppm. 10 day preharvest interval through 0.5 lb./A. Foliage application. 15 day preharvest interval from above 0.5 through 1.0 lb./A. Foliage application.
Aphids	0.46-1.0/A. (EC), 1.0/A.(WP)	Foliage application.
Armyworm (to 3rd instar)	0.46-1.0/A. (EC), 1.0/A.(WP)	Foliage application.
Cowpea curculio	1.0/A.(EC)	Foliage application.
Cutworms (including climbing and surface feeding species)	1.0/A.(EC)	Foliage application.
Flea beetles	0.46-1.0/A.(EC)	Foliage application.
Leafhoppers	0.46-1.0/A.(EC)	Foliage application.
Looper, cabbage	1.0/A.(EC,WP)	Foliage application.
Mites	0.46-1.0/A.(EC)	Foliage application.
Plant bugs (including Lygus bugs)	0.5-1.0/A.(EC)	Foliage application.
Stink bugs	1.0/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears		1.0 ppm. 14 day preharvest interval through 3.0 lb./A. Foliage application.
Aphids	0.12-0.5/100 gal. water(EC)	Foliage application. Apply twice with a 5-day interval.
Mite, European red	0.12/100 gal. water(EC)	Foliage application. Apply twice with a 5-day interval.
Peppers		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids	0.46-1.0/A. (EC), 1.0/A.(WP), 0.62/A.(D)	Foliage application.
Armyworm	0.46-1.0/A. (EC), 1.0/A.(WP), 0.62/A.(D)	Foliage application.
Cutworms (including climbing and surface feeding species)	1.0/A.(EC)	Foliage application.
Flea beetles	0.46-1.0/A. (EC), 0.62/A.(D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peppers (continued)		
Leafhoppers	0.46-1.0/A. (EC), 0.62/A.(D)	Foliage application.
Looper, cabbage	1.0/A.(EC,WP)	Foliage application.
Mites	0.46-1.0/A. (EC), 0.62/A.(D)	Foliage application.
Plant bugs	1.0/A.(EC)	Foliage application.
Plums Prunes		1.0 ppm. 14 day preharvest interval through 4.0 lb./A. Foliage or trunk application.
Aphids (including green peach aphid mealy plum aphid)	0.12-1.0/100 gal. water(EC)	Foliage application. Apply in early cover treatments or twice with a 5-day interval.
Mite, European red	0.12-0.5/100 gal. water(EC)	Foliage application. Apply in early cover treatments or twice with a 5-day interval.
Oriental fruit moth	0.25-1.0/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Peachtree borer	0.25-1.0/100 gal. water(EC)	Make applications during appearance of the moths in early to late summer. Apply 2 or 3 sprays to trunk from ground to scaffold limbs timed with moth flight.
Plum curculio	0.25-1.0/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
**	Potatoes		0.1 ppm (interim). 5 day preharvest interval through 1.5 lb./A. Foliage application.
	Aphids	0.25-1.0/A. (EC), 0.6-1.0/A.(D)	Foliage application.
	Armyworm	0.46-1.0/A. (EC), 0.87-1.0/A.(D)	Foliage application.
	Armyworm, beet	0.7/A.(D)	Foliage application.
	Armyworm, yellow-striped	0.7/A.(D)	Foliage application.
	False chinch bug	1.5/A.(EC)	Foliage application.
	Flea beetles	0.25-1.0/A. (EC), 0.87-1.0/A.(D)	Foliage application.
	Grasshoppers	0.6-0.7/A.(D)	Foliage application.
	Leafhoppers	0.46-1.0/A. (EC), 0.87-1.0/A.(D)	Foliage application.
	Looper, cabbage	1.5/A.(EC)	Foliage application.
	Mites	0.46-1.0/A. (EC), 0.6-1.0/A.(D)	Foliage application.
	Plant bugs (including lygus bugs)	1.5/A.(EC), 0.6-0.7/A.(D)	Foliage application.
	Stink bugs	1.5/A.(EC)	Foliage application.
	Thrips	0.6-0.7/A.(D)	Foliage application.
	Prunes		
	Refer to Plums		

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pumpkins		1.0 ppm. 10 day preharvest interval through 0.25 lb./A. Used only in formulations with parathion.
Rice		1.0 ppm. 15 day preharvest interval through 0.75 lb./A. Foliage application. Crabs, crayfish, and shrimp may be killed. Do not apply where they are important resources.
Armyworm	0.5-0.75/A.(EC)	Foliage application.
Leafhoppers	0.5-0.75/A.(EC)	Foliage application.
Rice leafminer	0.75/A.(EC)	Use restricted to California. Apply at first sign of infestation after planting. Apply by air in 5-10 gallons of water. Restrict spill from rice fields for 3 days. Do not use within 14 days of application of 3',4'-dichloropropionanilide as injury may result.
Rice stink bug	0.25-0.5/A.(EC)	Foliage application.
Tadpole shrimp	0.75/A.(EC)	Use restricted to California. Apply at first sign of infestation after planting. Apply by air in 5-10 gallons of water. Restrict spill from rice fields for 3 days. Do not use within 14 days of application of 3',4'-dichloropropionanilide as injury may result.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Rutabagas		1.0 ppm. 7 day preharvest interval through 0.5 lb/A. Foliage application. 21 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Armyworm	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Flea beetles	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Imported cabbageworm	1.0-1.5/A.(EC)	Foliage application.
Leafhoppers	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Looper, cabbage	1.0-1.5/A.(EC)	Foliage application.
Mites	0.5-1.0/A.(EC), 0.87-1.0/A.(D)	Foliage application.
Plant bugs	1.5/A.(EC)	Foliage application.
** Rye		0.5 ppm (interim). No preharvest interval through 0.25 lb./A. Foliage application. 15 day preharvest interval from above 0.25 through 0.75 lb./A. Foliage application.
Aphids (including greenbug)	0.12-0.75/A.(EC), 0.25-0.7/A.(D)	Foliage application.
Armyworm (to 3rd instar)	0.25-0.75/A.(EC)	Foliage application.

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
	Rye (continued)		
	Black grass bugs (including *Irbisia*)	0.12-0.75/A.(EC)	Foliage application.
	Chinch bug	0.75/A.(EC)	Foliage application.
	Cutworms, climbing	0.38-0.5/A.(EC)	Foliage application.
	False chinch bug	0.75/A.(EC)	Foliage application.
	Leafhoppers	0.25-0.5/A.(EC)	Foliage application.
	Mite, brown wheat	0.12-0.5/A.(EC)	Foliage application.
	Mite, winter grain	0.25-0.75/A.(EC)	Foliage application.
	Stink bugs	0.23-0.75/A.(EC)	Foliage application.
	Stink bug, Say	0.75/A.(EC)	Foliage application.
	Thrips, barley	0.25-0.38/A.(EC)	Foliage application.
**	Safflower		0.1 ppm (interim)(seed). Do not apply after flowering through 0.5 lb./A. Foliage application.
	Aphids	0.5/A.(EC)	Foliage application.
	Lygus bugs	0.5/A.(EC)	Foliage application.
**	Sorghum		0.1 ppm (interim). 21 day preharvest interval through 1.0 lb./A. Foliage application. Leaf injury may occur on some hybrid varieties. Do not use wetting agents as more severe injury may occur. Spray a few rows a week or so before booting to test effects upon plants.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Sorghum (continued)		
Aphids	1.0/A.(EC)	Foliage application.
Aphid, corn leaf	0.5/A.(EC)	Foliage application.
(Aphid) greenbug	0.75/A.(EC)	Foliage application.
Mites, spider	0.5/A.(EC)	Foliage application.
Sorghum midge	0.5-1.0/A.(EC)	Apply when approximately 90% of the heads have completely emerged from the boot or not later than the start of blooming.
Soybeans		0.1 ppm (soybeans). 1.0 ppm (soybean hay). 20 day preharvest or grazing interval through 1.0 lb./A. Foliage application. Do not apply more than twice per growing season.
Aphids	0.5/A.(EC)	Foliage application.
Armyworm	1.0/A.(EC)	Foliage application.
Armyworm, fall (to 3rd instar)	1.0/A.(EC)	Foliage application.
Bean leaf beetle	1.0/A.(EC)	Foliage application.
Blister beetles	0.5/A.(EC)	Foliage application.
Corn earworm	1.0/A.(EC)	Foliage application.
Cutworms, climbing	0.25/A.(EC)	Foliage application.
Grasshoppers	1.0/A.(EC)	Foliage application.
Green cloverworm	0.5-1.0/A.(EC)	Foliage application.
Looper, cabbage	0.5-1.0/A.(EC)	Foliage application.
Mexican bean beetle	0.5/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Soybeans (continued)		
Mites, spider	0.5/A.(EC)	Foliage application.
Stink bugs	0.35-1.0/A.(EC)	Foliage application.
Threecornered alfalfa hopper	0.25-0.5/A.(EC)	Foliage application.
Thrips	0.38-0.5/A.(EC)	Foliage application.
Velvetbean caterpillar	0.38-0.5/A.(EC)	Foliage application.
Webworms (including garden webworm)	0.25-0.5/A.(EC)	Foliage application.
Spinach		1.0 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.0 lb./A. Foliage application.
Aphids	0.46-1.0/A.(EC), 0.6-1.0/A.(WP)	Foliage application.
Armyworm	0.46-1.0/A.(EC)	Foliage application.
Flea beetles	0.46-0.6/A.(WP)	Foliage application.
Leafhoppers	0.46-0.6/A.(WP)	Foliage application.
Looper, cabbage	1.0/A.(EC)	Foliage application.
Mites	0.46-1.0/A.(EC), 0.6/A.(WP)	Foliage application.
Plant bugs	1.0/A.(EC)	Foliage application.
Seedcorn maggot (in crowns)	0.5-1.0/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
	Squash		1.0 ppm. 15 day preharvest interval through 0.15 lb./A. Used only in formulations with parathion.
	Strawberries		1.0 ppm. 14 day preharvest interval through 0.75 lb./A. Foliage application.
	Aphids	0.5-0.75/A.(EC)	Foliage application.
	Mites	0.75/A.(EC)	Foliage application.
**	Sugar beets		0.1 ppm (interim). 20 day preharvest interval through 0.375 lb./A. (roots). Foliage application. 60 day preharvest interval through 0.375 lb./A. (if tops are to be fed to livestock). Foliage application.
	Aphids	0.375/A.(EC)	Foliage application.
	Armyworm	0.25-0.375/A. (EC)	Foliage application.
	Armyworm, fall	0.25-0.375/A. (EC)	Foliage application.
	Cutworms (including climbing cutworms)	0.25-0.375/A. (EC)	Foliage application.
	Flea beetles	0.25-0.375/A. (EC)	Foliage application.
	Grasshoppers	0.25-0.375/A. (EC)	Foliage application.
	Leafhoppers	0.25-0.375/A. (EC)	Foliage application.
	Lygus bugs	0.375/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Sugar beets (continued)		
Mites	0.25-0.375/A. (EC)	Foliage application.
Stink bugs	0.375/A.(EC)	Foliage application.
Webworms	0.375/A.(EC)	Foliage application.
Webworm, sugarbeet	0.25-0.375/A. (EC)	Foliage application.
Sunflowers		0.2 ppm (seed). 30 day preharvest interval through 1.0 lb./A. Foliage application. Do not apply more than 3 times at 5-day intervals per season.
Sunflower moth	1.0/A.(EC)	Foliage application. Apply at first flowering. Do not feed seeds to birds.
** Sweet potatoes		0.1 ppm (interim). 5 day preharvest interval through 0.75 lb./A. Foliage application.
Aphids	0.75/A.(EC)	Foliage application.
Armyworm (to 3rd instar)	0.75/A.(EC)	Foliage application.
Cutworms (including climbing and surface feeding species)	0.75/A.(EC)	Foliage application.
Flea beetles	0.75/A.(EC)	Foliage application.
Leafhoppers	0.75/A.(EC)	Foliage application.
Looper, cabbage	0.75/A.(EC)	Foliage application.
Mites, spider	0.75/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tobacco		NF. 15 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply within 5 days of priming. Avoid contact with plant juices when priming or cutting tobacco. When necessary to enter treated fields within 24 hours after application, protective clothing should be worn.
Aphids (including green peach aphid)	0.25-0.5/A.(EC)	Foliage application.
Cutworms (including climbing and surface feeding species)	0.25-0.5/A.(EC)	Foliage application.
Green June beetle	0.188-0.2/100 gal. water/100 sq. yd.	Apply as a drench to plant bed with a sprinkling can. Do not apply within 5 days of transplanting.
Tomatoes		1.0 ppm. 10 day preharvest interval through 0.5 lb./A. Foliage application. 15 day preharvest interval from above 0.5 through 1.5 lb./A. Foliage application.
Aphids Armyworm Flea beetles	0.25-1.0/A. (EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Leafhoppers	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tomatoes (continued)		
Looper, cabbage	1.0-1.5/A.(EC), 1.0/A.(WP)	Foliage application.
Mites	0.5-1.0/A.(EC), 1.0/A.(WP), 0.87-1.0/A.(D)	Foliage application.
Mite, tomato russet	0.12-0.5/A.(EC)	Foliage application.
Plant bugs	1.0/A.(EC)	Foliage application.
Potato psyllid	0.5-1.5/A.(EC)	Foliage application.
Turnips		1.0 ppm. 7 day preharvest interval through 0.25 lb./A.(roots). Foliage application. 15 day preharvest interval from above 0.25 through 0.8 lb./A. (roots). Foliage application. 21 day preharvest interval through 0.8 lb./A. (if tops are to be used as food or feed). Foliage application.
Aphids (including cabbage aphid)	0.25-0.8/A.(EC)	Foliage application.
Armyworm (to 3rd instar)	0.25-0.75/A.(EC)	Foliage application.
Flea beetles	0.5-0.75/A.(EC)	Foliage application.
Imported cabbageworm	0.75/A.(EC)	Foliage application.
Leafhoppers	0.5-0.75/A.(EC)	Foliage application.
Leafminers	0.5-0.75/A.(EC)	Foliage application.
Looper, cabbage	0.75/A.(EC)	Foliage application.
Mites	0.5-0.75/A.(EC)	Foliage application.
Plant bugs	0.75/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
	Vetch		1.0 ppm. 15 day preharvest interval through 1.0 lb./A. Foliage application. 20 day preharvest interval from above 1.0 through 1.25 lb./A. Foliage application.
	Aphids	0.25-0.5/A. (EC,D)	Foliage application.
	Alfalfa weevil (larvae)	0.25-0.5/A.(EC)	Foliage application. Apply when 75% of terminals show feeding, when buds and shoots appear ragged, or when the larval count reaches 25 per sweep.
	Armyworm	0.25-1.25/A.(EC)	Foliage application.
**	Cutworms, climbing	0.5/A.(EC)	Foliage application.
	Leafhoppers	0.25-0.5/A.(EC)	Foliage application.
**	Lygus bugs	0.5/A.(EC)	Foliage application.
	Mites	0.25-0.5/A.(EC)	Foliage application.
**	Vetch bruchid	0.5/A.(EC)	Foliage application.
	Wheat		1.0 ppm. No preharvest interval through 0.25 lb./A. Foliage application. 15 day preharvest interval from above 0.25 through 0.75 lb./A. Foliage application.
	Aphids (including greenbug)	0.12-0.75/A. (EC), 0.25-0.7/A.(D)	Foliage application.
	Armyworm (to 3rd instar)	0.25-0.75/A. (EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Wheat (continued)		
Armyworms (including beet armyworm yellowstriped armyworm)	0.7/A.(D)	Foliage application.
Black grass bugs (including *Irbisia*)	0.12-0.75/A.(EC)	Foliage application.
Chinch bug	0.75/A.(EC)	Foliage application.
Cutworms, climbing	0.38-0.5/A.(EC)	Foliage application.
False chinch bug	0.75/A.(EC)	Foliage application.
Grasshoppers	0.6-0.7/A.(D)	Foliage application.
Leafhoppers	0.25-0.5/A.(EC)	Foliage application.
Lygus bugs	0.6-0.7/A.(D)	Foliage application.
Mites, spider	0.6-0.7/A.(D)	Foliage application.
Mite, brown wheat	0.12-0.5/A.(EC)	Foliage application.
Mite, winter grain	0.25-0.75/A.(EC)	Foliage application.
Stink bugs	0.23-0.75/A.(EC)	Foliage application.
Stink bug, Say	0.75/A.(EC)	Foliage application.
Thrips	0.6-0.7/A.(D)	Foliage application.
Thrips, barley	0.25-0.38/A.(EC)	Foliage application.

O,O-DIMETHYL O-*p*-NITROPHENYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
ORNAMENTALS		
(Woody Shrubs, Trees and Vines)		
Christmas tree plantations (pines)		
European pine shoot moth Nantucket pine tip moth	1.0/A.(EC)	Foliage application. Apply in 5-50 gallons of water.
FOREST, NONAGRICULTURAL AND WASTELANDS		
Forest Nonagricultural land Wastelands		1.0 ppm (grass and forage). 7 day preharvest interval through 0.1 lb./A. For use by mosquito abatement districts and official government agencies only.
Mosquitoes (larvae)	0.1/A.(G)	Repeat as needed. Toxic to fish and wildlife. Do not use where shrimp and crabs are an important resource. Do not use in any estuaries, or coastal or tidal areas along the southeast, Atlantic or Gulf coasts of the United States.
Pine Forests		
European pine shoot moth Nantucket pine tip moth	1.0/A.(EC)	Foliage application. Apply in 5-50 gallons of water.

O,O-DIMETHYL O-(4-NITRO-m-TOLYL) PHOSPHOROTHIOATE

PRINCIPAL FORMULATIONS: EC

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual/A	
FOREST, CHAPARRAL, NONAGRICULTURAL AND WASTELANDS		
Fir (*Abies* spp.) Spruce		
Spruce budworm		Use restricted to the Northeastern United States. For use only by or under the supervision of State or Federal officials responsible for control programs in forested areas. Foliage application.
(3rd and 4th instar larvae)	2 oz. (EC)	Make two aerial applications. Apply in 0.15 gallon of spray.
(4th and 5th instar larvae)	2 oz. (EC)	Make two aerial applications. Apply in 0.15 gallon of spray.
		-or-
	3 oz. (EC)	Make one aerial application. Apply in 0.15 gallon of spray.

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

PRINCIPAL FORMULATIONS: EC; L; WP; D; G

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Alfalfa	2 (fresh forage) 5 (hay)	0.25	14 days. Do not apply more than 2 times between cuttings.
		0.375	14 days. Do not apply more than once between cuttings.
		0.5	16 days. Do not apply more than once between cuttings.
		0.75	21 days. Do not apply more than once between cuttings.
Almonds	0.3 (almonds) 10 (hulls)	2.5	Do not apply more than twice per season nor within 60 days of harvest. Allow 30 days between applications.
Apples	2	6.0	7 days. Do not apply more than 8 times per season.
Apricots	2	2.5	21 days.
Artichokes	2	1.5 (spray) 2.1 (dust)	30 days. Do not feed or ensile treated forage.
Barley	0.2 (grain) 2 (straw)	0.5	Do not apply more than once per season. Do not harvest for food, feed, forage, or graze within 30 days of treatment.
Beans (snap)	2	0.5 (spray) 0.6 (dust)	7 days. Do not feed or ensile treated forage.
Beans (dry)	0.3	0.5 (spray) 0.6 (dust)	30 days. Do not apply more than 4 times per season. Do not feed or ensile treated forage.
Blackberries	2	0.5 (spray) 0.9 (dust)	14 days. Foliar application.
		2.0	Apply only before fruit set or after crop is harvested. Apply to lower portion of canes and to soil beneath plants.

*Proprietary name: "Guthion"; azinphos methyl

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Blackberries (continued)	2	1.0	3 days. Apply to lower portions of canes and to soil beneath plants. Do not apply more than twice per season.
Blueberries	5	1.0	14 days.
		0.6 (dust)	Do not apply more than 5 times per season. Do not apply within 9 hours of harvest. -or- Use restricted to airplane application. Do not apply more than twice per season. Do not apply within 4 hours of harvest.
		0.75 (spray)	Eastern and North Central States only. Repeat as necessary but not more than 4 times per season nor within 3 days of harvest. If multiple late season applications of Guthion dust formulations are to be made then do not make more than two Guthion spray applications per season with the last spray no later than June 15.
Boysenberries	2	0.5 (spray) 0.9 (dust)	14 days. Foliar application.
		2.0	Apply only before fruit set or after crop is harvested. Apply to lower portion of canes and to soil beneath plants.
		1.0	3 days. Apply to lower portion of canes and to soil beneath plants. Do not apply more than twice per season.
Broccoli	2	0.75	15 days.
		0.75% (in water)	Apply as a soil drench at the rate of 1/2 pint per plant at the time of transplanting or immediately after.

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Broccoli (continued)	2	0.75 (spray)	Use restricted to California. 21 days. Transplant fields. As a soil drench in 300 to 400 gallons of water per acre in the rows.
		0.75 (spray)	Use restricted to California. 21 days. Direct seeded fields. Mix in upper 2 inches of soil prior to seeding or spray in seed row at planting. 2 to 3 additional sprays usually necessary.
Brussels sprouts	2	0.75	7 days.
		0.75% (in water)	Apply as a soil drench at the rate of 1/2 pint per plant at the time of transplanting or immediately after.
Cabbage	2	0.75	21 days.
		0.75% (in water)	Apply as a soil drench at the rate of 1/2 pint per plant at the time of transplanting or immediately after.
		0.75 (spray)	Use restricted to California. 21 days. Transplant fields. As a soil drench in 300 to 400 gallons of water per acre in the rows.
		0.75 (spray)	Use restricted to California. 21 days. Direct seeded fields. Mix in upper 2 inches of soil prior to seeding or spray in seed row at planting. 2 to 3 additional sprays usually necessary.
Cauliflower	2	0.75	15 days.
		0.75% (in water)	Apply as a soil drench at the rate of 1/2 pint per plant at the time of transplanting or immediately after.
		0.75 (spray)	Use restricted to California. 21 days. Transplant fields. As a soil drench in 300 to 400 gallons of water per acre in the rows.

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-XY)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Cauliflower (continued)	2	0.75 (spray)	Use restricted to California. 21 days. Direct seeded fields. Mix in upper 2 inches of soil prior to seeding or spray in seed row at planting. 2 to 3 additional sprays usually necessary.
Celery	2	1.0	14 days.
Cherries	2	4.0	15 days. Full coverage spray. Do not apply more than 8 times per season.
Citrus	2 (fruit) 5 (dried pulp)	7.5	A single application per year may be applied up to within 7 days of picking. Where 2 applications are required, the second spray should not be applied within 28 days of harvest. Do not apply more than twice per fruit year. Do not do other work involving contact with the tree, such as pruning, within 7 days of application.
Clover	2 (fresh forage)	0.75	Do not apply more than once between cuttings. Do not apply within 21 days of harvest.
	5 (hay)	0.375	14 days. Do not apply more than once between cuttings.
		0.5	16 days. Do not apply more than once between cuttings.

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Black-eyed peas	0.3	1.0	7 days. Do not apply more than 4 times per season. Do not graze or feed treated forage to livestock.
Cotton	0.5 (cotton-seed)	1.0	Do not apply within 1 day of picking. If late season applications are made, do not graze livestock on treated areas or feed gin waste.
		0.25	Ultra low volume aerial application. Do not graze livestock in treated areas. Do not feed gin trash to livestock. Do not apply within 2 days of handpicking. Cotton may be machine harvested anytime after application.
Crabapples	2	3.75	7 days. Do not apply more than 8 times per season.
Cranberries	2	1.0	21 days.
Cucumbers	2	0.5	1 day. Do not apply more than 3 times per season.
Eggplants	0.3	0.5	Do not apply after fruit set.
Filberts	0.3	7.5	7 days. Do not graze livestock in treated groves within 21 days after application.
Grapes	5	0.75	No time limitations. Do not apply more than 3 times per season.
		1.5	28 days. Do not apply more than 3 times per season.
		1.125	10 days. Do not apply more than 3 times per season.
Loganberries	2	0.5 (spray)	14 days. Foliar application.
		0.9 (dust)	

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Loganberries (continued)	2	2.0	Apply only before fruit set or after crop is harvested. Apply to lower portion of canes and to soil beneath plants.
		1.0	3 days. Apply to lower portion of canes and to soil beneath plants. Do not apply more than twice per season.
Melons	2	0.5	Apply up to the day of harvest but not more than 4 times per season.
Nectarines	2	2.5	21 days.
		3.0	Do not apply after mid-season.
Oats	0.2 (grain) 2 (straw)	0.5	Do not apply more than once per season. Do not harvest for food, feed, forage, or graze within 30 days of treatment.
Onions	2	1.5	Apply to furrow at planting time.
Onions (dry)	2	0.75	28 days. Do not apply more than 3 times per season.
Onions (green)	2	0.75	7 days. Do not apply more than 3 times per season.
Peaches	2	2.5	21 days.
		3.0	Do not apply after mid-season.
Pears	2	6.0	7 days. Do not apply more than 8 times per season.
Pecans	0.3	10.0	Do not apply after husks split. Do not graze livestock in treated groves.
		5.6	Do not apply after husks split. Do not graze livestock in treated groves within 21 days after treatment.
Peppers	0.3	0.5	Do not apply within 3 days of harvest if not more than 4 applications are made. Do not apply within 14 days of harvest if more than 4 applications are made.

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZIN-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Plums	2	4.0	15 days. Do not apply more than 8 times per season.
Potatoes	0.3	0.75	7 days.
Prunes	2	4.0	15 days. Do not apply more than 8 times per season.
Quinces	2	6.0	7 days. Do not apply more than 8 times per season.
Raspberries	2	0.5 (spray) 0.9 (dust)	14 days. Foliar application.
		2.0	Apply only before fruit set or after crop is harvested. Apply to lower portion of canes and to soil beneath plants.
		1.0	3 days. Apply to lower portion of canes and to soil beneath plants. Do not apply more than twice per season.
Rye	0.2 (grain) 2 (straw)	0.5	Do not apply more than once per season. Do not harvest for food, feed, forage, or graze within 30 days of treatment.
Soybeans	0.2	0.75	Do not apply within 45 days of harvest. Do not graze or feed treated plants to livestock.
Spinach	2	0.5 (spray) 0.75 (dust)	14 days.
Strawberries	2	0.5	5 days.
Sugarcane	0.3	1.0 (granular)	30 days. Do not apply more than 5 times per season. Do not feed treated forage or harvest trash to livestock. Bagasse may be used as feed for cattle, sheep and goats.

O,O-DIMETHYL S-[(4-OXO-1,2,3-BENZOTRIAZINE-3 (4H)-YL)METHYL] PHOSPHORODITHIOATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
* Sugarcane (continued)	0.3	0.75 (spray)	Use restricted to Florida, Louisiana and Texas. Apply by aircraft using a minimum of 2 gallons of water per acre. Do not apply within 30 days of harvest nor more than 5 times per season. Do not feed treated forage or harvest trash to livestock. Bagasse may be used as feed for cattle, sheep and goats.
		0.75 (spray)	Use restricted to Florida, Louisiana and Texas. Apply undiluted (ULV) by aircraft. Do not apply within 30 days of harvest nor more than 5 times per season. Do not feed treated forage or harvest trash to livestock. Bagasse may be used as feed for cattle, sheep and goats.
Tobacco	NF	0.75	6 days. Foliage treatment.
Tomatoes	2.0 (from pre- and post-harvest application)	0.75	No time limitations.
		1.5	14 days.
		0.02 lb. actual per ton	Postharvest use on processing tomatoes. Tomatoes must be washed prior to processing.
Walnuts	0.3	10.0	Do not apply after husks split. Do not graze livestock in treated groves within 21 days after treatment.
Wheat	0.2 (grain) 2.0 (straw)	0.5	Do not apply more than once per season. Do not harvest for food, feed, forage, or graze within 30 days of treatment.

EPA Compendium of Registered Pesticides

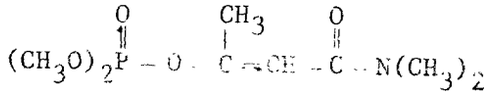
DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-cis-CROTONAMIDE

(an organophosphate)

Other names: Bidrin, dicrotophos

Empirical formula: $C_8H_{16}NO_5P$ *Molecular weight*

Structural formula



Purity: 85% (technical) *Color:* **Yellow to brown**

Physical state: Liquid *Odor:* Mild ester

Density: 10.1 lb./gal. at 68° F. *Specific gravity:* 1.22 60/60 F.

Vapor pressure: 1×10^{-4} mm. Hg at 20° C. *Boiling point:* 400° C.

Flammability: *Melting point:*

Corrosive action: May be corrosive to black iron, drum steel, stainless steel type 304 , and brass. Relatively noncorrosive to Monel, copper, nickel, and aluminum. Will not attack glass and certain plastics including polyethylene, Teflon, Saran, Bakelite, nonplasticized polyvinyl alcohol, and stainless steel 316. Permeable through 1 gal.-gauge polyethylene.

Solubility: Miscible in water, acetone, alcohol, and xylene. Very slightly soluble in kerosene and diesel fuel.

Remarks: Half-life in buffered water solution 2 ppm. stored at 38° C.; pH 1.1, 96 days; pH 9.1, 50 days. Stable when stored in glass or polyethylene up to 40° C.; unstable on most solid carriers; acidic solutions more stable than basic solutions.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Representative Labeling for an Emulsifiable Concentrate Formulation

BRAND NAME

Active Ingredients:

Dimethyl phosphate ester with 3-hydroxy-N,N-dimethyl-*cis*-crotonamide.....25.05%

Xylene.....64.45%

Other Ingredients.....10.50%

Precautionary Labeling:

WARNING! KEEP OUT OF REACH OF CHILDREN.
Poisonous if swallowed, inhaled, or absorbed through skin. Rapidly absorbed through skin. Repeated inhalation or skin contact may, without symptoms, progressively increase susceptibility to this product's poisoning.

Do not swallow or get in eyes, on skin, or on clothing. Do not breathe vapors.

Keep out of the reach of children and domestic animals. Do not contaminate food or feed products. Keep away from heat and open flame.

Wear clean, natural rubber gloves, clean protective clothing, and goggles. Replace gloves frequently and destroy used gloves. During commercial or prolonged exposure in spray-mixing and loading operations, wear a mask or respirator of a type adequate against this product's vapors and gases. Wash thoroughly with soap and water after handling and before eating or smoking. If the material gets into the eyes, immediately flush with water for at least ten minutes and get medical attention. In case of contact, remove all contaminated clothing and wash skin with soap and water; wash clothing before reuse. In case of spillage, wash down with large amounts of water.

Decontaminate areas and equipment by washing with concentrated solution of alkali and detergent and rinse with water.
Note: Caution. Avoid skin and eye contamination when handling strong caustic solution.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Antidote and First Aid Treatment: Atropine is the emergency antidote for this product's poisoning. Consult your physician about obtaining an adequate supply of 1/100-grain atropine tablets for emergency use. Call a physician in all cases of suspected poisoning.

Internal: If the material has been swallowed, induce vomiting immediately. This may be done by introducing a finger into the throat or by giving warm salt water (1 tablespoon of salt to a glass of water). Never give anything by mouth to an unconscious person.

External: If the material has been spilled on the skin, immediately remove patient from the vicinity of this product, remove all contaminated clothing, and wash skin with soap and running water. If the material gets into the eyes, wash immediately with running water for at least ten minutes. If warning symptoms appear: administer two 1/100-grain atropine tablets immediately; never administer atropine unless warning symptoms appear (see warning symptoms below), and keep patient prone and quiet. Start artificial respiration immediately if patient is not breathing. Transport the patient immediately to the nearest physician.

Note to Physician: WARNING SYMPTOMS: Symptoms include weakness, headache, tightness in chest, blurred vision, nonreactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps.

TREATMENT: Atropine is the specific therapeutic antagonist of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, atropine sulfate should be injected at 10-minute intervals, in doses of 1 to 2 milligrams, until complete atropinization has occurred. Morphine is contraindicated. Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may, without warning, cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been allowed as determined by blood test.

Disposal precautions: Decontaminate and destroy used containers. Do not reuse for any purpose. Decontaminate containers by rinsing thoroughly with water and alkaline detergent. Destroy containers by breaking and burying fragments in isolated area. Dispose of rinsings in a way as not to constitute a hazard, or contaminate water supplies.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Wildlife Precautions: This product is toxic to wildlife. Keep out of lakes, ponds, and streams. Birds and other wildlife in treated areas may be killed.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Contents

Manufacturer's Name and Address

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Representative Labeling for a Solution Formulation

BRAND NAME

Active Ingredient:

dimethyl phosphate ester with 3-hydroxy-N,N-dimethyl-*cis*-crotonamide.....86%

Inert Ingredients: 14%

Precautionary Labeling:

DANGER! POISON. KEEP OUT OF REACH OF CHILDREN.
(skull and crossbones)

Poisonous if swallowed, inhaled, or absorbed through skin. Rapidly absorbed through skin. Wear a mask or respirator of a type adequate against this product's vapors and gases. Repeated inhalation or skin contact may, without symptoms, progressively increase susceptibility to this product's poisoning. Do not swallow or get in eyes, on skin, or on clothing. Do not breathe vapors.

Keep out of reach of children and domestic animals. Keep children away from working areas.

WARNING! Keep away from feed or food products.

Wear clean, natural rubber gloves, clean protective clothing, and safety face shield. Replace gloves frequently and destroy used gloves. Wash thoroughly with soap and water after handling and before eating or smoking. If the material gets into the eyes, immediately flush with water for at least ten minutes and get medical attention. In case of contact, remove all contaminated clothing and wash skin with soap and water; wash clothing before reuse. In case of spillage, wash down with large amounts of water. Decontaminate areas and equipment by washing with concentrated solution of alkali and detergent and rinse with water.
Note: Caution! Avoid skin and eye contamination when handling strong caustic solutions.

Disposal precautions: Do not allow untrained personnel to handle containers before or after use. Collect empty containers immediately following injection of this product into the tree. Do not contaminate food or feed products. Destroy empty containers by incineration or burying on the day of use.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Antidote and First Aid Treatment: Atropine is the emergency antidote for this product's poisoning. Consult your physician about obtaining an adequate supply of 1/100-grain atropine tablets for emergency use. Call a physician in all cases of suspected poisoning.

Internal: If the material has been swallowed, induce vomiting immediately. This may be done by introducing a finger into the throat or by giving warm salt water (1 tablespoon of salt to a glass of water). Never give anything by mouth to an unconscious person.

External: If the material has been spilled on the skin, immediately remove patient from the vicinity of this product, remove all contaminated clothing, and wash skin with soap and running water. If the material gets into the eyes, wash immediately with running water for at least ten minutes. If warning symptoms appear: administer two 1/100-grain atropine tablets immediately, never administer atropine unless warning symptoms appear (see warning symptoms below), and keep patient prone and quiet. Start artificial respiration immediately if patient is not breathing. Transport the patient immediately to the nearest physician.

Note to Physician: WARNING SYMPTOMS: Symptoms include weakness, headache, tightness in chest, blurred vision, nonreactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps.

TREATMENT: Atropine is the specific therapeutic antagonist of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, atropine sulfate should be injected at 10-minute intervals, in doses of 1 to 2 milligrams, until complete atropinization has occurred. Morphine is contraindicated. Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may, without warning, cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been allowed as determined by blood test.

Wildlife Precautions: This product is toxic to wildlife. Keep out of lakes, ponds and streams. Do not apply in any manner not specified on the label. Birds and other wildlife in treated areas may be killed.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No.

Net Weight

Manufacturer's Name and Address

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE*

PRINCIPAL FORMULATIONS: EC, S

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations.

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual/A.	
AGRICULTURAL CROPS		
Cotton		*0.05 ppm (cottonseed).* 30 day preharvest interval through 0.5 lb./A. Foliage application. Workers entering fields within 16 hours after treatment should be protected. For aerial application, use a minimum of 3 to 10 gallons of water per acre. For ground application, use a minimum of 3 to 20 gallons of water per acre.
Aphids Cotton fleahopper Spider mites Thrips	0.1-0.2 lb. (EC)	Foliage application. For early season control. Do not graze livestock on treated fields or treated gin trash. Do not apply or allow to drift where dairy animals or animals being finished for slaughter may be grazing.
Aphids Black fleahopper Boll weevil Cotton fleahopper Grasshoppers Lygus bugs Spider mites	0.25-0.5 lb. (EC)	Foliage application. For mid or late season control. Refer to grazing and drift limitations above. Some spray mixtures are not to be applied after bolls open.

*dicrotophos; Bidrin

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual/A.	
Cotton (continued)		
Leaf perforators Salt-marsh caterpillar Stink bugs	0.25-0.5/lb. (EC)	Foliage application. Refer to grazing and drift limitations above. Some spray mixtures are not to be applied after bolls open.
Soybeans (seed crop only)		*NF*. 30 day preharvest interval through 1.0 lb./A. Foliage application. Do not graze livestock on treated fields or feed treated trash or seed.
Colorado potato beetle Grasshoppers Leafhoppers Mexican bean beetle Potato flea beetle Stink bugs Treehoppers	0.25 lb. (EC)	Foliage application.
Aphids	0.5 lb. (EC)	Foliage application.
Lygus bugs	0.5-1.0 lb. (EC)	Foliage application.

ORNAMENTALS

To be applied by trained applicators only (professional arborists and nurserymen).

(Herbaceous Plants and Bulbs)

Chrysanthemums

Aphids Mites Thrips	1.0 lb. actual/100 gal. water(EC)	Foliage application. Apply to the point of runoff.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
(Woody Shrubs, Trees, and Vines)		
For injection treatments:		
If trees have been topped or heavily pruned, reduce dosage one ml. per injection site.		
If more than 50% of root system is obstructed or damaged, reduce dosage one ml. per injection site.		
After correction for topping, pruning, and physical root obstructions, trees with determinations of less than one ml. per injection site are not to be treated.		
Space injections 5 to 6 inches apart around bole of tree.		
Arborvitae		
Bagworm Leafminers Mites	1.0 lb. actual/100 gal. water (EC)	Foliage application.
Ash		
Aphids		Injection.
Trees under 20 ft. tall	1.0 ml./ injection site	
Trees 20-40 ft. tall	2.0 ml./ injection site	
Trees over 40 ft. tall	3.0 ml./ injection site (S)	
Azalea		
Azalea leafminer Mites	1.0 lb. actual/100 gal. water (EC)	Foliage application.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
Candlesticks		
Aphids	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Camellia		
Camellia scale Mites Tea scale	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Crape myrtle		
Aphids	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Elm		
Aphids Elm leaf beetle		Inject when aphids or first generation beetle larvae begin leaf feeding.
Trees under 20 ft. tall	1.0 ml./ injection site	
Trees 20-40 ft. tall	2.0 ml./ injection site	
Trees over 40 ft. tall	3.0 ml./ injection site (S)	
European elm scale		Inject while crawlers are present.
Trees under 40 ft.tall	2.0 ml./ injection site	
Trees 40-50 ft. tall	3.0 ml./ injection site(S)	
Smaller European elm bark beetle	See instruction manual (S)	Injection. For use by or under supervision of personnel specifically trained in the use of dicrotophos as an injection (implant) in elm trees as specified in the basic producer's instruction manual.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
Euonymus		
Euonymus scale	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Gardenia		
Whiteflies	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Hackberry		
Hackberry-nipple-gall psyllid		Inject when psyllid eggs have hatched and leaves have expanded.
Trees under 40 ft. tall	1.0 ml./ injection site	
Trees 40-60 ft. tall	2.0 ml./ injection site	
Trees over 60 ft. tall	3.0 ml./ injection site(S)	
Hibiscus		
Cirococcus scale	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Holly (Ilex)		
Camellia scale Leafminers Mites Tea scale	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Ixora		
Scales	1.0 lb. actual/100 gal. water(EC)	Foliage application.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N.N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
Juniper		
Bagworm	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Linden Maple		
Aphids		Injection.
Trees under 20 ft. tall	1.0 ml./ injection site	
Trees 20-40 ft. tall	2.0 ml./ injection site	
Trees over 40 ft. tall	3.0 ml./ injection site (S)	
Oak		
Myzocallis aphid Obscure scale Pit-making scales		Injection. For scales, inject while crawlers are present.
Trees under 20 ft. tall	1.0 ml./ injection site	
Trees 20-40 ft. tall	2.0 ml./ injections site	
Trees over 40 ft. tall	3.0 ml./ injection site (S)	
Pine		
Pine sawfly Pine tip moths	1.0 lb. actual/100 gal. water(EC)	Foliage application.

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
Pine (continued)		
European pine sawfly Pine spittlebug Spider mites Southern pine beetle species		Injection.
Trees under 20 ft. tall	1.0 ml./ injection site	
Trees 20-40 ft. tall	2.0 ml./ injection site	
Trees over 40 ft. tall	3.0 ml./ injection site(S)	
Privet		
Cottony scales Oystershell scale	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Roses		
Aphids Leafhoppers Mites Thrips	0.5 lb. actual/100 gal. water(EC)	Foliage application.
Sasanqua		
Tea scale	1.0 lb. actual/100 gal. water(EC)	Foliage application.
Sycamore (Plane tree)		
Sycamore scale		Inject when crawlers appear.
Trees under 20 ft. tall.	1.0 ml./ injection site	
Trees 20-40 ft. tall	2.0 ml./ injection site	
Trees over 40 ft. tall	3.0 ml./ injection site(S)	

DIMETHYL PHOSPHATE ESTER WITH 3-HYDROXY-N,N-DIMETHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
Taxus		
Taxus mealybug	1.0 lb. actual/100 gal. water(EC)	Foliage application.

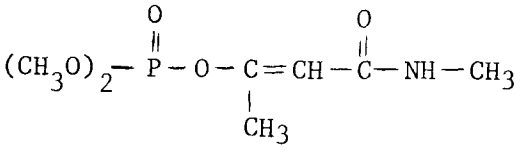
DIMETHYL PHOSPHATE of 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

(an organophosphate)

Other names: Azodrin, monocrotophos

Empirical formula: $C_7H_{14}NO_5P$ *Molecular weight:* 223.2

Structural formula



Purity:

Color: Reddish brown

Physical state: Solid at 72° F.

Odor: Mild ester

Density:

Specific gravity:

Vapor pressure: 7×10^{-5} mm. at 20° C.

Boiling point: 125° C. at 760 mm. Hg

Flammability: Flash point: Tag. open cup >175° F.

Melting point: 25-30° C.

Corrosive action: May be corrosive to black iron, drum steel, stainless steel 304, and brass. Will not attack glass, aluminum, stainless steel 316, and steel pails lined with Unicrom B-124-1.

Solubility: Soluble in water, acetone, and alcohol. Very slightly soluble in kerosene and diesel fuel.

Remarks: Relatively sunlight stable and nonvolatile at 100° F. Stable when stored in glass and polyethylene containers. Stable in simple alcohols and glycols at room temperatures. Thermal stability: Decomposes at 310-320° F. (DTA). Hydrolysis rate at 20° C. is quite slow. Its half-life in solution (2 ppm) at pH 7.0 and 38° C. is 23 days; at pH 4.6 and 100° C. is 80 minutes.

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

Representative Labeling For An Emulsifiable Concentrate Formulation

BRAND NAME

Active Ingredient:

dimethyl phosphate of 3-hydroxy-N-methyl-*cis*-crotonamide 39.1%

Inert Ingredients: 60.9%

Precautionary Labeling:

DANGER! POISON. KEEP OUT OF REACH OF CHILDREN.
(skull and crossbones)

Poisonous if swallowed, inhaled or absorbed through skin. Rapidly absorbed through skin. Repeated inhalation or skin contact may, without symptoms, progressively increase susceptibility to monocrotophos insecticide poisoning. Do not swallow or get in eyes, on skin, or on clothing. Do not breathe vapors. Do not contaminate food or feed products. Not for use or storage in or around the home.

DANGER. Extremely flammable. Keep away from fire, sparks, and heated surfaces.

Wear clean rubber gloves, clean protective clothing, and goggles or face shield. Replace gloves frequently and destroy used gloves. During commercial or prolonged exposure in spray-mixing and loading operations, wear a mask or respirator of a type passed by the U. S. Bureau of Mines for monocrotophos insecticide protection. Wash thoroughly with soap and water after handling and before eating or smoking. If the material gets into the eyes immediately flush with water for at least ten minutes and get medical attention. In case of contact, remove clothing and wash skin with soap and water; wash clothing before reuse. In case of spillage, wash down with large amounts of water. Decontaminate areas and equipment by washing with a concentrated solution of alkali and detergent and rinse with water. Note: DANGER! Avoid skin and eye contamination when handling strong caustic solutions.

Disposal precautions: DECONTAMINATE AND DESTROY USED CONTAINERS. Do not reuse for any purpose. Decontaminate containers by washing thoroughly with a strong solution of alkali and detergent and rinsing with water. Destroy containers by crushing and burying fragments in an isolated area. Dispose of rinsings in a way as not to constitute a hazard or contaminate water supplies.

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

Antidote and First Aid Treatment: Atropine is the emergency antidote for monocrotophos insecticide poisoning. 2-PAM is also antidotal and may be used in conjunction with atropine. Call a physician in all cases of suspected poisoning.

INTERNAL: If the material has been swallowed, induce vomiting immediately. This may be done by introducing a finger into the throat or by giving warm salt water (1 tablespoon of salt to a glass of water). Never give anything by mouth to an unconscious person.

EXTERNAL: If the material has been spilled on the skin, immediately remove patient from the vicinity of the insecticide, remove all contaminated clothing, and wash skin with soap and running water. If the material gets into the eyes, wash immediately with running water for at least 10 minutes. If warning symptoms appear (see warning symptoms below), keep patient prone and quiet. Start artifical respiration immediately if patient is not breathing. Transport the patient immediately to the nearest hospital.

Note to Physician: Warning symptoms: Symptoms include weakness, headache, tightness in chest, blurred vision, nonreactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps.

TREATMENT: Atropine is the specific therapeutic antagonist of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic nervous stimulation, atropine sulfate should be injected at 10-minute intervals, in doses of 1 to 2 milligrams, until complete atropinization has occurred.

Pralidoxime chloride (2-PAM chloride) may also be used as an effective antidote in addition to and while maintaining full atropinization. In adults, an initial dose of 1 gram of 2-PAM should be injected, preferably as an infusion in 250 cc. of saline over a 15- to 30-minute period. If this is not practical, 2-PAM may be administered slowly by intravenous injection as a 5 percent solution in water over a period of not less than 2 minutes. After about an hour, a second dose of 1 gram of 2-PAM will be indicated if muscle weakness has not been relieved. For infants and children the dose of 2-PAM is 0.25 grams. Do not use morphine.

Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may, without warning, cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until cholinesterase regeneration has been attained as determined by blood test.

Wildlife Precautions: This product will kill birds and other wildlife. Keep out of any body of water. Do not apply when weather conditions favor drift from areas treated.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Contents

Manufacturer's Name and Address

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE*

PRINCIPAL FORMULATION: EC

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
	AGRICULTURAL CROPS		
	Cotton		0.1 ppm (cottonseed). 21 day preharvest interval through 1.0 lb./A. Foliage application. For foliage applications in the San Juaquin Valley, California, do not apply later than 2 weeks after initiation of bloom and definitely not after July 15 in order to avoid injury to wildlife.
**	Beet armyworm	0.4-0.75/A.(EC)	Foliage application.
	Bollworm Boll weevil Loopers Lygus bugs Mites Pink bollworm	0.5-1.0/A.(EC)	Foliage application. For early season control of lygus bugs, and to control light infestations of bollworms, loopers and mites, use 0.5 lb./A. For control of high populations of bollworms and loopers, and for control of boll weevils, pink bollworms, lygus bugs and mites, use 0.6 to 1.0 lb./A. Do not apply more frequently than every 5 to 7 days. Do not graze livestock on treated fields or use treated trash for feed.

*monocrotophos; Azodrin

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Thrips	0.12-0.2/A.(EC)	Foliage application.
Thrips (on seedling cotton)	5.0-25/ton of cottonseed(EC)	Seed treatment. Apply to give uniform coverage of acid, flame or mechanically delinted cottonseed. Avoid planting treated seed when soil temperature is below 65°F. or when early season growing conditions are expected to be adverse. Plant treated seed at same rate as untreated seed. Do not store treated seed in proximity of feed or food in order to prevent contamination.
Whiteflies	0.25-1.0/A.(EC)	Foliage application.
Peanuts		0.05 ppm (peanuts). 0.5 ppm (peanut hulls). 15 day preharvest interval through 1.0 lb./A. Band application. Do not make more than 2 applications per season. Do not feed treated vines or hay to livestock. Do not graze livestock on treated fields.
Granulated cutworm	1.0/A.(EC)	Foliage application.
Lesser cornstalk borer	1.0/A.(EC)	Apply spray in a 10- to 12-inch band covering only the soil surface and lowest stems and foliage.
Mites	0.5-1.0/A.(EC)	Use restricted to the southeastern United States. Foliage application. Use lower dosage for light infestations and higher dosage for heavy infestations.

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Potatoes		0.1 ppm. 7 day preharvest interval through 1.0 lb./A. Foliage application. Apply in up to 100 gallons of water per acre to give uniform coverage.
Colorado potato beetle	0.25-0.5/A.(EC)	Foliage application.
Flea beetles	0.5/A.(EC)	Foliage application.
Aphids	0.5-1.0/A.(EC)	Foliage application.
Mites	0.5-1.0/A.(EC)	Use restricted to northwestern United States. Foliage application. Apply 0.5 lb. rate against light infestations.
Potato tuberworm	1.0/A.(EC)	Foliage application. Apply by air, or ground equipment including low pressure knapsack sprayers.
Sugarcane		0.1 ppm. 30 day preharvest interval through 0.75 lb./A.
Sugarcane borer	0.75/A.(EC)	Use restricted to the continental United States. For aerial application only.
Tobacco		NF. 5 day preharvest interval through 1.0 lb./A. Foliage application.
Green peach aphid Tobacco hornworm	0.5/A.(EC)	Foliage application. Do not use on shade-grown tobacco.
Tobacco budworm	0.5-1.0/A.(EC)	Foliage application. Use low dosage for light infestations and the high dosage for heavy infestations. Do not use on shade-grown tobacco.

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS		
For outdoor use by commercial applicators only in the production of nursery grown ornamental plants. Apply in up to, but not more than, 100 gallons of spray per acre. Do not transplant, pick, or otherwise handle the treated plants until 2 days after application.		
(Herbaceous Plants and Bulbs)		
Flowers		
Plant bugs Thrips	7.5 oz./A. (EC)	Foliage application.
Aphids Cabbage looper Leafhoppers Mites	10 oz./A. (EC)	Foliage application.
Geraniums		
Tobacco budworm	15 oz./A. (EC)	Foliage application. Up to 3 applications at 30-day intervals may be needed for control.
(Woody Shrubs, Trees and Vines)		
Azaleas Birch Roses		
Leaf miners	5.0 oz./A. (EC)	Foliage application. Apply when leaves are expanded and small mines begin to appear.
Conifers		
Sawflies	5.0 oz./A.(EC)	Foliage application.
Mites	10 oz./A. (EC)	Foliage application. A second application 2 weeks later may be needed.

DIMETHYL PHOSPHATE OF 3-HYDROXY-N-METHYL-*cis*-CROTONAMIDE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		actual	
	Douglas-fir Pine Spruce		
**	Aphids	10 oz./A.(EC)	Foliage application.
	Deciduous trees		
	Sawflies	5.0 oz./A.(EC)	Foliage application.
	Aphids Leafhoppers Mites	10 oz./A.(EC)	Foliage application. A second application 2 weeks later may be needed.
	Shrubs		
	Plant bugs Thrips	7.5 oz./A.(EC)	Foliage application.

DIMETHYL PHOSPHATE OF α-METHYLBENZYL 3-HYDROXY-CIS-CROTONATE*

PRINCIPAL FORMULATIONS: EC; S; D

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Animals: Beef cattle Dairy cattle	0.02 (meat, fat and meat byproducts of cattle, goats, hogs, and sheep) 0.02 (milk)	1.0% (in water)	Apply 5 teaspoonsful spray to face and a total of 5-10 teaspoonsful to back and sides of animal. Do not apply more than 3 times per week.
		0.25% (in water)	Spray animals thoroughly with up to 1 gallon of 0.25% spray, or up to 2 gallons of 0.1% spray. Apply second application 14 days later. Repeat as needed, but not more often than once every 7 days.
		0.5% (in water)	Apply at the rate of 1-2 quarts per animal the size of an adult cow, proportionately less for smaller animals. Do not apply more often than every 7 days. Do not contaminate food, feed, or drinking water.
		1.0% (in oil)	Apply by back rubbers.
		1.0% (in water)	Apply at the rate of 1-2 pints per animal the size of an adult cow, proportionately less for smaller animals. Do not apply more often than every 7 days. Do not contaminate food, feed, or drinking water.
		2.0% (in water)	Apply daily at the rate of 1-2 oz. per animal. Do not contaminate food, feed, or drinking water.
		3.0% (dusting powder)	Apply at the rate of 1-2 heaping tablespoonfuls per animal on poll, back, and upper portions of sides. Do not repeat application within 14 days.
		1.0% (in oil)	Spray 2 fl. oz. per animal daily.
		1.0% (in oil)	Spray 3.5 fl. oz. per animal, two applications at 14-day interval.

*Proprietary name: "Ciodrin"

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DIMETHYL PHOSPHATE OF α-METHYLBENZYL 3-HYDROXY-CIS-CROTONATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Animals: Beef cattle Dairy cattle (continued)	0.02 (meat, fat and meat byproducts of cattle, goats, hogs, and sheep)	3.0% (dusting powder)	Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks and in alley ways leading to and from animal buildings or dairy barns. May be applied daily when application is made with dust bags.
	0.02 (milk)	3.0% (dusting powder)	Treat animal thoroughly, for louse control. If necessary, repeat in 3-4 weeks. Use in conventional hand and powder dusters. No feed-off period required when used on animals being feed for slaughter. Do not treat calves under 6 months of age.
Goats Sheep Swine		0.25% (in water)	Spray animals thoroughly with up to 1 gallon of 0.25% spray, or up to 2 gallons of 0.1% spray. Apply second application 14 days later. Repeat as needed, but not more often than once every 7 days.
		0.5% (in water)	Apply at the rate of 1 quart per animal. Do not apply more often than 7 days. Do not contaminate food, feed or drinking water.
		1.0% (in water)	Apply 5 teaspoonsful spray to face and a total of 5-10 teaspoonsful to back and sides of animal. Do not apply more than 3 times per week.
		1.0% (in water)	Apply at the rate of 1 pint per animal. Do not apply more often than 7 days. Do not contaminate food, feed, or drinking water.
Swine		0.25% (in oil)	Apply 1 oz. per animal.
:*		3%(D)	Apply 1-2 oz. as thoroughly as possible giving special attention to the neck and area around the ears. Repeat in 3-4 weeks if necessary.

DIMETHYL PHOSPHATE OF α-METHYLBENZYL 3-HYDROXY-CIS-CROTONATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Agricultural premises: Barns Dairy barns Fences Fly breeding areas Other farm buildings (except poultry houses)	0.02 (meat, fat and meat byproducts of cattle, goats, hogs, and sheep) 0.02 (milk)	1.0% (in water) 0.25% (in oil)	Apply as a spray at the rate of 1 gal./1,000 sq. ft. Do not contaminate food, feed, or drinking water. Fog about 2 fluid ounces of spray per 1,000 cubic feet. Do not apply in areas where animals have received direct application of DDVP within 8 hours.

O,S-DIMETHYL PHOSPHORAMIDOTHIOATE*

PRINCIPAL FORMULATION: Water miscible

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
** Broccoli		1.0 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.0 lb./A. Foliage application.
Aphids Diamondback moth (larvae) Imported cabbageworm Looper, cabbage	0.5-1.0/A. (water miscible)	In an insect-prevention program beginning when plants are small, use 0.5 lb. rate and apply at 7-day intervals. For cleanup of existing populations, use 0.75-1.0 lb. rate.
Brussels sprouts		1.0 ppm. 14 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids Diamondback moth (larvae) Imported cabbageworm Looper, cabbage	0.5-1.0/A. (water miscible)	In an insect-prevention program beginning when plants are small, use 0.5 lb. rate and apply at 7-day intervals. For cleanup of existing populations, use 0.75-1.0 lb. rate.

*Monitor

O,S-DIMETHYL PHOSPHORAMIDOTHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual	
**	Cabbage		1.0 ppm. 35 day preharvest interval through 1.0 lb./A. Foliage application.
	Aphids Cabbage looper Diamondback moth (larvae) Imported cabbageworm	0.5-1.0/A. (water miscible)	In an insect-prevention program beginning when plants are small, use 0.5 lb. rate and apply at 7-day intervals. For cleanup of existing populations, use 0.75-1.0 lb. rate.
**	Cauliflower		1.0 ppm. 28 day preharvest interval through 1.0 lb./A. Foliage application.
	Aphids Cabbage looper Diamondback moth (larvae) Imported cabbageworm	0.5-1.0/A. (water miscible)	In an insect-prevention program beginning when plants are small, use 0.5 lb. rate and apply at 7-day intervals. For cleanup of existing populations, use 0.75-1.0 lb. rate.
	Cotton		0.1 ppm (cottonseed). 50 day preharvest interval through 1.0 lb./A. Foliage application. Do not apply after bolls open. Do not feed gin trash to livestock or allow animals to graze on treated areas.
	Aphids Beet armyworm Cabbage looper Mites Thrips	0.5-1.0/A. (water miscible)	Foliage application.

O,S-DIMETHYL PHOSPHORAMIDOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Potatoes		0.1 ppm. 14 day preharvest interval through 1.0 lb./A. Foliage application.
Aphids Cabbage looper Colorado potato beetle Flea beetles Potato leafhopper Potato tuberworm	0.75-1.0/A. (water miscible)	Apply in a 7- to 10-day insect-prevention program or as necessary.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE*

PRINCIPAL FORMULATIONS: EC, L, S, SP, susp., D, G, bait, powder, Pr., tablet

TYPE PESTICIDE: Insecticide, Molluscicide, Parasiticide

General Warnings and Limitations

Bee caution: This product is toxic to bees and should not be applied when bees are actively visiting the area.

Trichlorfon does not significantly affect beneficial insects (parasites, predators and pollinators) especially when applied at the minimum recommended rates per acre. This advantage is lost when used in conjunction with or alternated in a program with non-selective insecticides. This applies to alfalfa and cotton in particular.

Trichlorfon is not specifically recommended for the control of aphids, cabbage looper or mites, but good suppression of these pests usually results from recommended dosages.

To avoid plugging, use 50 mesh screens in sprayers when applying SP formulations. Do not use SP formulations in hose-end sprayers or proportioners.

Note that house fly and cockroach baits containing trichlorfon or trichlorfon and dichlorvos are marketed primarily as dry baits which may also be prepared as liquid or syrup baits as indicated under the various use sites.

*trichlorfon; Dipterex; Dylox; Neguvon

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		

Do not allow trichlorfon to drift onto varieties of sorghum which are sensitive to phosphates. To do so may cause injury (burning) to sorghum.

Apply dilute sprays in sufficient water for complete coverage, but in not less than one gallon per acre.

Refer to Cropland entry for barrier treatment to control migrating armyworm and saltmarsh caterpillars.

Alfalfa (forage hay)		60 ppm (fresh). 90 ppm (hay). No pregrazing or preharvest interval through 1.0 lb./A. (dilute spray). Foliage application. Make up to 3 applications per cutting 3 day pregrazing or preharvest interval through 1.0 lb./A.(ULV). Foliage application. Do not apply more than once per cutting. 7 day pregrazing or preharvest interval through 1.0 lb./A.(dust). Foliage application. Do not apply more than once per cutting. 14 day pregrazing or preharvest interval through 1.0 lb./A.(bait). Broadcast application. Do not apply more than once per cutting. Use patterns for sprays include alfalfa in mixed stands with grasses. Dust may be formulated with sulfur.
Refer also to Alfalfa (seed crop).		
Alfalfa caterpillar	0.375-0.5/A. (S,SP), 0.9-1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Alfalfa (continued) (forage hay)		
Alfalfa plant bug	1.0/A.(S,SP)	Foliage application. Some S formulations may be applied undiluted (ULV).
Alfalfa webworm	0.25-1.0/A. (S,SP), 1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).
Armyworm	1.0/A.(S,SP)	Foliage application. Some S formulations may be applied undiluted (ULV).
	1.0/A.(bait)	Broadcast application.
Beet armyworm	0.5-1.0/A. (S,SP), 0.9-1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).
Crickets	1.0/A.(bait)	Broadcast application.
Fall armyworm	0.5-1.0/A.(S)	Foliage application. Apply undiluted (ULV).
Leafhoppers	0.5-1.0/A. (S,SP)	Foliage application. Some S formulations may be applied undiluted (ULV).
Lygus bugs (including tarnished plant bug)	1.0/A.(S,SP), 0.9-1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).
Saltmarsh caterpillar	1.0/A.(bait)	Broadcast application.
Stink bugs	1.0/A.(S,SP), 0.9-1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Alfalfa (continued) (forage hay)		
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A.(bait)	Broadcast application. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A. (S,SP), 0.9-1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).
	1.0/A.(bait)	Refer to surface feeding cutworm entry above.
Western yellowstriped armyworm	0.5/A.(S,SP), 0.9-1.0/A.(D)	Foliage application. Some S formulations may be applied undiluted (ULV).
Alfalfa (seed crop)		90 ppm (hay). 7 day preharvest interval through 1.5 lb./A. Foliage application. Do not cut green crop for feed or forage. Chaff may be used for feed or forage.
Refer also to Alfalfa (forage, hay).		
Armyworm Lygus bugs (including tarnished plant bug) Stink bugs Variegated cutworm	1.0-1.5/A. (S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Artichokes		0.1 ppm. 14 day preharvest interval through 2.5 lb./A. Foliage application.
Artichoke plume moth	2.0-2.5/A.(D)	Foliage application.
Bananas		2.0 ppm. 0.2 ppm (in pulp after peel is removed). No preharvest interval through 0.5 lb./A. Foliage application.
Banana caterpillar	0.4-0.5/A.(SP)	Foliage application. Repeat as needed, but not more often than every 2 weeks.
Barley		0.1 ppm (grain). 1.0 ppm (straw). 50.0 ppm (forage). 21 day preharvest interval through 1.0 lb./A. Broadcast or foliage application. For sprays make up to 3 applications per season. Applications may be made without removal of grazing livestock. For baits do not graze treated fields. Do not feed treated straw to dairy or meat animals.
Armyworm	0.5-1.0/A. (S,SP)	Foliage application.
	1.0/A.(bait)	Broadcast application.
Beet webworm	0.5-1.0/A. (S,SP)	Foliage application.
Bertha armyworm	1.0/A.(S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Barley (continued)		
Crickets Saltmarsh caterpillar Surface feeding cutworms	1.0/A.(bait)	Broadcast application. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A. (S,SP)	Foliage application.
Beans (dry, snap)		0.1 ppm (beans). 1.0 ppm (vines). 14 day preharvest interval through 1.5 lb./A. Band, broadcast or foliage application. For bait applications do not feed treated vines to dairy or meat animals. Dust may be formulated with sulfur.
Refer also to Beans (lima).		
Armyworm	1.0-1.5/A. (D,S,SP)	Foliage application.
Crickets	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers Lygus bugs Mexican bean beetle	1.0-1.5/A. (D,S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beans (continued) (dry, snap)		
Saltmarsh caterpillar	1.5/A., or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Stink bugs	1.0-1.5/A. (D,S,SP)	Foliage application.
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.5/A., or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	1.0-1.5/A. (D,S,SP)	Foliage application.
	1.5/A., or 0.037/1,000 sq.ft.(bait)	Refer to surface feeding cutworm entry above.
Western bean cutworm	0.5-1.0/A. (S,SP), 1.0-1.5/A.(D)	Foliage application.
	1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beans (lima)		12 ppm (beans [reflecting 0.1 ppm in or on the shelled beans], bean vines, bean vine hay) 3 day preharvest interval through 1.5 lb./A.(dust, spray). Foliage application. Make up to 5 applications per season. 30 day preharvest interval through 1.5 lb./A.(bait). Band or broadcast application. Do not apply more than twice per season. Dust may be formulated with sulfur.
Armyworm	1.0-1.5/A. (D,S,SP)	Foliage application.
	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Crickets	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers Lygus bugs Mexican bean beetle	1.0-1.5/A. (D,S,SP)	Foliage application.
Saltmarsh caterpillar	1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Stink bugs	1.0-1.5/A. (D,S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beans (lima) (continued)		
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	1.0-1.5/A. (D,S,SP)	Foliage application.
	1.5/A.(bait)	Refer to surface feeding cutworm entry above.
Western bean cutworm	0.5-1.0/A. (S,SP), 1.0-1.5/A.(D)	Foliage application.
	1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beets		0.1 ppm. 28 day preharvest interval through 1.5 lb./A. Band, broadcast of foliage application. Do not eat tops. Dust may be formulated with sulfur.
Alfalfa webworm	1.0/A.(SP), 1.0-1.5/A.(D)	Foliage application.
Armyworm	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Beet armyworm	1.0-1.5/A.(SP), 1.0/A.(D)	Foliage application.
Beet webworm	1.0/A.(D,SP)	Foliage application.
Crickets	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers	1.0/A.(D,SP)	Foliage application.
Lygus bugs	1.0-1.5/A.(SP), 1.0/A.(D)	Foliage application.
Saltmarsh caterpillar	1.0/A.(SP), 1.0-1.5/A.(D)	Foliage application.
	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beets (continued)		
Surface feeding cutworms	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Brussels sprouts Cabbage		0.1 ppm. 21 day preharvest interval through 1.0 lb./A. Band, broadcast or foliage application. Dust may be formulated with sulfur.
Armyworm Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Diamondback moth	1.0/A.(D,SP)	Foliage application.
Imported cabbageworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.
Saltmarsh caterpillar Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Refer to surface feeding cutworm entry above.
Western yellowstriped armyworm	0.5/A.(SP), 1.0/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Carrots		0.1 ppm. 28 day preharvest interval through 1.5 lb./A. Foliage application. Do not use tops for feed or food. Dusts may be formulated with sulfur.
Beet armyworm	1.0-1.5/A.(SP), 1.0/A.(D)	Foliage application.
Dipterous leafminers	1.0/A.(D,SP)	Foliage application.
Lygus bugs	1.0-1.5/A.(D,SP)	Foliage application.
Saltmarsh caterpiller	1.5/A.(SP), 1.0-1.5/A.(D)	Foliage application.
Variegated cutworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.
Western yellowstriped armyworm	0.5/A.(SP), 1.0/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cauliflower		0.1 ppm. 21 day preharvest interval through 1.0 lb./A. Band, broadcast or foliage application. Dust may be formulated with sulfur.
Armyworm Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Diamondback moth	1.0/A.(D,SP)	Foliage application.
Imported cabbageworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.
Saltmarsh caterpillar Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Refer to surface feeding cutworm entry above.
Western yellowstriped armyworm	0.5/A.(SP), 1.0/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Citrus		0.1 ppm (fruit). 2.5 ppm (in dried citrus pulp) 21 day preharvest interval through 4.0 lb./A. Foliage application. Make up to 3 applications per season. Use restricted to Arizona and California. Apply in 200-500 gallons water per acre. Ground application only.
California orangedog	2.0/A.(SP)	Foliage application.
Citrus cutworm Citrus looper	4.0/A.(SP)	Foliage application.
Fruittree leafroller Omnivorous leafroller	2.0/A.(SP)	Foliage application.
Orange tortrix	4.0/A.(SP)	Foliage application.
Western avocado leafroller	2.0-4.0/A.(SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Clover (forage hay)		60 ppm (fresh). 90 ppm (hay). No pregrazing or preharvest interval through 1.0 lb./A. (spray). Foliage application. Make up to 3 applications per cutting. 7 day pregrazing or preharvest interval through 1.0 lb./A. (dust). Foliage application. Do not apply more than once per cutting. Use patterns for sprays include clover in mixed stands with grasses.
Refer also to Clover (seed crop).		
Alfalfa caterpillar	0.375-0.5/A. (S,SP)	Foliage application.
Alfalfa webworm	0.25-1.0/A. (S,SP), 1.0/A.(D)	Foliage application.
Armyworm	1.0/A.(S,SP)	Foliage application.
Beet armyworm	0.5-1.0/A. (S,SP), 1.0/A.(D)	Foliage application.
Leafhoppers	0.5-1.0/A.(S,SP)	Foliage application.
Lygus bugs (including tarnished plant bug)	1.0/A.(D,S,SP)	Foliage application.
Stink bugs	1.0/A.(D,S,SP)	Foliage application.
Variegated cutworm	0.5-1.0/A. (S,SP), 1.0/A.(D)	Foliage application.
Western yellowstriped armyworm	0.5/A.(S,SP), 1.0/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Clover (seed crop)		90 ppm (hay). 7 day preharvest interval through 1.5 lb./A.(spray) or 1.75 lb./A.(dust). Foliage application. Do not cut green crop for feed or forage. Chaff may be used for feed or forage.
Refer also to Clover (forage, hay).		
Armyworm Lygus bugs Stink bugs Variegated cutworm	1.0-1.5/A.(S), 1.25-1.75/A.(D)	Foliage application. D may be formulated with sulfur.
Collards		0.1 ppm. 28 day preharvest interval through 1.0 lb./A. Band, broadcast or foliage application. Dust may be formulated with sulfur.
Armyworm	1.0/A.(D,SP)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Beet webworm	1.0/A.(D,SP)	Foliage application.
Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Collards (continued)		
Diamondback moth Dipterous leafminers	1.0/A.(D,SP)	Foliage application.
Saltmarsh caterpillar	1.0/A.(D,SP)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Thrips	0.5-1.0/A.(SP)	Foliage application.
Variegated cutworm	0.5-1.0/A.(SP), 1.0/A.(D)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Refer to surface feeding cutworm entry above.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Corn		0.1 ppm (corn grain including popcorn, fresh corn including sweet corn [kernels plus cob with husk removed]). 30 ppm (fodder, forage). No preharvest interval through 1.0 lb./A.(spray). Foliage application. Make up to 3 applications per season. 40 day preharvest interval through 1.0 lb./A.(bait) for feed, food or ensilage. Band or broadcast application. Do not apply more than once per season.
Armyworm	0.5-1.0/A.(S,SP)	Foliage application. For early season application when plants are 3 to 12 inches high, direct spray to lower portions of plants and to soil around base of plants. Later in the season applications may be made as a full coverage spray.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Corn (continued)		
Cutworms	0.5-1.0/A.(S,SP)	Foliage application. For early season application when plants are 3 to 12 inches high, direct spray to lower portions of plants and to soil around base of plants. Later in the season applications may be made as a full coverage spray.
Saltmarsh caterpillar Surface feeding cutworms	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Cotton		0.1 ppm (cottonseed). 7 day preharvest interval through 1.5 lb./A. Band, broadcast or foliage applications. 14 day pregrazing interval through 1.5 lb./A. Band, broadcast or foliage application. Trichlorfon may occasionally cause marginal leaf burn.
Armyworm	1.5/A.(bait)	Apply in a band over the row or as a broadcast treatment.
Beet armyworm	1.0/A.(S,SP), 0.9-1.0/A.(D)	Foliage application. Apply when economic populations are first noted and repeat at weekly intervals until controlled. D may be formulated with sulfur, toxaphene or toxaphene and sulfur.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Black cotton fleahopper complex	1.0-1.5/A. (S,SP), 0.9-1.5/A.(D)	Foliage application. D may be formulated with sulfur.
Cotton fleahopper	0.25-1.0/A. (S,SP), 0.9-1.5/A.(D)	Foliage application. For light to moderate infestations apply sprays at the 0.25 lb. rate. Higher rates may be required if heavy infestations or migrations occur. D may be formulated with sulfur.
Cotton leafperforator	1.0-1.5/A. (S,SP), 0.9-1.5/A.(D)	Foliage application. Apply when economic populations are first noted and repeat at weekly intervals until controlled. D may be formulated with sulfur or toxaphene.
	0.6-0.9/A.(D)	Foliage application. Formulated with toxaphene and sulfur.
Cotton leafworm	0.5-1.0/A. (S,SP), 0.9-1.0/A.(D)	Foliage application. D may be formulated with sulfur.
Crickets	1.5/A.(bait)	Apply in a band over the row or as a broadcast application.
Darkling beetles	0.5-1.0/A. (S,SP), 0.9-1.5/A.(D)	Foliage application. D may be formulated with sulfur.
Leafrollers	1.0-1.5/A.(S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton (continued)		
Lygus bugs	1.0-1.5/A. (S,SP), 0.9-1.5/A.(D)	Foliage application. Apply when economic populations are first noted and repeat at weekly intervals until controlled. D formulated with toxaphene or sulfur.
	0.6-0.9/A.(D)	Foliage application. Formulated with toxaphene and sulfur.
Saltmarsh caterpillar	1.5/A.(S,SP), 0.9-1.5/A.(D)	Foliage application. D may be formulated with sulfur.
	1.5/A.(bait)	Apply as band over the row or as a broadcast treatment.
Southern garden leafhopper	1.0/A.(S,SP), 0.9-1.5/A.(D)	Foliage application.
Stink bugs	1.0-1.5/A. (S,SP), 0.9-1.5/A.(D)	Foliage application. D may be formulated with sulfur.
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.5/A.(bait)	Apply in a band over the row or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Western yellowstriped armyworm	0.5-1.0/A. (S,SP), 0.9-1.0/A.(D)	Foliage application. D may be formulated with sulfur.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cowpeas (including black-eyed peas crowder peas Southern peas)		0.1 ppm (cowpeas). 1.0 ppm (vines). 14 day preharvest interval through 1.5 lb./A. Band, broadcast or foliage application. Do not apply more than twice per season. For baits do not feed treated vines to dairy or meat animals. Dusts may be formulated with sulfur.
Armyworm	1.0-1.5/A. (D,S,SP)	Foliage application.
	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Crickets	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers Lygus bugs Mexican bean beetle	1.0-1.5/A. (D,S,SP)	Foliage application.
Saltmarsh caterpillar	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply in a band over the row, around the base of plants or as a broadcast treatment.
Stink bugs	1.0-1.5/A. (D,S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cowpeas (continued)		
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.5/A. or 0.037/1,000 sq.ft.(bait)	Apply in a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	1.0-1.5/A. (D,S,SP)	Foliage application.
	1.5/A. or 0.037/1,000 sq.ft.(bait)	Refer to surface feeding cutworm entry above.
Cropland (including field crops vegetable crops)		NF.
Armyworm Saltmarsh caterpillar	0.75 lb./100 linear feet(D), 0.75 lb./100 linear feet (bait)	Barrier treatment. To control migrating caterpillars place a 1/8 inch deep, 6 inch wide band of dust or a 1/8 to 1/4 inch deep, 6 inch wide band of bait around fields to be protected. Apply to soil away from feed, food or forage crops. For best results use dust in conjunction with an aluminum or fiber barrier strip. Dust application is for saltmarsh caterpillar only.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Flax		0.1 ppm (seed). 1.0 ppm (straw). 21 day preharvest interval through 1.0 lb./A. Broadcast or foliage application. For sprays apply up to 3 treatments per season. Applications may be made without removal of grazing livestock. For baits do not graze treated fields or feed straw to dairy or meat animals.
Armyworm	0.5-1.0/A.(S,SP)	Foliage application.
	1.0/A.(bait)	Broadcast application.
Beet webworm	0.5-1.0/A.(S,SP)	Foliage application.
Bertha armyworm	1.0/A.(S,SP)	Foliage application.
Crickets Saltmarsh caterpillar Surface feeding cutworms	1.0/A.(bait)	Broadcast application. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A.(S,SP)	Foliage application.

Grass

Refer to Pasture (grass) or Rangeland (grass).

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lettuce		0.1 ppm. 28 day preharvest interval through 1.0 lb./A. Band, broadcast or foliage application. Do not apply after heads begin to form. Dusts may be formulated with sulfur.
Armyworm	1.0/A.(D,SP)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Beet webworm	1.0/A.(D,SP)	Foliage application.
Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers	1.0/A.(D,SP)	Foliage application.
Saltmarsh caterpillar	1.0/A.(D,SP)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lettuce (continued)		
Thrips	0.5-1.0/A.(SP)	Foliage application.
Variegated cutworm	0.5-1.0/A.(SP)	Foliage application.
	1.0/A. or 0.025/1,000 sq.ft.(bait)	Refer to surface feeding cutworm entry above.

Lima beans

Refer to Beans (lima).

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oats		0.1 ppm (grain). 1.0 ppm (straw). 50 ppm (forage). 21 day preharvest interval through 1.0 lb./A. Broadcast or foliage application. For sprays make up to 3 applications per season. Applications may be made without removal of grazing livestock. For baits do not graze treated fields. Do not feed treated straw to dairy or meat animals.
Armyworm	0.5-1.0/A.(S,SP)	Foliage application.
	1.0/A.(bait)	Broadcast application.
Beet webworm	0.5-1.0/A.(S,SP)	Foliage application.
Bertha armyworm	1.0/A.(S,SP)	Foliage application.
Crickets Saltmarsh caterpillar Surface feeding cutworms	1.0/A.(bait)	Broadcast application. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A.(S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pasture (grass)		60 ppm (fresh). 90 ppm (hay). No preharvest interval through 1.0 lb./A. Foliage application. Make up to 3 applications per cutting or per season if crop is not cut for hay. Applications may be made without removal of grazing livestock.
Armyworm Fall armyworm	1.0/A.(S,SP)	Foliage application.
Leafhoppers	0.5-1.0/A.(S,SP)	Foliage application.
Plant bugs	1.0/A.(S,SP)	Foliage applicaiton.
Peanuts		0.05 ppm (peanuts). 4.0 ppm (peanut vine hay and hulls). No preharvest interval through 1.0 lb./A. Band or broadcast application. Make up to 3 applications before digging. One additional treatment may be made between digging and harvest.
Armyworm Crickets Saltmarsh caterpillar Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peppers		0.1 ppm. 21 day preharvest interval through 1.0 lb./A.(spray, bait) or 1.25 lb./A.(dust). Band, broadcast or foliage application. Dust may be formulated with sulfur.
Armyworm Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers (including serpentine leafminer complex) Pepper maggot	1.0/A.(SP), 1.0-1.25/A.(D)	Foliage application.
Saltmarsh caterpillar Surface feeding cutworms	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pumpkins		0.1 ppm. 14 day preharvest interval through 1.0 lb./A.(spray, bait) or 1.5 lb./A.(dust). Band, broadcast or foliage application. Apply only once per season. Dust may be formulated with sulfur.
Armyworm Crickets Saltmarsh caterpillar	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast application.
Squash bug	1.0/A.(SP), 1.25-1.5/A.(D)	Foliage application.
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Varigated cutworm	0.5-1.0/A.(SP), 1.25-1.5/A.(D)	Foliage application.
	1.0/A.(bait)	Refer to surface feeding cutworm entry above.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Rangeland (grass)		240 ppm (forage, hay). No preharvest interval through 0.5 lb./A. (ULV L in oil). Foliage application. Make up to 3 applications. No preharvest interval through 1.0 lb./A. (dilute sprays and ULV S formulations). Foliage application. Applications may be made without removal of livestock. For dilute sprays make up to 3 applications per cutting or per season if grass is not cut for hay. For ULV S formulations do not apply more than once per cutting or per season if grass is not cut for hay.
Armyworm Fall armyworm	1.0/A.(S,SP)	Foliage application. Some S formulations may be applied undiluted (ULV).
Leafhoppers	0.5-1.0/A. (S,SP)	Foliage application. Some S formulations may be applied undiluted (ULV).
Plant bugs	1.0/A.(S,SP)	Foliage application. Some S formulations may be applied undiluted (ULV).
Range caterpillar	0.25-0.5/A. (L)	ULV foliage application. L formulated in oil. Apply undiluted by aircraft capable of delivering the proper volume per acre. Treat actively feeding and mobile caterpillars in the third through fifth instars.
	0.5-1.0/A. (S,SP)	Foliage applicaiton. Some S formulations may be applied undiluted (ULV).

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Safflower		0.1 ppm (seed). Apply up to onset of bloom through 1.5 lb./A. Band, broadcast or foliage application. Apply up to twice per season. Dust may be formulated with sulfur.
Armyworm	1.0-1.5/A.(SP), 1.25-1.5/A.(D)	Foliage application.
	1.5/A.(bait)	Broadcast application. Do not apply after plants begin to bloom.
Crickets	1.5/A.(bait)	Broadcast application. Do not apply after plants begin to bloom.
Lygus bugs	1.0-1.5/A.(SP), 1.25-1.5/A.(D)	Foliage application. Make the first application approximately 2 weeks prior to bloom and the second one at the onset of bloom.
Saltmarsh caterpillar Surface feeding cutworms	1.5/A.(bait)	Broadcast application. Do not apply after plants begin to bloom. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Thrips Variegated cutworm	1.0-1.5/A.(SP), 1.25-1.5/A.(D)	Foliage application. Make the first application approximately 2 weeks prior to bloom and the second one at the onset of bloom.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Soybeans (seed crop)		NF. Do not pasture or use treated crop for feed, food, forage or oil. Dusts may be formulated with sulfur.
Armyworm	1.0-1.5/A.(SP), 1.25-1.75/A.(D)	Foliage application.
	1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Crickets	1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers Lygus bugs	1.0-1.5/A.(SP), 1.25-1.75/A.(D)	Foliage application.
Saltmarsh caterpillars	1.0-1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Stink bugs	1.0-1.5/A.(SP), 1.25-1.75/A.(D)	Foliage application.
Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0-1.5/A.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	1.0-1.5/A.(SP), 1.25-1.75/A.(D)	Foliage application.
	1.0-1.5/A.(bait)	Refer to surface feeding cutworm entry above.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Sugar beets		0.1 ppm (roots). 12 ppm (tops). 14 day preharvest interval through 1.5 lb./A. Band, broadcast or foliage application. 28 day preharvest interval through 1.5 lb./A. for baits if tops are to be fed to livestock. Dust may be formulated with sulfur.
Armyworm	1.5/A.(bait)	Apply as a band over the row or as a broadcast treatment.
Beet armyworm	1.0-1.5/A. (S,SP), 1.0/A.(D)	Foliage application.
Beet webworm	0.5-1.0/A. (S,SP), 1.0/A.(D)	Foliage application.
Crickets	1.5/A.(bait)	Apply as a band over the row or as a broadcast treatment.
Dipterous leafminers	1.0/A.(D,S,SP)	Foliage application.
Saltmarsh caterpillar	1.5/A.(S,SP), 1.0-1.5/A.(D)	Foliage application.
	1.5/A.(bait)	Apply as a band over the row or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Sugar beets (continued)		
Surface feeding cutworms	1.5/A.(bait)	Apply as a band over the row or as a broadcast treatment. Apply before or just after planting fields with a history of surface feeding cutworm damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A. (S,SP), 1.0/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tobacco		NF. 3 day preharvest interval through 1.0 lb./A.(spray) or 1.5 lb./A.(dust). Foliage application. Do not apply baits after plants are 2 feet tall.
Armyworm Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Do not apply directly into the bud.
Green June beetle (larvae)	0.5/100 sq. yds.(SP)	Soil drench. Apply in 100 gallons of water to uprooted areas of plant beds.
Hornworms	1.0/A.(SP), 1.0-1.5/A.(D)	Foliage application.
Saltmarsh caterpillar Surface feeding cutworms (including black cutworm granulate cutworm variegated cutworm)	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. Do not apply directly into the bud. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Tobacco budworm	1.0/A.(SP), 1.0-1.5/A.(D)	Foliage application. Apply directly into the bud.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tomatoes		0.1 ppm. 21 day preharvest interval through 1.0 lb./A. (spray) or 1.25 lb./A. (dust). Foliage application. 28 day preharvest interval through 1.0 lb./A. (bait). Band or broadcast application. Do not graze fields treated with baits. Dust may be formulated with sulfur.
Armyworm Crickets	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Dipterous leafminers (including serpentine leafminer complex)	1.0/A.(SP), 1.0-1.25/A.(D)	Foliage application.
Saltmarsh caterpillar Surface feeding cutworms	1.0/A. or 0.025/1,000 sq.ft.(bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Tomato hornworm	1.0/A.(SP), 1.0-1.25/A.(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Wheat		0.1 ppm (grain). 1.0 ppm (straw). 50 ppm (forage). 21 day preharvest interval through 1.0 lb./A. Broadcast or foliage application. For sprays make up to 3 applications per season. Applications may be made without removal of grazing livestock. For baits do not graze treated fields. Do not feed treated straw to dairy or meat animals.
Armyworm	0.5-1.0/A.(S,SP)	Foliage application.
	1.0/A.(bait)	Broadcast application.
Beet webworm	0.5-1.0/A.(S,SP)	Foliage application.
Bertha armyworm	1.0/A.(S,SP)	Foliage application.
Crickets Saltmarsh caterpillar Surface feeding cutworms	1.0/A.(bait)	Broadcast application. For surface feeding cutworms apply before or just after planting fields with a history of damage and to those fields suspected of being infested.
Variegated cutworm	0.5-1.0/A.(S,SP)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
LIVESTOCK AND POULTRY		
(Dairy) (Livestock Intended for Slaughter)		
Do not treat lactating dairy cattle, animals less than 3 months old, sick, convalescent, or stressed livestock. Do not apply in conjunction with oral drenches, other internal medications, or with other organic phosphates or materials having cholinesterase inhibiting activity.		
Beef cattle		0.1 ppm (meat, fat, and meat byproducts of cattle).
Dairy cattle (non-lactating)		0.01 ppm (milk). 7 day prefreshening interval through 0.5 fl. oz. 8% solution/ 100 lb. body wt. Pour-on application. If freshening occurs within 7 days after treatment, do not use milk for human consumption for the balance of the 7-day interval. 14 day prefreshening interval through 8 lb./100 gallons of water. Spray application. If freshening occurs with 14 days after treatment, do not use milk for human consumption for the balance of the 14-day interval. 14 day preslaughter interval through 8 lb./100 gallons of water. Spray application. 21 day preslaughter interval through 0.5 fl. oz. 8% solution/100 lb. body wt. Pour-on application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Beef cattle (continued) Dairy cattle (non-lactating)		
Cattle grubs (including common cattle grub, northern cattle grub)	0.5 fl.oz. 8%/100 lb. body wt.(S)	Pour-on application. Apply a single treatment along the backline. Proper timing of treatment is important. For most effective results, cattle should be treated as soon as possible after fly activity ceases. Host-parasite reactions sometimes occur when cattle are treated while the common cattle grub is in the gullet, or while the northern cattle grub is in the area of the spinal cord. Consult your veterinarian, extension livestock specialist or extension entomologist regarding timing of treatment. If it is impossible to determine the origin of the cattle, and thus the exact stage of the grubs is unknown, it is recommended that they receive only a maintainance ration of low energy feed during the treatment period. This lessens the likelihood of severe bloat which may occur in cattle on full feed when the common cattle grub is killed while in the gullet. Do not treat animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Beef cattle (continued) Dairy cattle (non-lactating)		
Cattle grubs (continued)	8.0 lb./100 gal. water(SP)	Spray application. Apply a a single treatment with high pressure (250-350 psi) to thoroughly wet the skin. Operate box-type spray chutes at maximum pressure. Do not spray in a confined, nonventilated area. Refer to timing information under pour-on application above.
Horn fly	8.0 lb./100 gal. water(SP)	Spray application. Apply to runoff.
Lice	0.5 fl.oz. 8%/100 lb. body wt.(S)	Pour-on application. Apply along the backline.
	2.0 lb./100 gal. water(SP)	Spray application. Apply to runoff.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

(Livestock Not Intended for Slaughter)

This chemical is also classified as a drug for use against certain internal parasites. These uses are not included here as they are under the purview of the Federal Food, Drug, and Cosmetic Act administered by the Food and Drug Administration, Department of Health, Education and Welfare.

Horses

Do not treat horses to be slaughtered for food.
Do not treat sick, toxic, or debilitated horses, or mares in the last month of pregnancy.
Do not administer in conjunction with or for 10 days to 2 weeks (depending upon the product) before or after treatment with other organic phosphates or cholinesterase inhibitors.

Horse bots	9.0 g./500 lb. body wt.(SP)	Administer dry or dissolved in water. Mix with the amount of feed to be consumed at one feeding. Withdrawal of feed 12 to 18 hours prior to treatment will assure complete ingestion. Do not treat colts under 4 months of age. Do not retreat horses at intervals of less than 30 days. Symptoms of overdosage are ataxia and colic. Do not administer intravenous anesthetics, especially muscle relaxants, for a period of 2 weeks after using trichlorfon.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Horses (continued)		
Horse bots (continued)	9.1 g./500 lb. body weight (G,tablet)	Federal law restricts this drug to use by or on the order of a licensed veterinarian. Do not fast horses before or after treatment. Mix G with a normal amount of grain. Administer tablets orally. Preferably horses should be treated one month after the first killing frost, and one month after being pastured. Symptoms of overdosage are colic, diarrhea and ataxia, and appear within 1 to 3 hours after treatment. Such symptoms are usually transient and persist only briefly. Surgery or severe stress should be avoided for at least 2 weeks before or after treatment.
	3 oz. 7.47%/ 300-400 lb. animal, 3 oz. 11.205%/ 500-700 lb. animal, 3 oz. 16.803%/ 800-1,000 lb. animal (powder)	Reduce amount of feed in the evening to a minimum. The following morning mix with the normal amount of feed. Should symptoms of overdosing such as muscular incoordination, colic or abdominal pain appear, consult your veterinarian. Do not retreat horses at intervals of less than 30 days. Formulated with phenothiazine.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Horses (continued)		
Horse bots (continued)	9.1 g./500 lb. body weight (susp.)	Federal law restricts this drug to sale by or on the order of a licensed veterinarian. Administer by stomach tube. Prepare each dose individually. Do not retain any unused portion for use at a later date. Do not fast horses before or after treatment. Preferably, horses should be treated one month after the first killing frost, and one month after being on pasture. Horse bots are usually removed in 5 to 7 days. Symptoms of overdosage are colic, diarrhea and ataxia, and appear within 1 to 3 hours after treatment. Such symptoms are usually transient and persist only briefly. Surgery or other severe stress should be avoided for at least one week after treatment. Formulated with phenothiazine and piperazine dihydrochloride.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

AGRICULTURAL PREMISES AND EQUIPMENT

Good sanitation is a necessary part of any house fly control program. Direct application of trichlorfon to walls, floors, or other surfaces previously treated with lime, whitewash or other alkaline materials may be ineffective.
On limed floors, where floors are lacking, or where there is not enough clean floor space available, treat and distribute bait on sacking, boards, or cardboard strips.
Trichlorfon dry and liquid baits may be applied daily, if needed, until flies are controlled.

(Dairy Barns and Milk Rooms)

Do not contaminate milk or milk handling equipment.
Do not contaminate feed, drinking water, litter and feed troughs.
Do not treat portions of buildings where animals can lick the treated surface.

Dairy barns		0.1 ppm (meat, fat, and meat byproducts of cattle). 0.01 ppm (milk).
House fly	0.25%(bait)	Bait block. Distribute at the rate of one 2.5 ounce block per 100 square feet. Place on ledges, window sills, tops of bulk feeders or on floor areas inaccessible to animals and children. Locate where dead flies or bait cannot fall into feed or drinking water. Formulated with 2,2-dichlorovinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Dairy barns Milk rooms		0.1 ppm (meat, fat, and meat byproducts of cattle). 0.01 ppm (milk).
Cockroaches	0.25 lb. 1%/1,000 sq.ft. (bait)	Dry bait. Scatter directly onto manure where pests breed or congregate. Scatter lightly on floors, alleyways, window sills, and other clean horizontal surfaces. For faster results apply to a moistened surface.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups of corn syrup. Sprinkle on floors, alleyways, window sills, and other areas where pests congregate.
	1.0%(bait)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush onto vertical surfaces, ceiling cracks, and rafters where pests congregate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Dairy barns (continued) Milk rooms		
Housefly	0.5 lb. 0.4% or 0.25 lb. 1%/ 1,000 sq.ft. (bait)	Dry bait. Refer to the previous cockroach entry.
	0.5 lb. 0.25-0.5%/1,000 sq.ft.(bait)	Dry bait. Scatter on floors, alleyways and other areas where flies congregate. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Refer to the previous cockroach entry.
	1.0%(bait)	Syrup bait. Spot treatment. Refer to the previous cockroach entry.
	1.0 lb. 0.25%/ 0.5 pt. water or 1.0 lb. 0.5%/pt. water (bait)	Syrup bait. Spot treatment. Apply 1 to 3 gallons per 1,000 square feet to rafters, ceiling cracks, the outer surfaces of animal enclosures, and other areas where flies congregate. Formulated with 2,2-dichloro-vinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Poultry Houses and Yards)		
Poultry houses (caged poultry only including chickens, turkeys)		NF. Keep baits out of reach of poultry. Do not contaminate feed or drinking water.
Cockroaches	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Apply to droppings under cages, along alleyways and walkups.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups of corn syrup per gallon. Sprinkle on floors, alleyways, and other areas where pests congregate.
House fly	0.5 lb. 0.4% or 0.25 lb. 1%/ 1,000 sq.ft. (bait)	Dry bait. Refer to the previous cockroach entry.
	0.25 lb. 0.5%/1,000 sq.ft.(bait)	Dry bait. Repeat at weekly intervals. Apply along edges of droppings and around doorways. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Refer to the previous cockroach entry.
	1%(bait)	Syrup bait. Spot treatment. Mix with enough water to make a syrup. Brush onto cage supports, rafters and around doorways.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Poultry houses (continued) (caged poultry only including chickens, turkeys)		
House fly (continued)	1.0 lb. 0.25%/ 0.5 pt. water (bait)	Syrup bait. Spot treatment. Brush onto cage supports, rafters, and around doorways. Formulated with 2,2-dichloro= vinyl dimethyl phosphate.
	0.25%(bait)	Bait block. Distribute at the rate of one 2.5 ounce block per 100 square feet along the edge of rafters or the sides of dropping pits. Formulated with 2,2-dichlorovinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Animal Buildings Other Than Dairy and Poultry) (Farm Storage and Equipment) (Feed Lots and Holding Pens) (Outdoor Areas)		
Animal buildings (excluding dairy and poultry) Farm buildings Feed lots Fur bearing animal ranches Holding pens Outdoor areas		0.1 ppm (meat, fat, and meat byproducts of cattle).

Do not contaminate feed, drinking water, litter and feed troughs.
Do not treat portions of buildings or areas where animals can lick the treated surface.

Cockroaches	0.25 lb. 1%/1.000 sq.ft.(bait)	Dry bait. Scatter directly onto manure, refuse, floors, alleyways, and other areas where pests breed or congregate. For faster results apply to a moistened surface.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups or corn syrup. Sprinkle on floors, alleyways, window sills and other areas where pests congregate.
	1%(bait)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush onto vertical surfaces, ceiling cracks and rafters where pests congregate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Animal buildings (continued) (excluding dairy and poultry) Farm buildings Feed lots Fur bearing animal ranches Holding pens Outdoor areas		
House fly	4 lb./40 gal. water(SP), 5 tbls. 80% (SP)/gal. water	Residual premise spray. Remove animals before spraying. Not for use on fur bearing animal ranches. Apply in and around buildings and stock pens. Apply to ceilings, floors, walls, refuse, manure piles, and other areas where flies congregate. Apply at the rate of one gallon per 500 square feet of surface area. Repeat as needed, but not more frequently than at 1- to 2-week intervals. For longer residual activity add one pound of sugar per gallon of spray.
	0.5 lb. 0.4% or 0.25 lb. 1%/ 1,000 sq.ft. (bait)	Dry bait. Refer to the previous cockroach entry.
	0.5 lb. 0.25%/1,000 sq.ft.(bait)	Dry bait. Scatter on floor, alleyways and areas where flies congregate including manure and refuse piles. Formulated with 2,2-dichlorovinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Animal buildings (continued) (excluding dairy and poultry) Farm buildings Feed lots Fur bearing animal ranches Holding pens Outdoor areas		
House fly (continued)	0.5 lb. 0.5%/1,000 sq. ft.(bait)	Dry bait. Refer to the 0.25% entry above. Not for use on fur bearing animal ranches. Formulated with 2,2-dichloro= vinyl dimethyl phosphate.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Refer to the previous cockroach entry.
	1.0%(bait)	Syrup bait. Spot treatment. Mix with enough water to make a syrup. Brush onto vertical surfaces, ceiling cracks, and rafters where pests congregate.
	1.0 lb. 0.25%/ 0.5 pt. water (bait)	Syrup bait. Spot treatment. Apply 1 to 3 gallons per 1,000 square feet to rafters, ceiling cracks, the outer surfaces of animal enclosures, and other areas where flies congregate. Formulated with 2,2-dichloro= vinyl dimethyl phosphate.
	1.0 lb. 0.5%/ pt. water (bait)	Syrup bait. Spot treatment. Refer to 0.25% entry above. Not for use on fur bearing animal ranches. Formulated with 2,2-dichlorovinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Animal buildings (continued) (excluding dairy and poultry) Farm buildings Feed lots Fur bearing animal ranches Holding pens Outdoor areas		
House fly (continued)	0.25% (bait)	Bait block. Distributed at the rate of one 2.5 ounce block per 100 square feet. Place on ledges, window sills, tops of bulk feeders or on floor areas and outdoors where they are inaccessible to animals and children. Locate where dead flies or bait cannot fall into feed or drinking water. Formulated with 2,2-dichlorovinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

HUMANS, PETS AND OTHER ANIMALS

Good sanitation is a necessary part of any house fly control program.
Do not treat portions of buildings or areas where animals can lick the treated surface. Apply baits in areas inaccessible to children and animals.
Do not contaminate feed or drinking water.
Do not use in homes.
Refer to AQUATIC AREAS for Aquarium uses.

Dogs

This chemical is also classified as a drug for use against certain internal parasites. These uses are not included here as they are under the purview of the Federal Food, Drug and Cosmetic Act administered by the Food and Drug Administration, Department of Health, Education and Welfare.

(Demodectic mange mites)	75 mg./kg. body weight(tablet)	Federal law restricts this drug to use by or on the order of a licensed veterinarian. Administer twice weekly with or after regular meals. Aids in the control of demodectic mange. The initial dose should be divided, 1/2 being given in the morning and 1/2 in the evening, to detect the occasional animal which may be hypersensitive to organophosphates. If animal reacts discontinue medication. Do not administer to greyhounds, sick, toxic or debilitated dogs, dogs heavily infested with heartworms, and dogs which have recently been bathed or treated with a cholinesterase inhibiting compound. Treated dogs should not be subjected to excessive stress.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Dogs (continued)		
Fleas	75 mg./kg. body weight (tablet)	Refer to the previous demodectic mange mite entry. Up to 100% of the fleas will be killed within 3 days.
	0.5%(Pr.)	Spray entire body against the natural lay of the hair. Spray for 5 to 10 seconds for dogs up to 10 pounds in weight, 10 to 20 seconds for dogs 10 to 30 pounds in weight, and 20 to 30 seconds for dogs over 30 pounds in weight. Do not spray into eyes. Do not use on cats. Repeat as neeeded, but not more often than weekly. For more prolonged control the dog's bedding should also be treated to help prevent reinfestation. Formulated with O,O-diethyl O-(3-chloro-4-methyl-2-oxo-= 2H-1-benzopyran-7-yl) phosphorothioate.
Lice	0.5%(Pr.)	Refer to the previous flea entry.
Ticks	75 mg./kg. body weight (tablet)	Refer to the previous demodectic mange mite entry. Highest activity against ticks occurs within the first 24 hours.
	0.5%(Pr.)	Refer to the previous flea entry.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Animal hospitals		
Cockroaches House fly	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Scatter outside runways, on window sills, on ledges and other areas where pests congregate. For caged units apply along edges of dropping area. For faster results apply to a moistened surface.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups of corn syrup. Apply outside runways and areas where pests congregate.
	1%(bait)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush onto vertical surfaces, and areas where pests congregate.
Dog kennels		
Cockroaches	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Scatter outside runways, on window sills, on ledges and other areas where pests congregate. For caged units apply along edges of dropping areas. For faster results apply to a moistened surface.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups of corn syrup. Apply outside runways and areas where pests congregate.
	1% (bait)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush onto vertical surfaces, and areas where pests congregate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Dog kennels (continued)		
House fly	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Refer to the previous cockroach entry.
	0.25 lb. 0.25%/1,000 sq.ft.(bait)	Dry bait. Scatter outside runways, on window sills, ledges and other surfaces where flies congregate. For cage units apply along edges of dropping areas. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Refer to the previous cockroach entry.
	1% (bait)	Syrup bait. Spot treatment. Refer to the previous cockroach entry.
	1.0 lb. 0.25%/0.5 pt. water(bait)	Syrup bait. Spot treatment. Brush onto vertical surfaces, and areas where flies congregate. Formulated with 2,2-dichloro= vinyl dimethyl phosphate.
	0.25%(bait)	Bait block. Distribute at the rate of one 2.5 ounce block per 100 square feet in areas where flies congregate. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
	40 g./gal. water/750 sq.ft.(SP)	For use by pest control operators only. Spot treatment. For longer residual control mix with one pound of sugar or molasses per gallon of water. Apply as a spray or brush onto areas where flies congregate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Dog kennels (continued)		
Cat flea Dog flea	40 g./gal. water/1,000 sq.ft.(SP)	For use by pest control operators only. Treat yard area, and other areas frequented by animals. Remove animals before treating and let deposit dry before allowing animals back in. Repeat as needed, but not more frequently than at 1- to 2-week intervals.
Sleeping quarters (dogs, cats)		
Cat flea Dog flea	40 g./gal. water/1,000 sq.ft.(SP)	For use by pest control operators only. Refer to previous entry under Dog kennels.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

ORNAMENTALS

For hose end sprayers or proportioners follow manufacturers mixing directions.

(Lawns and Turf)

Grass

Do not graze or use clippings from treated areas for feed or forage. Do not allow children or pets on treated areas until spray deposit has dried.

Armyworm	10-15 oz./5,000 sq.ft.(S)	Foliage application. Apply in up to 75-150 gallons of water by means of a watering can, compressed air or power sprayer.
	40-50 fl.oz. 12.82%(S)/ 5,000 sq.ft.	Foliage application. Formulated with pyrethrins.
	1.0-1.5 lb./A. or 0.125-0.187 lb./ 5,000 sq.ft. (bait)	Broadcast application.
Chinch bug	5.6-8.0 lb./A. or 10.0-12.8 oz./ 5,000 sq.ft.(SP)	Use restricted to Florida. Foliage application. Two treatments 2 to 3 weeks apart may be required for control. Apply in up to 150 to 200 gallons of water per 5,000 square feet of area.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Grass (continued)		
Crickets	1.0-1.5 lb./A. *or* 0.125-0.187 lb./ 5,000 sq.ft. (bait)	Broadcast application.
Cutworms	5.6-8.0 lb./A. (SP), 10-15 oz./ 5,000 sq.ft. (S,SP)	Foliage application. Apply in up to 75 to 150 gallons of water per 5,000 aquare feet of area.
Earwigs	1.0 lb. 1%/500 sq.ft. (bait)	Sprinkle lightly on grass near foundations of houses and along sidewalks and driveways. Treat around porches, doors and other entrances to homes. Apply in late afternoon. Repeat in 2 weeks if needed.
Sod webworms	5.6-8.0 lb./A. (SP), 10-15 oz./5,000 sq.ft.(S,SP)	Foliage application. Apply in up to 75 to 150 gallons of water per 5,000 square feet of area. For best results, mow lawn and rake dead grass from damaged areas. Water lawn and allow grass to dry before spraying. Do not water again for at least 3 days. Repeat as needed, but not more frequently than at 3- to 4-week intervals. Up to 3 applications may be required for maximum control. In most areas the first application should be made in May or June. Consult your state Agriculture Experiment Station or Cooperative Agriculture Extension Service for more specific information.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Grass (continued)		
Sod webworms (continued)	40-50 fl.oz. 12.82%(S)/ 5,000 sq.ft.	Foliage application. For heavy soils or thick, matted lawns apply the higher rate. Formulated with pyrethrins.
	10.88 oz./ 5,000 sq.ft. (G)	Broadcast application. Make up to 4 applications at 3- to 4-week intervals beginning in early to mid May. Rake lawn and remove debris. Water and cut lawn to 2 to 2 1/2 inches. Apply early or late in the day when caterpillars are active. Water well after treatment.
Surface feeding cutworms	1.0-1.5 lb./A. or 0.125-0.187 lb./ 5,000 sq.ft. (bait)	Broadcast application.
White grubs	15 oz./5,000 sq.ft.(S,SP)	Foliage application. Apply in up to 75 to 150 gallons of water.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Herbaceous Plants and Bulbs)		
Narcissus		
Narcissus bulb fly	1.0 lb./100 gal. water/1,000 ft. of row(SP)	Soil drench. Direct stream at base of plants at the beginning of adult activity (early May to June). Repeat annually.
Flowering plants (including Ajuga, Aster, Carnation, Dahlia, Fuchsia, Ornamental strawberry, Pansies, Petunia, Salvia, Snapdragon, Zinnia)		
Phytotoxicity has occured on certain varieties of carnations and zinnias. When treating large plantings of these flowers for the first time, treat a few plants and observe for 4 to 5 days before treating the entire planting. D may be formulated with sulfur. Do not handle treated plants until spray deposit has dried.		
Armyworm	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/gal. water, 1.0-1.5 lb./A.(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Flowering plants (continued)		
Climbing cutworms	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./ gal.(S)/gal. water, 1.0-1.5 lb./A.(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Crickets	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as as broadcast treatment.
Darkling beetles Diamondback moth	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Dipterous leafminers	1.0-1.5 lb./100 gal. water (S,SP), 2-3 tsp. 4 lb./ gal.(S)/gal. water, 1.0-1.5 lb./A.(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Earwigs	1.0 lb. 1%/500 sq.ft. (bait)	Broadcast application. Apply in late afternoon. Repeat in 2 weeks if needed.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Flowering plants (continued)		
Hornworms Imported cabbageworm Leafhoppers	2 tbls. 1.5 lb./ gal.(EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Lygus bugs (including tarnished plant bug)	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./ gal.(S)/gal. water, 1.0-1.5 lb./A.(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Saltmarsh caterpillar	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Stink bugs	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./ gal(S)/gal. water, 1.0-1.5 lb./A.(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Flowering plants (continued)		
Surface feeding cutworms	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Tobacco budworm Webworms	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./ gal.(S)/gal. water, 1.0-1.5 lb./A.(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

(Woody Shrubs, Trees and Vines)

Do not handle treated plants until spray deposit has dried.

Pines

Nantucket pine tip moth Zimmerman pine moth	1.0 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/gal. water	Foliage application.

Shrubs
Trees
Vines
(including

Acacia	Ficus	Heather	Oak
Alder	Fir	Hibiscus	Oleander
Arborvitae	Flowering crabapple	Holly	Pine
Azalia	Flowering peach	Ivy	Rhododendron
Camellia	Flowering plum	Juniper	Rose
Cypress	Forsythia	Lilac	Spirea
Dogwood	Gardenia	Locust	Spruce
Elm	Hawthorn	Magnolia	Viburnum
		Maple	Weigela)

For formulations with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphoro= thioate, plant injury has been noted on royal purple smoke trees, hawthorn, flowering cherries, and flowering crabapples. See III-E-16 for further information.

Armyworm	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/gal. water, 5%(D)	Foliage application.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees Vines		
Armyworm (continued)	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
	1 fl.oz. 12.82%(S)/gal. water	Foliage application. Formulated with pyrethrins.
	1.0-1.5 lb./A. or 0.5-0.75 lb. 5%/1,000 sq.ft. (bait)	Apply in a band over the row, around the base of plants or as a broadcast treatment.
Bagworm	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/ gal. water,	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
	1 fl.oz. 12.82%(S)/gal. water	Foliage application. Formulated with pyrethrins.
Birch leafminer	2 tbls. 1.5 lb./gal. (S)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees Vines		
Climbing cutworms	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/ gal. water, 5%(D)	Foliage application.
Crickets	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Darkling beetles	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Dipterous leafminers (including holly leafminer complex)	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/ gal. water, 5%(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Flea beetles	1 fl.oz. 12.82%(S)/gal. water	Foliage application. Formulated with pyrethrins.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees Vines		
Hornworms Leafhoppers	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Lygus bugs (including tarnished plant bug)	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/ gal. water, 5%(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
Plant bugs (including Lygus bugs)	1 fl.oz. 12.82%(S)/gal. water	Foliage application. Formulated with pyrethrins.
Saltmarsh caterpillar	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl phosphorothioate.
	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued) Trees Vines		
Stink bugs	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/ gal. water, 5%(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] 0,0-dimethyl phosphorothioate.
Surface feeding cutworms	1.0-1.5 lb./A. or 0.025-0.037/ 1,000 sq.ft. (bait)	Apply as a band over the row, around the base of plants or as a broadcast treatment.
Webworms	1.0-1.5 lb./100 gal. water(S,SP), 2-3 tsp. 4 lb./gal.(S)/ gal. water, 5%(D)	Foliage application.
	2 tbls. 1.5 lb./gal. (EC)/gal. water	Foliage application. Formulated with S-[2-(ethylsulfinyl)ethyl] 0,0-dimethyl phosphorothioate.
	1 fl.oz. 12.82%(S)/gal. water	Foliage application. Formulated with pyrethrins.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
FOREST, NONAGRICULTURAL AND WASTELANDS		
Recreation areas (including latrines, picnic areas, refuse areas)		
Good sanitation is a necessary part of any house fly control program. Do not contaminate food or drinking water.		
Cockroaches House fly	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Scatter lightly where pests breed or congregate. For faster results apply to a moistened surface.
	0.25-1.0 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups of corn syrup. Sprinkle where pests congregate.
	1%(bait)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush on vertical surfaces and other areas where pests congregate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Trees		
For use in forest pest control programs under supervision of governmental authorities or qualified foresters. ULV applications with S formulations can cause spotting of painted surfaces of automobiles. ULV applications with L in oil have not resulted in spotting of automobile finishes.		
Forest tent caterpillar	0.75 lb./A.(S)	Use restricted to Alabama and Louisiana. Apply undiluted (ULV) with aircraft equipment capable of delivering the proper volume per acre.
Gypsy moth (caterpillars)	1.0 lb./A. (S,L in oil)	For use in gypsy moth control programs. Apply undiluted (ULV) with aircraft capable of delivering the proper volume per acre. It is not necessary to remove honey bee colonies from forested areas to be treated. For L in oil it is recommended that storage time be held to a maximum of 7 weeks. Before and after application flush entire spray system including storage tanks with kerosene, No. 2 fuel oil, or diesel oil. Do not mix with water, aromatic solvents, or any other pesticide.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AQUATIC AREAS		
Aquariums		
Snails	0.002 oz. (tablet)	Add one tablet per 10 gallons of water. Maintain filtration and aeration during treatment. Remove snails as they die during treatment. Certain fish such as angel fish and catfish may be sensitive to trichlorfon, therefore, caution should be used especially when these species are present in the aquarium.
Ponds		
Anchor worms (*Lernaea* spp.) Fishlice (*Argulus* spp.) Gill flukes (*Cleidodiscus* spp. *Dactylogyrus* spp. *Gyrodactylus* spp.)	0.25 ppm (SP)	Apply to ponds containing bait fish and goldfish. Dissolve in water and distribute uniformly over the water surface to be treated. Apply with a sprinkling can, low pressure sprayer or by metering into the wake of a power boat. Best results will be obtained with a crisscross pattern covering the entire surface area. For maximum control of anchor worms and fishlice make 4 applications at weekly intervals. A single application will normally control gill flukes. For maximum control of these pests treat ponds before the water temperature at the 2-foot level reaches 85°F. Do not use in streams. Do not apply to ponds containing fish intended for human food. Do not apply to ponds used as a source of drinking water for humans or animals.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS

Good sanitation is a necessary part of any house fly control program.
Do not contaminate food, drinking water or utensils.
Do not allow children or pets in treated areas until sprayed surfaces are dry.
Apply baits in areas inaccessible to children and pets. Trichlorfon dry and liquid baits may be applied daily, if needed, until flies are controlled.

Domestic dwellings
(indoors)

Bed bug	40 g./gal. water(SP)	For use by pest control operators only. Apply as a coarse spray or brush onto baseboards, cracks, and crevices. Treat beds including a light application to tufts and seams of mattresses. Do not soak mattresses. Treated mattresses should be aired for at least 8 hours or until dry. Do not treat infant bedding or cribs.
Cockroaches Crickets	40 g./gal. water(SP)	For use by pest control operators only. Spot treatment. Apply as a coarse spray at the rate of one gallon per 750 square feet or brush onto baseboards, cracks, crevices and other areas where pests hide or congregate. SP may also be mixed with sugar and used as a 0.46% dry bait against cockroaches.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Domestic dwellings (continued) (indoors)		
Cockroaches (continued) Crickets	0.92%(bait)	Dry bait. Place small amounts behind sinks, refrigerators, stoves, and cabinets where pests hide or congregate. Any bait visible after application should be carefully brushed into cracks and crevices or removed.
Silverfish	40 g./gal. water(SP)	For use by pest control operators only. Spot treatment. Refer to previous cockroach entry.
Outdoor Areas		
Cockroaches	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Apply where pests breed or congregate. For faster results apply to a moistened surface.
	0.25 lb. 1%/gal. water (bait)	Liquid bait. Spot treatment. Mix with one pound of sugar or 2 cups of corn syrup. Sprinkle where pests congregate.
	1%(bait)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush onto vertical surfaces where pests congregate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Outdoor Areas (continued)		
Earwigs	1.0 lb. 1%/500 sq.ft. (bait)	Apply in late afternoon. Sprinkle around porches, doors and other entrances to homes. Apply to ground and grass around foundations of homes and along sidewalks and driveways. Repeat in 2 weeks if needed.
House fly	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Refer to previous cockroach entry.
	0.25 lb. 1%/gal. water (bait)	Liquid bait. Refer to previous cockroach entry.
	1%(bait)	Syrup bait. Refer to previous cockroach entry.
	1%(bait)	Bait block. Dip 2 ounce block in water then attach under garbage can lids or hang where flies congregate.
	0.25%(bait)	Bait block. Distribute 2.5 ounce blocks where flies congregate. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
	40 g./gal. water(SP)	For use by pest control operators only. Apply as a coarse spray at the rate of one gallon per 750 square feet or brush onto selected surfaces where flies congregate. Mix spray with one pound of sugar per gallon for longer residual control. On manure piles and garbage dumps apply at the rate of 2 quarts per 100 square feet. Repeat at 1- to 2-week intervals as needed.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

URBAN AND RURAL OUTDOOR AREAS (PUBLIC HEALTH)

Refer to Recreation Areas under:

FOREST, NONAGRICULTURAL AND WASTELANDS

COMMERCIAL ESTABLISHMENTS

Good sanitation is a necessary part of any house fly control program. Baits may be used in edible product areas. Do not use other formulations in edible product areas of food processing plants, restaurants or other areas where food is commercially prepared or processed.
Do not use in serving areas while food is exposed.
Apply baits in areas inaccessible to children and animals.

(Edible Product Areas)

Poultry packing plants Red meat packing plants		For use in Federally inspected plants. Use only when the facility is not in operation and food is not exposed. Use only in bait boxes where bait in each box can be accounted for. Remove and account for all bait boxes prior to resuming food processing.
Cockroaches House fly	0.25 lb. 1%/1,000 sq. ft.(bait)	Dry bait.
	1.0 lb. 1%/gal. water(bait)	Liquid bait. Mix with one pound of sugar or 2 cups of corn syrup.
	1%(bait)	Syrup bait. Mix in enough water to make a syrup.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

(Areas Other Than Edible Product Areas)

Do not treat cannery waste which may be fed to livestock.
Do not contaminate feed, food, water or food processing equipment.
Refer also to sites, pests and limitations under DOMESTIC DWELLINGS, MEDICAL FACILITES AND SCHOOLS.

Indoor Areas

Place small quantities of bait on pieces of paper carboard or in jar lids in locations inaccessible to children and animals. Place baits where dead or dying insects cannot fall into food, utensils or drinking water.
Wet dry bait slightly for increased killing efficiency.

Cockroaches House fly	1%(bait)	Dry bait.

Indoor Areas
Outdoor Areas

House fly	40 g./gal. water(SP)	For use by pest control operators only. Spot treatment. Not for use in dwellings. Apply as a coarse spray at the rate of one gallon per 750 square feet or brush onto selected surfaces where flies congregate. Treat only when animals and humans are absent. Do not allow them to return until treated surfaces are dry. Apply to garbage piles at the rate of 2 quarts per 100 square feet. Mix spray with one pound of sugar per gallon for longer residual control. Repeat at 1- to 2-week intervals as needed.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL) PHOSPHONATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Outdoor Areas		
House fly	0.25-0.5 lb. 1%/1,000 sq. ft.(bait)	Dry bait. Scatter on ground where flies congregate.
	0.5 lb. 0.25-0.5%/1,000 sq.ft.(bait)	Dry bait. Scatter on ground where flies congregate. Formulated with 2,2-dichlorovinyl dimethyl phosphate.

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE ESTER OF BUTYRIC ACID*

PRINCIPAL FORMULATION: EC

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	

LIVESTOCK AND POULTRY

** This chemical is also classified as a drug for use against certain internal parasites. These uses are not included here as they are under the purview of the Federal Food, Drug, and Cosmetic Act administered by the Food and Drug Administration, Department of Health, Education, and Welfare.

(Livestock Not Intended for Slaughter)

Horses	Federal law restricts this drug to use by or on the order of a licensed veterinarian. Do not use in horses intended for food. Do not use on foals (sucklings and young weanlings). Do not mix in advance of treatment and store for future use. Fasting of horses prior to or after treatment is unnecessary. Horses severely debilitated, suffering from diarrhea or severe constipation, infectious disease, toxemia or colic should not be treated until such conditions are corrected with proper therapy. This chemical is a cholinesterase inhibitor. Do not use in horses simultaneously or within a few days before or after treatment with or exposure to cholinesterase inhibiting drugs, pesticides or chemicals.

*butonate

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE
ESTER OF BUTYRIC ACID

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Horses (continued)		
Horse bot fly (larvae) Throat bot fly (larvae)	1.0 fl. oz. of 13% conc./200 lb. body weight(EC)	For the removal and control of pests listed. Emulsify the correct amount of concentrate in a convenient amount of water (0.5-2.0 pints) and administer via stomach tube only.

**

4,6-DINITRO-*o*-CRESOL, SODIUM SALT*

PRINCIPAL FORMULATION: S

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Apples		NF.
Apple aphid Apple grain aphid Rosy apple aphid	0.61-0.81/100 gal. water or 3.6-4.8/A.(S)	For dormant application only. Apply as a fog spray with at least 275 psi.
Eyespotted bud moth Oystershell scale Scurfy scale	0.81/100 gal. water or 4.8/A.(S)	For dormant application only. Apply as a fog spray with at least 275 psi.

*sodium 4,6-dinitro-*o*-cresylate; DNOC, sodium salt

2,4-DINITRO-6-OCTYL*PHENYL CROTONATE;2,6-DINITRO-4-OCTYL*PHENYL CROTONATE; NITROOCTYLPHENOLS (PRINCIPALLY DINITRO)**
*(a mixture of 1-methylheptyl;1-ethylhexyl and 1-propylpentyl isomers)

PRINCIPAL FORMULATIONS: EC, WP, D

TYPE PESTICIDE: Acaricide

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Apples		0.1 ppm (interim). 21 day preharvest interval through 2.0 lb./A. Foliage application. Do not graze livestock in treated orchards or feed cover crops from treated orchards to livestock.
Clover mite European red mite Twospotted spider mite	0.8-2.0/A.(EC), 0.8-1.2/A.(WP)	Foliage application. Claim for WP is limited to aid in suppression of populations. Do not use EC with oil or oil-based pesticides or apply it to foliage within 30 days after an oil spray application. Repeat at 7- to 10-day intervals.
Apples (non-bearing or nursery stock)		NF. Apply only to nursery trees or to young trees which will not bear fruit within one year.
Clover mite Spider mites	0.12/100 gal. water(EC)	Foliage application. Repeat at 7- to 10-day intervals.
Apricots		0.1 ppm (interim). 45 day preharvest interval through 1.0 lb./A. Foliage application. Do not graze livestock in treated orchards or feed cover crops from treated orchards to livestock.
Clover mite European red mite Peach silver mite Plum rust mite Twospotted spider mite	0.6-1.0/A.(EC)	Foliage application. Repeat at 7- to 10-day intervals.

** dinocap; Karathane

DINOSEB, TRIETHANOLAMINE SALT*

PRINCIPAL FORMULATION: liquid

TYPE PESTICIDES Insecticide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Alfalfa (seed crop)		NF. Do not feed treated plant residue to livestock or graze livestock in treated fields.
Mites (including clover mite pacific spider mite strawberry spider mite twospotted spider mite)	0.5-1.0/A. (liquid)	Foliage application. Apply diluted in water after first cutting when the first bloom starts to show. Make sure of adequate soil moisture before application and irrigate about 72 hours after treatment.
Almonds		NF.
Mites (including brown mite European red mite) Peach twig borer Scales	1.0/100 gal. water(liquid)	For dormant application only.
Apples		NF.
Apple aphid Apple grain aphid Rosy apple aphid	0.5/100 gal. water or 4.0/A.(liquid)	For spring dormant application only.

*2-*sec*-butyl-4,6-dinitrophenyl, triethanolamine salt;
4,6-dinitro-*o*-*sec*-butylphenol, triethanolamine salt;
DNBP, triethanolamine salt

DINOSEB, TRIETHANOLAMINE SALT

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
Brown mite European red mite Eyespotted bud moth Leaf crumpler Oystershell scale San Jose scale Scurfy scale	1.0-1.5/100 gal. water or 4.0/A. (liquid)	For early dormant application. A delayed dormant application may also be made. Use higher dosage for severe infestations or for reduced-volume sprays.
Cherries		NF.
Black cherry aphid	0.5/100 gal. water (liquid)	For dormant application only.
Brown mite California casebearer Cherry casebearer European red mite Eyespotted bud moth Leaf crumpler	1.0/100 gal. water (liquid)	For dormant application only.
Clover, landino (seed crop)		NF. Do not feed treated plant residue to livestock or graze livestock in treated fields.
Mites (including clover mite pacific spider mite strawberry spider mite twospotted spider mite)	0.5-1.0/A. (liquid)	Foliage application. Apply diluted in water after first cutting when the first bloom starts to show. Make sure of adequate soil moisture before application and irrigate about 72 hours after treatment.
Currants		NF.
Currant aphid	0.5/100 gal. water (liquid)	For dormant application only.
Aphids San Jose scale	1.0/100 gal. water (liquid)	For dormant application only.

DINOSEB, TRIETHANOLAMINE SALT

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears		NF.
Brown mite European red mite Leaf crumpler Pear psylla (eggs)	1.0/100 gal. water or 4.0/A.(liquid)	For dormant application only. For pear psylla, apply as a delayed dormant or early green tip application, preferably after egg-laying has progressed considerably. Applications later than early green tip stage may injure buds.
Pecans		NF.
Obscure scale Pecan nut casebearer Pecan phylloxera	1.0/100 gal. water(liquid)	Apply in early spring when trees are strictly dormant.
Plums Prunes (excluding Japanese varieties)		NF.
Green peach aphid Mealy plum aphid Plum leafcurl aphid	0.5/100 gal. water(liquid)	For dormant application only.
Brown mite Brown soft scale California casebearer European fruit lecanium European red mite Eyespotted bud moth Leaf crumpler Peach twig borer San Jose scale	1.0/100 gal. water(liquid)	For dormant application only.
Walnuts		NF.
Calico scale Frosted scale Oystershell scale Walnut scale	1.0-1.5/100 gal. water or 6.6-10/A.(liquid)	For dormant application only. Use higher dosage for severe infestations.

2,4-DINITRO-6-OCTYL*PHENYL CROTONATE;2,6-DINITRO-4-OCTYL*PHENYL CROTONATE;
NITROOCTYLPHENOLS (PRINCIPALLY DINITRO)
*(a mixture of 1-methylheptyl;1-ethylhexyl and 1-propylpentyl isomers)

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cherries (non-bearing or nursery stock)		NF. Apply only to nursery trees or to young trees which will not bear fruit within one year.
Clover mite Spider mites	0.12/100 gal. water(EC)	Foliage application. Repeat at 7- to 10-day intervals.
Citrus (non-bearing or nursery stock)		NF. Apply only to nursery trees or to young trees which will not bear fruit within one year.
Citrus red mite	0.12-0.37/100 gal. water(EC)	Foliage application. Apply once when adult mites appear, and repeat once 10 to 14 days later.
Cucumbers		0.1 ppm (interim). 7 day preharvest interval through 0.37 lb./A. Foliage application.
Mites	0.12-0.37/A.(EC)	Foliage application. Repeat at 7- to 10-day intervals.
Grapes		0.1 ppm (interim). 21 day preharvest interval through 0.75 lb./A. Foliage application.
Mites	0.25-0.75/A. (EC)	Do not use in California. Foliage application. Repeat at 7- to 10-day intervals.
Melons		0.1 ppm (interim). 7 day preharvest interval through 0.37 lb./A. Foliage application.
Mites	0.12-0.37/A.(EC)	Foliage application. Repeat at 7- to 10-day intervals.

2,4-DINITRO-6-OCTYL*PHENYL CROTONATE;2,6-DINITRO-4-OCTYL*PHENYL CROTONATE;
NITROOCTYLPHENOLS (PRINCIPALLY DINITRO)
*(a mixture of 1-methylheptyl;1-ethylhexyl and 1-propylpentyl isomers)

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peaches		0.1 ppm (interim). 45 day preharvest interval through 1.0 lb./A. Foliage application. Do not graze livestock in treated orchards or feed cover crops from treated orchards to livestock.
Clover mite European red mite Peach silver mite Plum rust mite Twospotted spider mite	0.6-1.0/A.(EC)	Foliage application. Repeat at 7- to 10-day intervals.
Peaches (non-bearing or nursery stock)		NF. Apply only to nursery trees or to young trees which will not bear fruit for one year.
Clover mite Spider mites	0.12/A.(EC)	Foliage application. Repeat at 7- to 10-day intervals.
Pears		0.1 ppm (interim). 21 day preharvest interval through 2.0 lb./A. Foliage application. Do not graze livestock in treated orchards or feed cover crops from treated orchards to livestock.
Clover mite European red mite Twospotted spider mite	0.8-2.0/A.(EC), 0.8-1.2/A.(WP)	Foliage application. Claim for WP is limited to aid in suppression of populations. Do not use EC with oil or oil-based pesticides or apply it to foliage within 30 days after an oil spray application. Repeat at 7- to 10-day intervals.
Pumpkins Squash		0.1 ppm (interim). 7 day preharvest interval through 0.37 lb./A. Foliage application.
Mites	0.12-0.37/A.(EC)	Foliage application. Repeat at 7- to 10-day intervals.

2,4-DINITRO-6-OCTYL*PHENYL CROTONATE;2,6-DINITRO-4-OCTYL*PHENYL CROTONATE;
NITROOCTYLPHENOLS (PRINCIPALLY DINITRO)
*(a mixture of 1-methylheptyl;1-ethylhexyl and 1-propylpentyl isomers)

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
ORNAMENTALS		
(Herbaceous Plants and Bulbs)		
African violets Asters Begonias Belladonnas Calendulas Chrysanthemums Dahlias Delphiniums Gerberas (Transvaal daisy) Larkspurs Snapdragons		
Clover mite Spider mites	0.1-0.13/100 gal. water(WP), 0.25-0.5/A.(D)	Foliage application. Do not apply when temperature reaches 95°F. A spreader-sticker may be added to the WP formulation. Repeat at 7- to 10-day intervals.
Cinerarias Zinnias		
Clover mite Spider mites	0.4-0.5/A.(D)	Foliage application. Do not apply when temperature reaches 95°F. Repeat at 7- to 10-day intervals.
(Woody Shrubs, Trees and Vines)		
Eunonymus		
Clover mite Spider mites	0.1-0.13/100 gal. water(WP), 0.4-0.5/A.(D)	Foliage application. Do not apply when temperature reaches 95°F. A spreader-sticker may be added to the WP formulation. Repeat at 7- to 10-day intervals.

2,4-DINITRO-6-OCTYL*PHENYL CROTONATE;2,6-DINITRO-4-OCTYL*PHENYL CROTONATE;
NITROOCTYLPHENOLS (PRINCIPALLY DINITRO)
*(a mixture of 1-methylheptyl;1-ethylhexyl and 1-propylpentyl isomers)

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Hydrangeas Lilacs		
Clover mite Spider mites	0.1-0.13/100 gal. water(WP), 0.25-0.5/A.(D)	Refer to directions above for Eunonymus.
Roses (including multiflora rose)		
Clover mite	0.25-0.45/A.(D)	Foliage application. Do not apply when temperature reaches 95°F. Repeat at 7- to 10-day intervals.
Spider mites	0.1-0.13/100 gal. water(WP), 0.25-0.45/A.(D)	Refer to directions above for Eunonymus.
Shrubs Trees Woody nursery stock		
Clover mite Spider mites	0.25-0.45/A.(D)	Foliage application. Do not apply when temperature reaches 95°F. Repeat at 7- to 10-day intervals.

2,4-DINITRO-6-OCTYL*PHENYL CROTONATE;2,6-DINITRO-4-OCTYL*PHENYL CROTONATE;
NITROOCTYLPHENOLS (PRINCIPALLY DINITRO)
*(a mixture of 1-methylheptyl;1-ethylhexyl and 1-propylpentyl isomers)

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
(Greenhouse Plants)		
African violets Asters Begonias Belladonnas Calendulas Chrysanthemums Dahlias Delphiniums Gerberas (Transvaal daisey) Hydrangeas Larkspurs Roses Snapdragons		
Clover mite Spider mites	0.05-0.07/100 gal. water(WP)	Foliage application. Repeat at 7- to 10-day intervals. For roses, apply with care when temperature approaches 85°F., and do not apply when it reaches 90°F. A spreader-sticker may be added.

DIOXATHION*

PRINCIPAL FORMULATION: EC

TYPE PESTICIDE: Insecticide, Acaricide

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Apples		4.9 ppm. 7 day preharvest interval through 6.0 lb./A. Foliage application. Do not apply more than 7 times after fruit starts to form. Do not feed pomace from treated fruit to meat or dairy animals. Do not feed or graze cover crops grown in treated orchards.
Apple maggot	0.25-0.5/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.
Codling moth	0.5/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Apricots		0.14 ppm. Do not apply after fruit begins to form through 4.0 lb./A. Foliage application. Do not feed or graze cover crops grown in treated orchards.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.

*2,3-*p*-dioxanedithiol S,S-bis(O,O-diethyl phosphorodithioate); Delnav

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cherries		0.14 ppm. Do not apply after fruit begins to form through 4.0 lb./A. Foliage application. Do not feed or graze cover crops grown in treated orchards.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.
Grapes		2.1 ppm. 14 day preharvest interval through 0.75 lb./A. Foliage application. 30 day preharvest interval above 0.75 lb. through 1.0 lb./A. Foliage application. Do not apply rates through 0.75 lb./A. more than twice after grape fruit stems or grapes have begun to form. Do not apply rates above 0.75 lb./A. more than once after berries begin to form. Do not feed or graze cover crops grown in treated vineyards.
Grape leafhoppers Mites	0.5-1.0/A.(EC)	Foliage application. Apply in 15-100 gallons for concentrate spray equipment, or 100-250 gallons of water for conventional spray equipment.
Grapefruit		2.8 ppm. No preharvest interval through 10.0 lb./A. Foliage application. Do not repeat application within 3 months if fruit is present during the first application. Do not feed or graze cover crops grown in treated orchards.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit (continued)		
Citrus red mite Citrus rust mite Citrus thrips Sixspotted mite Texas citrus mite Yuma spider mite	0.25-0.5/100 gal. water or 1.25-10/A.(EC)	Foliage application. For high-gallonage applications (500-2,000 gallons of spray per acre). One application will usually control mite infestations.
	2.5-8.0/A.(EC)	Foliage application. For aerial application, apply in 15-30 gallons of water. For concentrate spray equipment, apply in 20-125 gallons of water. For semiconcentrate spray equipment, apply in 125-300 gallons of water.
Lemons Limes		2.8 ppm. No preharvest interval through 10.0 lb./A. Foliage application. Do not apply more than twice per year. Do not make second application within 4 months of the first application. Do not feed or graze cover crops grown in treated orchards.
Citrus red mite Citrus rust mite Citrus thrips Sixspotted mite Texas citrus mite Yuma spider mite	0.25-0.5/100 gal. water or 1.25-10/A.(EC)	Foliage application. For high-gallonage applications (500-2,000 gallons of spray per acre). One application will usually control mite infestations.
	2.5-8.0/A.(EC)	Foliage application. For aerial application, apply in 15-30 gallons of water. For concentrate spray equipment, apply in 20-125 gallons of water. For semiconcentrate spray equipment, apply in 125-300 gallons of water.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges		2.8 ppm. No preharvest interval through 10.0 lb./A. Foliage application. Do not repeat application within 3 months if fruit is present during the first application. Do not feed or graze cover crops grown in treated orchards.
Citrus red mite Citrus rust mite Citrus thrips Sixspotted mite Texas citrus mite Yuma spider mite	0.25-0.5/100 gal. water or 1.25-10/A.(EC)	Foliage application. For high-gallonage applications (500-2,000 gallons of spray per acre). One application will usually control mite infestations.
	2.5-8.0/A.(EC)	Foliage application. For aerial application, apply in 15-30 gallons of water. For concentrate spray equipment, apply in 20-125 gallons of water. For semiconcentrate spray equipment, apply in 125-300 gallons of water.
Peaches		0.14 ppm. Do not apply after fruit begins to form through 4.0 lb./A. Foliage application. Do not feed or graze cover crops grown in treated orchards.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.
Pears		4.9 ppm. 7 day preharvest interval through 6.0 lb./A. Foliage application. Do not apply more than 7 times after fruit starts to form. Do not feed pomace from treated fruit to meat or dairy animals. Do not feed or graze cover crops grown in treated orchards.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears (continued)		
Apple maggot	0.25-0.5/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.
Codling moth	0.5/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Plums Prunes		0.14 ppm. Do not apply after fruit begins to form through 4.0 lb./A. Foliage application. Do not feed or graze cover crops grown in treated orchards.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.
Quince		4.9 ppm. 7 day preharvest interval through 6.0 lb./A. Foliage application. Do not apply more than 7 times after fruit starts to form. Do not feed pomace from treated fruit to meat or dairy animals. Do not feed or graze cover crops grown in treated orchards.
Apple maggot	0.25-0.5/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Mites	0.38-0.5/100 gal. water(EC)	Foliage application.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Quince (continued)		
Codling moth	0.5/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
Tangelos Tangerines		2.8 ppm. No preharvest interval through 10.0 lb./A. Foliage application. Do not repeat application within 3 months if fruit is present during the first application. Do not feed or graze cover crops grown in treated orchards.
Citrus red mite Citrus rust mite Citrus thrips Sixspotted mite Texas citrus mite Yuma spider mite	0.25-0.5/100 gal. water or 1.25-10/A.(EC)	Foliage application. For high-gallonage applications (500-2,000 gallons of spray per acre). One application will usually control mite infestations.
	2.5-8.0/A.(EC)	Foliage application. For aerial application, apply in 15-30 gallons of water. For concentrate spray equipment, apply in 20-125 gallons of water. For semiconcentrate spray equipment, apply in 125-300 gallons of water.
Walnuts		0.14 ppm. Do not apply after husks split through 4.0 lb./A. Foliage application. Do not feed or graze cover crops grown in treated orchards.
Mites	0.5-1.0/100 gal. water or 2.0-4.0/A.(EC)	Foliage application.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
LIVESTOCK AND POULTRY		
(Livestock Intended for Slaughter)		
Cattle (beef)		1.0 ppm. (fat). No preslaughter interval. Do not dip animals under 3 months of age. Do not repeat dip or spray application within 14 days. Do not repeat pour-on application within 30 days. Do not apply to dairy animals or in dairy barns.
** Horn fly Lice Ticks (including cattle tick ear tick Gulf Coast tick lone star tick winter tick)	1.0 gal. 29-30% solution/200 gal. water, 1.0 gal. 15-17% solution/100 gal. water (EC)	Apply as a dip or spray. Thoroughly wet the skin by careful dipping or use of a strong spray. Prior to treatment, water animals well to prevent drinking of vat fluid or runoff. Hand dip young animals. Apply two quarts of spray mixture per adult animal and proportionately less on smaller animals. Do not spray animals confined in closed buildings. For ear tick and Gulf Coast tick, apply with low pressure to ears and head, neck, and shoulder regions. For Horn fly, repeat at 2- to 3-week intervals. For lice and ticks, repeat as needed.
** (Screwworm) (maggots)	1.0 gal. 29-30% solution/200 gal. water(EC)	Apply as a dip or spray. Refer to directions above under Horn fly. Claims limited to aids in the control of screwworm larvae.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle (continued)		
Horn fly	1.0 qt. 30% solution/ 9.5-2.5 gal. water, 1.0 qt. 15% solution/ 4.75 gal. water(EC)	Pour-on treatment. Apply one quart of the mixture along the back line of the animal. A spreader-sticker may be added to the mixture.
Horn fly Lice	1.0 qt. 26-30% solution/ 18-19 qt. oil, 1.0 qt. 15% solution/9 qt. oil(EC)	Back rubber device or soak sack. Fuel oil, diesel fuel or light motor oil may be used. Do not apply oil mixtures directly to animals. Recharge device as needed.
	1.0 qt. 17% solution/10.5 qt. oil(EC)	Back rubber device or soak sack. Use No. 2 fuel oil. Recharge device as needed.
Goats		
Refer to Sheep		
Hogs		1.0 ppm. (fat). No preslaughter interval. Do not dip animals under 3 months of age. Do not treat sows within 2 weeks of farrowing or while nursing. Do not repeat application within 2 weeks.
** Lice (including hog louse) Ticks	1.0 gal. 29-30% solution/200 gal. water, 2.0 gal. 15% solution/200 gal. water(EC)	Apply as a dip or spray. Thoroughly wet the skin by careful dipping or use of a strong spray. A single application will usually control lice infestations.

	Site and Pest	Dosage	Tolerance, Use, Limitations
		actual	
	Hogs (continued)		
**	(Screwworm) (maggots)	1.0 gal. 29-30% solution/200 gal. water(EC)	Apply as a dip or spray. Refer to directions above for Lice. Claims limited to aids in the control of screwworm larvae.
	Ear tick Gulf Coast tick Lice Lone star tick	2.0 gal. 17% solution/200 gal. water (EC)	Apply as spray. Thoroughly wet the skin. Do not spray animals confined in closed buildings.
	Sheep Goats		1.0 ppm. (fat). No preslaughter interval. Do not dip animals under 3 months of age. Do not repeat application within 2 weeks. Do not apply to dairy animals.
**	Lice (including goat lice sheep lice) Sheep ked Ticks Wool maggots	1.0 gal. 29-30% solution/200 gal. water, 2.0 gal. 15% solution/200 gal. water (EC)	Apply as a dip or spray. Thoroughly wet animals. Prior to treatment, water animals well to prevent drinking of vat fluid or runoff. Hand dip young animals. A single application will usually control ked and lice infestations. For biting lice on goats a second application 21 days later may be required for complete control.

DIOXATHION

	Site and Pest	Dosage	Tolerance, Use, Limitations
		actual	
	Sheep (continued) Goats		
**	(Screwworm) (maggots)	1.0 gal. 29-30% solution/200 gal. water(EC)	Apply as a spray or dip. Refer to directions above under Lice. Claims are limited to aids in the control of screwworm larvae.
	Ear tick Gulf Coast tick Lice Lone star tick Sheep ked	2.0 gal. 17% solution/200 gal. water (EC)	Apply as a dip or spray. Wet animals thoroughly. Use low pressure spray after spring shearing, and high pressure spray during fall treatment. Do not spray animals confined in closed buildings.
	(Livestock Not Intended for Slaughter)		
	Horses		
**	Horn fly Lice Ticks (including cattle tick ear tick Gulf Coast tick lone star tick winter tick)	1.0 gal. 29-30% solution/200 gal. water, 2.0 gal. 15% solution/200 gal. water (EC)	Apply as a dip or spray. Thoroughly wet the skin by careful dipping or use of a strong spray. Prior to treatment, water animals well to prevent drinking of vat fluid or runoff. Hand dip young animals. Apply two quarts of spray mixture per adult animal and proportionately less on smaller animals. Do not spray animals confined in closed buildings. For ear ticks and Gulf Coast ticks, apply with low pressure to ears and head, neck, and shoulder regions. For horn fly, repeat at 2- to 3-week intervals. For lice and ticks, repeat as needed.

DIOXATHION

	Site and Pest	Dosage	Tolerance, Use, Limitations
		actual	
	HUMANS, PETS AND OTHER ANIMALS		
	Dogs		
	Fleas Lice Ticks	1.0 tbsp. (0.5 fl.oz.) 29-30% solution/ 1.0 gal. water(EC)	For use by veterinarians only. Sponge, swab, bathe or dip animal until it is thoroughly wet. Repeat only as needed, and not more frequently than once a week.
	Dog houses Dog runs Kennels		
**	Fleas Lice Ticks (including brown dog tick)	1.0 gal. 29-30% solution/ 51-60 gal. water, 1.0 gal. 25% solution/50 gal. water, 1.0 gal. 15% solution/30 gal. water(EC)	Spray infested areas, including cracks, debris and other hiding places, at a rate of one gallon of spray mixture per 1,000 sq.ft. Do not use for flea control in the home. Do not apply directly to animals or bedding. Do not allow animals to enter treated area until it is completely dry.
	ORNAMENTALS		
	(Lawns and Turf)		
	Lawns		
**	Fleas Lice Ticks (including brown dog tick)	1.0 gal. 29-30% solution/ 51-60 gal. water, 1.0 gal. 25% solution/50 gal. water, 1.0 gal. 15% solution/30 gal. water(EC)	Spray infested lawns and other outdoor areas, including debris and other hiding places, at a rate of 1.0-3.0 gallons of spray mixture/1,000 sq.ft. Do not apply directly to animals or bedding. Do not allow children or animals on the area treated until the chemical is washed into the soil and the area is completely dry.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Herbaceous Plants and Bulbs)		
Do not pick, transplant, or otherwise handle plants for 24 hours following treatment.		
African violet Anthurium Carnation Chrysanthemum Dahlia Dichorisandra Episcia Fern Gladiolus Orchid Peperomia Philodendron Seersucker plant Staghorn fern		
Twospotted spider mite	0.5 lb./100 gal. water (EC)	Foliage application. A second application may be made one week later if needed.
(Woody Shrubs, Trees and Vines)		
Do not pick, transplant, or otherwise handle plants for 24 hours following treatment.		
Aralia Chinese evergreen Crotons		
Twospotted spider mite	0.5 lb./100 gal. water (EC)	Foliage application. A second application may be made one week later if needed.
Hillbush juniper Podocarpus		
Spruce spider mite	0.5 lb./100 gal. water (EC)	Foliage application. A second application may be made one week later if needed.

DIOXATHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Roses		
Clover mite European red mite Twospotted spider mite	0.5 lb./100 gal. water (EC)	Foliage application. A second application may be made one week later if needed.
DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS		
Homes		
Clover mites Ticks (including brown dog tick)	1.0 gal. 30% solution/60 gal. water, 1.0 gal. 25% solution/50 gal. water (EC)	Spray infested areas in the home. Oil may be used in place of water if the concentrate is decanted or filtered prior to mixing. Cover or remove aquaria in areas to be treated. Do not apply directly to animals.

DIPHENYLAMINE

PRINCIPAL FORMULATIONS: L, Pr, smear

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
LIVESTOCK AND POULTRY		
(Livestock Not Intended for Slaughter)		
For external use only. Avoid contact with eyes and mucous membranes. Not effective against resistant populations of screwworm. Do not use on horses or mules intended for slaughter. Do not use on dairy or meat producing animals, household pets or humans.		
Horses		
Screwworm	35.0% (smear)	Apply with a brush or swab. Work well into the pockets of wounds and paint surfaces around wounds, particularly those areas covered with blood or wound secretions. Apply daily for the first 2 or 3 days and then repeat twice weekly until wounds are healed. Formulated with benzene, and sulfonated castor oil (turkey red oil).
Screwworm Wound maggots (including black blow fly, greenbottle fly, secondary screwworm)	23.07% (L)	Squirt directly onto wounds, covering area completely. Formulated with benzene, bone oil and mineral oil.

DIPHENYLAMINE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Horses (continued)		
Screwworm (continued) Wound maggots (including black blow fly, greenbottle fly, secondary screwworm)	5.0-15.0% (smear)	Apply to wounds with a brush or paddle. Apply daily for the first 2 or 3 days and then repeat twice weekly until wounds are healed. Formulated with either benzyl alcohol, O-benzyl-p-chlorophenol, butoxypolypropylene glycol, castor oil, pine oil, pine tar oil, and urea, or bone oil, lindane, pine tar, phenol, zinc oxide.
	17.24% (Pr)	Hold can upright, 4-6 inches from the affected area. Spray directly into superficial wounds and treat the area an inch or two around wounds to prevent further infestation. Formulated with benzene, bone oil and mineral oil.
Mules		
Screwworm	35.0% (smear)	Apply with a brush or swab. Work well into the pockets of wounds and paint surfaces around wounds, particularly those areas covered with blood or wound secretions. Apply daily for the first 2 or 3 days and then repeat twice weekly until wounds are healed. Formulated with benzene and sulfonated castor oil (turkey red oil).

DIPROPYL ISOCINCHOMERONATE*

PRINCIPAL FORMULATIONS: EC; L; D (All formulations usually in combination with other ingredients.)

TYPE PESTICIDE: Insect Repellent

	USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
**	Animals:			
	Beef cattle Dairy cattle Goats Sheep Swine	0.1 (meat, fat and meat by-products of cattle, goats, hogs, horses, and sheep) 0.004 (milk)	2.0% (in oil)	Apply 2 ounces per animal daily as a mist spray. Do not wet the hide of animal.
			2.0% (in water)	Apply 1 quart per animal as often as necessary.
			0.2% (dust)	Formulated with other ingredients for use in a duster bag.
			2.0% (in oil)	Apply by rubbing devices. Formulated with other ingredients.
			0.4% (in oil)	Apply 1 ounce per animal to the face and head to repel face flies on cattle.
**	Agricultural premises:			
	Barns Feed rooms Hog pens Dairy barns Milk rooms (excluding poultry houses)	NF NF NF 0.1 (meat, fat and meat by-products of cattle) 0.004 (milk)	2.0% (in oil or water)	Apply to the point of run-off to all interior surfaces. Do not contaminate milk, milk handling equipment, feed, or drinking water. Formulated with other ingredients.
			0.4% (in oil)	Apply as a space spray. Keep room closed for 15 minutes. Do not contaminate milk, milk handling equipment, feed or drinking water. Formulated with other ingredients.

*Proprietary name: "MGK R-326"

DI-n-PROPYLMALEATE ISOSAFROLE CONDENSATE*

PRINCIPAL FORMULATIONS: Used with pyrethrins and/or other ingredients

TYPE PESTICIDE: Insecticide Synergist

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Bush and vine fruits:			
Blackberries	Exempt	0.5	No time limitations.
Blueberries	Exempt	0.5	No time limitations.
Boysenberries	Exempt	0.5	No time limitations.
Cranberries	Exempt	0.5	No time limitations.
Currants	Exempt	0.5	No time limitations.
Dewberries	Exempt	0.5	No time limitations.
Gooseberries	Exempt	0.5	No time limitations.
Grapes	Exempt	0.5	No time limitations.
Huckleberries	Exempt	0.5	No time limitations.
Loganberries	Exempt	0.5	No time limitations.
Raspberries	Exempt	0.5	No time limitations.
Strawberries	Exempt	0.5	No time limitations.
Youngberries	Exempt	0.5	No time limitations.
Citrus:			
Grapefruit	Exempt	2.0	No time limitations.
Kumquat	Exempt	2.0	No time limitations.
Lemons	Exempt	2.0	No time limitations.
Limes	Exempt	2.0	No time limitations.
Oranges	Exempt	2.0	No time limitations.
Tangelos	Exempt	2.0	No time limitations.
Tangerines	Exempt	2.0	No time limitations.
Deciduous fruits and nuts:			
Almonds	Exempt	1.5	No time limitations.
Apples	Exempt	1.5	No time limitations.
Apricots	Exempt	1.5	No time limitations.
Cashews	Exempt	1.5	No time limitations.
Cherries	Exempt	1.5	No time limitations.
Chestnuts	Exempt	1.5	No time limitations.
Dates	Exempt	1.5	No time limitations.
Figs	Exempt	1.5	No time limitations.
Filberts	Exempt	1.5	No time limitations.
Hazelnuts	Exempt	1.5	No time limitations.

*Proprietary name: "n-Propyl isome"

DI-n-PROPYLMALEATE ISOSAFROLE CONDENSATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Deciduous fruits and nuts: (continued)			
Hickory nuts	Exempt	1.5	No time limitations.
Nectarines	Exempt	1.5	No time limitations.
Olives	Exempt	1.5	No time limitations.
Peaches	Exempt	1.5	No time limitations.
Pears	Exempt	1.5	No time limitations.
Pecans	Exempt	1.5	No time limitations.
Persimmons	Exempt	1.5	No time limitations.
Plums	Exempt	1.5	No time limitations.
Pomegranate	Exempt	1.5	No time limitations.
Prunes	Exempt	1.5	No time limitations.
Quinces	Exempt	1.5	No time limitations.
Walnuts	Exempt	1.5	No time limitations.
Field, fiber and forage crops:			
Alfalfa	Exempt	0.25	No time limitations.
Barley	Exempt	0.25	No time limitations.
Birdsfoot trefoil	Exempt	0.25	No time limitations.
Buckwheat	Exempt	0.25	No time limitations.
Clover	Exempt	0.25	No time limitations.
Corn	Exempt	0.25	No time limitations.
Cotton	Exempt	0.25	No time limitations.
Flax	Exempt	0.25	No time limitations.
Grasses	Exempt	0.25	No time limitations.
Hops	Exempt	0.25	No time limitations.
Lespedeza	Exempt	0.25	No time limitations.
Millet	Exempt	0.25	No time limitations.
Milo	Exempt	0.25	No time limitations.
Oats	Exempt	0.25	No time limitations.
Pasture grass	Exempt	0.25	No time limitations.
Peanuts	Exempt	0.25	No time limitations.
Popcorn	Exempt	0.25	No time limitations.
Rice	Exempt	0.25	No time limitations.
Rye	Exempt	0.25	No time limitations.
Safflower	Exempt	0.25	No time limitations.
Sorghum	Exempt	0.25	No time limitations.
Soybeans	Exempt	0.25	No time limitations.
Sugar beets	Exempt	0.25	No time limitations.
Sugarcane	Exempt	0.25	No time limitations.

DI-n-PROPYLMALEATE ISOSAFROLE CONDENSATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Field, fiber and forage crops: (continued)			
Vetch	Exempt	0.25	No time limitations.
Wheat	Exempt	0.25	No time limitations.
Vegetables:			
Asparagus	Exempt	0.2	No time limitations.
Beans	Exempt	0.2	No time limitations.
Beets	Exempt	0.2	No time limitations.
Blackeyed peas	Exempt	0.2	No time limitations.
Broccoli	Exempt	0.2	No time limitations.
Brussels sprouts	Exempt	0.2	No time limitations.
Cabbage	Exempt	0.2	No time limitations.
Cantaloupes	Exempt	0.2	No time limitations.
Carrots	Exempt	0.2	No time limitations.
Cauliflower	Exempt	0.2	No time limitations.
Celery	Exempt	0.2	No time limitations.
Collards	Exempt	0.2	No time limitations.
Corn	Exempt	0.2	No time limitations.
Cowpeas	Exempt	0.2	No time limitations.
Cucumbers	Exempt	0.2	No time limitations.
Eggplants	Exempt	0.2	No time limitations.
Endive	Exempt	0.2	No time limitations.
Garlic	Exempt	0.2	No time limitations.
Horseradish	Exempt	0.2	No time limitations.
Kale	Exempt	0.2	No time limitations.
Kohlrabi	Exempt	0.2	No time limitations.
Leeks	Exempt	0.2	No time limitations.
Lettuce	Exempt	0.2	No time limitations.
Melons	Exempt	0.2	No time limitations.
Mustard greens	Exempt	0.2	No time limitations.
Okra	Exempt	0.2	No time limitations.
Onions	Exempt	0.2	No time limitations.
Parsnips	Exempt	0.2	No time limitations.
Peas	Exempt	0.2	No time limitations.
Peppers	Exempt	0.2	No time limitations.
Pimentos	Exempt	0.2	No time limitations.
Potatoes	Exempt	0.2	No time limitations.
Pumpkins	Exempt	0.2	No time limitations.
Radishes	Exempt	0.2	No time limitations.

DI-n-PROPYLMALEATE ISOSAFROLE CONDENSATE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Vegetables: (continued)			
Rutabagas	Exempt	0.2	No time limitations.
Salsify	Exempt	0.2	No time limitations.
Shallots	Exempt	0.2	No time limitations.
Spinach	Exempt	0.2	No time limitations.
Squash (summer)	Exempt	0.2	No time limitations.
Squash (winter)	Exempt	0.2	No time limitations.
Sweetpotatoes	Exempt	0.2	No time limitations.
Swiss chard	Exempt	0.2	No time limitations.
Tomatoes	Exempt	0.2	No time limitations.
Turnips	Exempt	0.2	No time limitations.
Watermelons	Exempt	0.2	No time limitations.
Agricultural premises: Barns, Grain bins, Animal shelters, Others (excluding dairy barns, milk rooms, and poultry houses)	NF	2.0% (in oil, water, or pressurized sprays) 5.0% (dust)	Formulated with other ingredients. Do not contaminate milk, milk handling equipment, feed, or drinking water.

DISODIUM OCTABORATE TETRAHYDRATE

PRINCIPAL FORMULATION: powder

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL PREMISES AND EQUIPMENT		
(Poultry Houses and Yards)		
Poultry Houses (caged birds only)		
House fly (larvae) Latrine fly (larvae)	1.47-1.9/100 sq. ft. (powder)	Apply to manure bed beneath cages at first signs of larval activity and continue until droppings start to cone up and dry out. Spot treat where larval activity continues until manure beds are cleaned out. During fly breeding season, apply at same rate to clean poultry house floors.
(Outdoor Areas)		
Compost piles Garbage dumps Manure piles		
House fly (larvae) Latrine fly (larvae)	1.47-1.9/100 sq. ft. (powder)	Apply to surface. If surface is crusted, sprinkle down lightly with water to hasten results. Consult Cooperative Agricultural Extension Service prior to using treated compost and manure on crops.

DISODIUM OCTABORATE TETRAHYDRATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
HUMANS, PETS AND OTHER ANIMALS		
Dog kennels		
(Dog hookworm) (larvae)	1.47/gal. water/ 100 sq. ft. (powder)	For earthen or paved runs. Claim is limited to aid in controlling infestations. Apply when temperature exceeds 65°F. for 2 or 3 days or 77°F. for one day. Thoroughly wet paved runs or use specified rate for earthen runs. For earthen runs, repeat monthly for light soils and every two months for heavy soils. For paved runs, repeat at 2- or 3-day intervals if run is washed down daily, weekly otherwise. Do not use if areas are underlain with roots of valuable vegetation.
STRUCTURES, WOOD PRODUCTS AND WOOD COMMODITIES		
Lumber		
Furniture beetle Oldhouse borer Old world lyctus beetle Twotoothed longhorn beetle	1.9-3.75/gal. water(powder)	Dip freshly sawn green lumber 4 or 5 times in hot bath. Lumber should be close-stacked and covered after dipping to prevent drying. A diffusion period of 2-10 weeks is required depending on concentration and temperature of solution, and thickness of the lumber. Refer to manufacturer's instructions. Treatment is not for protection against termites, and should not be used for lumber which will have contact with the soil or be exposed to leaching by weather.

DISODIUM OCTABORATE TETRAHYDRATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
SPECIALIZED USES		
Garbage dumps Municipal dumps		
House fly (larvae) Latrine fly (larvae)	1.47-1.9/100 sq. ft.(powder)	Apply dosage dry or dissolved in one gallon of water. Repeat when larval activity is evident, or when additional garbage is deposited.

DODECACHLOROOCTAHYDRO-1,3,4-METHENO-1H-CYCLOBUTA [cd] PENTALENE*

PRINCIPAL FORMULATIONS: Bait

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Pasture and cropland	0.1 (in fat of meat from cattle, goats, hogs, horses, poultry and sheep) 0.1 (in eggs) 0.1 (in milk fat) 0.01 (in or on all raw agricultural commodities, exclusive of eggs, milk fat, and fat of animals)	3.4 grams actual per acre broadcast 0.02 grams actual per mound 4.1 grams actual/acre	Do not make more than three applications during any 12 month period. Do not apply more than once during any two month period. Mound treatment for imported fire ant and Western harvester ant. Broadcast treatment for imported fire ant. Do not make more than 3 applications in any 12 month period, nor more than one application in any 45 day period.

*Proprietary name: "Mirex"

Issued: 5-31-69

DORMANT OILS*

PRINCIPAL FORMULATIONS: EC

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Almonds	Exempt	96.0	Apply during dormancy when temperature is above 40°F.
Apples	Exempt	248.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Apricots	Exempt	140.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Blackberries	Exempt	30.0	Dormant application only.
Blueberries	Exempt	30.0	Dormant application only.
Boysenberries	Exempt	30.0	Dormant application only.
Cashews	Exempt	96.0	Apply during dormancy when temperature is above 40°F.
Cherries	Exempt	140.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Chestnuts	Exempt	96.0	Apply during dormancy when temperature is above 40°F.
Cranberries	Exempt	30.0	Dormant application only.
Currants	Exempt	30.0	Dormant application only.
Dewberries	Exempt	30.0	Dormant application only.
Figs	Exempt	70.0	Apply during dormancy when temperature is above 40°F.

*Phytotoxic to foliage

DORMANT OILS

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Filberts	Exempt	96.0	Apply during dormancy when temperature is above 40°F.
Gooseberries	Exempt	30.0	Dormant application only.
Grapes	Exempt	30.0	Dormant application only.
Huckleberries	Exempt	30.0	Dormant application only.
Loganberries	Exempt	30.0	Dormant application only.
Nectarines	Exempt	140.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Peaches	Exempt	140.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Pears	Exempt	248.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Pecans	Exempt	96.0	Apply during dormancy when temperature is above 40°F.
Plums	Exempt	140.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Prunes	Exempt	140.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Quinces	Exempt	248.0	Apply during dormancy when temperature is above 40°F.
		100.0	Dormant or delayed dormant only.
Raspberries	Exempt	30.0	Dormant application only.

DORMANT OILS

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Strawberries	Exempt	30.0	Dormant application only.
Walnuts	Exempt	96.0	Apply during dormancy when temperature is above 40°F.
Youngberries	Exempt	30.0	Dormant application only.

ENDOSULFAN*

PRINCIPAL FORMULATIONS: EC; WP; D; G; Aerosol

TYPE PESTICIDE: Insecticide

	USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
			lb. actual/A.	
	Alfalfa	0.3 (fresh alfalfa) 1.0 (hay) 0.5 (milk fat) 0.2 (meat, fat and meat byproducts of cattle, goats, hogs, horses, and sheep)	0.25	Do not apply more than 1 application per cutting. Do not graze or cut forage within 21 days of treatment.
	Alfalfa (seed crop only)		2.0	Crop to be used for seed production only. Do not feed treated forage.
**	Almonds	1.0 (hulls) 0.2 (almonds)	2.5	Do not make more than one application per season.
	Apples	2.0	4.0	30 days. Do not apply more than twice during fruiting period. Do not feed pomace from treated apples to livestock.
			2.5	30 days. No limit on number of applications. Do not feed pomace from treated apples to livestock. or 21 days. Do not apply more than 3 times during fruiting period. Do not feed pomace from treated apples to livestock.

*hexachlorohexahydromethano-2,4,3-benzodioxathiepin oxide
*Proprietary name: "Thiodan"

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Apricots	2.0	4.0	Foliar application. 30 days. Do not apply more than twice during fruiting season.
		0.75 lb./ 100 gal. water	Spray all bark from ground to scaffold branches. Do not apply within 21 days of harvest. or Thoroughly wet trunk and main branches. Do not apply more than twice during fruiting season. Do not apply within 30 days of harvest.
Artichokes	2.0	1.5	Do not apply after buds start to form
		1.0	7 days.
Barley	0.1 (grain) 0.2 (straw)	0.5	Do not apply after heads begin to form. Do not feed treated forage to livestock.
Beans	2.0	1.0	Do not apply more than 3 times per season. Do not apply within 3 days of harvest. Do not feed treated threshings to livestock or allow livestock to graze in treated fields. Do not use on lima beans that are to be removed from the field for processing.
** Blueberries	0.1	1.5	Apply immediately after harvest and repeat 6 to 8 weeks later. Do not apply after buds are well formed.
Broccoli	2.0	1.0	7 days.
Brussels sprouts	2.0	1.0	14 days.

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Cabbage	2	1.0	7 days.
Carrots	0.2	1.0	Do not apply more than 2 times per season. Do not apply within 7 days of harvest. Do not use tops for food or feed.
Cauliflower	2	1.0	Do not apply within 14 days of harvest.
Celery (whole plant)	2	0.5	Do not apply within 7 days of harvest.
		1.0	Do not apply more than 3 times per season. Do not apply within 4 days of harvest.
Cherries	2	2.5	Do not apply more than twice after shucks split. Do not apply within 21 days of harvest.
		3.0	Postharvest application only.
		0.75 lb./ 100 gal. water	Spray all bark from ground to scaffold branches. Do not apply more than twice after shucks split. Do not apply within 21 days of harvest.
Citrus: (nursery and nonbearing stock)	NF	2.5 or 0.25 lbs. actual/100 gals. water	Do not apply to bearing trees or to trees that will bear fruit within 12 months.
Collards	2	0.75	One application per season. Do not apply within 21 days of harvest.
Corn (sweet)	0.2 (kernels plus cob with husks removed)	1.5	For fresh vegetable use only. Do not apply to sweet corn to be processed. Do not make more than 5 applications. (May be applied up to day of harvest.) Do not feed forage or ensilage to livestock or allow livestock to graze in treated fields.

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Cotton	1 (cotton-seed)	1.5	Do not apply after bolls open. Do not graze meat or dairy animals in treated fields.
		0.75	Do not apply after 25% of bolls are open. Do not graze meat or dairy animals in treated fields.
Cucumbers	2	1.0	No time limitations.
Eggplants	2	0.5 (spray)	1 day.
		0.6 (dust)	1 day.
Filberts	0.2	2.0	No time limitations. Do not graze livestock in treated groves.
Grapes	2	1.5	7 days.
Kale	2	0.75	One application per season. Do not apply within 21 days of harvest.
Lettuce (head)	2	1.0	Do not apply more than 3 times after thinning. Do not apply within 14 days of harvest. Remove outside leaves at harvest. Do not feed crop waste to livestock.
Lettuce (leaf)	2	1.0	14 days. Do not make more than 2 applications per season.
Macadamia nuts	0.2	15.0	No time limitations. Do not graze livestock in treated groves.
Melons	2	1.0 (spray) 1.5 (dust)	No time limitations.
Mustard greens	2	0.75	One application per season. Do not apply within 21 days of harvest.

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Nectarines	2	4.0	Foliar application. 30 days. Do not apply more than twice during fruiting season.
		0.75 lb./ 100 gal. water	Spray all bark from ground to scaffold branches. Do not apply within 21 days of harvest or Thoroughly wet trunk and main branches. Do not apply more than twice during fruiting season. Do not apply within 30 days of harvest.
Oats	0.1 (grain) 0.2 (straw)	0.5	Do not apply after heads begin to form. Do not feed treated forage to livestock.
Peaches	2	4.0	Foliar application. 30 days. Do not apply more than twice during fruiting season.
		0.75 lb./ 100 gal. water	Spray all bark from ground to scaffold branches. Do not apply within 21 days of harvest. or Thoroughly wet trunk and main branches. Do not apply more than twice during fruiting season. Do not apply within 30 days of harvest.
Pears	2	2.5	7 days. Do not apply more than twice during fruiting season. or 21 days. Do not apply more than five times during fruiting season.
		2.0	Apply to orchard floor and ground around trees. Do not graze livestock on treated orchards. Do not apply after petal fall.
		3.0	30 days. Apply thoroughly to foliage and fruit. Do not apply more than once during fruiting season.

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Peas (succulent)	2	1.0	Do not apply more than 2 times during the fruiting period. Use only on peas to be harvested by combine. Do not feed treated vines to livestock or allow to graze in treated fields.
Peas (seed crop only)	NF	1.2	Do not feed treated vines or threshings to dairy or meat animals.
Pecans	0.2	10.0	Do not apply after shuck-split. Do not graze livestock in treated groves.
Peppers	2	0.5 (spray)	1 day.
		1.0 (spray)	Do not apply within 4 days of harvest.
		1.5 (dust)	Do not apply within 1 day of harvest.
Pineapples	2	2.0	For fresh market only. Do not apply more than 4 times per season. Do not apply within 7 days of harvest. Do not feed treated forage or pineapple by-products to livestock.
Plums	2	2.5	7 days.
Potatoes	0.2	1.0	No time limitations. Do not plant root crops other than carrots, potatoes, and sweetpotatoes as follow-up crops.
Prunes	2	2.5	7 days.
Pumpkins	2	1.0	No time limitations.
Rye	0.1 (grain) 0.2 (straw)	0.5	Do not apply after heads begin to form. Do not feed treated forage to livestock.
Safflower	0.2 (seed)	1.0	Do not apply after flower heads open.

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Southern peas (succulent types)	2.0	1.0	3 days. Do not feed treated threshings to livestock or allow to graze in treated fields.
**			
Spinach	2.0	0.75	One application per season. Do not apply within 21 days of harvest.
Squash: summer winter	2.0	1.0	No time limitations.
Strawberries	2.0	4.0	4 days. Do not reapply within 35 days when fruit is present.
		1.0	4 days. Do not reapply within 15 days or more than twice within a 35 day period when fruit is present.
		0.25 lb. actual/50 gals. water	Dip transplants prior to transplanting.
		1.0 lb. actual/ 100 gal. water	Use restricted to Northwestern states. Dip entire plant prior to transplanting.
Sugar beets	0.1 (roots)	1.0	30 days. Do not feed treated tops to livestock.
Sugarcane	0.5	0.45	Do not apply within 21 days of harvest. Do not feed bagasse or field trimmings to livestock.
Sunflower	2.0 (seed)	1.0	Do not apply more than 3 times per season. Do not feed treated forage to livestock.

ENDOSULFAN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lb. actual/A.	
Sweetpotatoes	0.2	2.0	Use restricted to south central states. Soil treatment at planting time. Do not feed treated potatoes to livestock.
		0.5	Apply shortly after transplanting or as soon as flea beetles appear. Repeat as necessary.
Tobacco	NF	3.0	Field foliage treatment.
		0.25 lb. actual/100 sq.yd.	Plant bed drench.
		0.03 lb. actual/100 sq.yd. (spray)	Seed bed treatment.
		0.06 lb. actual/100 sq.yd. (dust)	Seed bed treatment.
Tomatoes (field and greenhouse)	2	1.0	1 day.
Tomatoes (greenhouse)	2	0.1/ 50,000 cu. ft.	Do not apply within 15 hours of harvest. Keep greenhouse tightly closed for 2 hours after application.
Turnip greens	2	0.75	One application per season. Do not apply within 21 days of harvest.
Walnuts	0.2	2.0	Do not apply after husks split. Do not graze livestock in treated groves.
Watercress	2	1.0	7 days.
Wheat	0.1 (grain) 0.2 (straw)	0.5	Do not apply after heads begin to form. Do not feed treated forage to livestock.

ENDRIN*

PRINCIPAL FORMULATIONS: EC; D; G; Bait

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Barley	Extended	0.25	Single application. Do not apply within 45 days of harvest or of feeding. Do not graze livestock on treated forage. Do not feed threshings to livestock.
Cotton	0 Extended	0.7	Apply for control of cutworms. Do not graze dairy animals or animals being finished for slaughter on treated fields. Workers entering fields within 5 days after treatment should be protected.
		0.5	Do not graze dairy animals or animals being finished for slaughter on treated fields. Workers entering fields within 5 days after treatments should be protected.
	Extended	2 oz./100 lb. seed	Seed treatment. Do not use as food or feed.

*hexachloroepoxyoctahydro-endo, endo-dimethanonaphthalene

ENDRIN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Deciduous fruits: Apples	Extended	2.4	Postharvest application to orchard floor in Oct. or Nov. Apply at 500 psi pressure. Do not cultivate prior to application or within 2 months thereafter. Do not treat areas where runoff will contaminate streams, ponds, or domestic water supplies. Do not graze orchards, cut forage for hay, or allow drop fruit to be utilized for any purpose. Post or otherwise prevent entry to treated area within 30 days after treatment.
Oats	Extended	0.25	Single application. Do not apply within 45 days of harvest or of feeding. Do not graze livestock on treated forage. Do not feed threshings to livestock.
Rye	Extended	0.25	Single application. Do not apply within 45 days of harvest or of feeding. Do not graze livestock on treated forage. Do not feed threshings to livestock.
Sugarcane	Extended	0.25 (granular)	45 days. 4-8 applications at 14-day intervals. 2.0% granular formulation only. Do not feed bagasse or field trimmings to livestock.

ENDRIN

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		lbs. actual/A.	
Sugarcane (continued)	Extended	0.5	45 days. 4 applications at 21 day intervals. Do not feed bagasse to livestock.
		0.5	Apply to seed pieces in open row.
Wheat	Extended	0.25	Single application. Do not apply within 45 days of harvest or of feeding. Do not graze livestock on treated forage. Do not feed threshings to livestock.

ETHION*

PRINCIPAL FORMULATIONS: EC, EC in oil, WP, D, G, FM

TYPE OF PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Registered products containing ethion may (1) be formulated with various oils (package mixes), (2) contain no oil, but bear label directions for mixing with oil prior to application (tank mixes), or (3) contain no oil and bear no label directions for mixing with oil.

The primary oils formulated with ethion in registered products are as follows:

Dormant oil
Light medium oil
Summer oil
"Superior type" oils of 60, 70, and 100 second viscosity
"Unclassified" oils of 60 and 70 second viscosity.

Whenever oil is used, a suitable one must be selected in relation to the site, geographical location, and timing of application. The directions for use and limitations on the labels of all products containing oil must also be followed or plant injury may occur.

Bee caution: This product is toxic to bees and should not be applied when bees are actively visiting the area.

Livestock Tolerances

0.2 ppm (eggs, and meat, fat, and meat byproducts of goats, hogs, horses, poultry, and sheep).
0.5 ppm (milk fat).
0.75 ppm (meat and meat byproducts of cattle).
2.5 ppm (fat of cattle).

*O,O,O',O'-tetraethyl S,S'-methylene bisphosphorodithioate

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Almonds		0.1 ppm (almonds). 5.0 ppm (almond hulls). 30 day preharvest interval through 2.0 lb./A. Foliage application. Do not apply dosages of through 2.0 lb./A. more than once during the fruiting period. Do not apply dosages of from above 2.0 through 2.5 lb./A. after husks split. Foliage application.
Brown mite European red mite	1.5-2.5/A.(EC), 1.25-2.5/A.(WP), 1.2-2.0/A.(D)	Foliage application.
	0.24-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Brown mite (overwintering eggs) European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water (EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Almonds (continued)		
Olive scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water (EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.5/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 3.0 gal. of oil added per 100 gal. water.
	0.45-0.6 (in 3.0 gal. oil)/100 gal. water (EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Oystershell scale	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
San Jose scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.25-0.375/100 gal. water (EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Almonds (continued)		
Soft scales	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Twospotted spider mite	1.5-2.5/A.(EC), 1.25-2.5/A.(WP), 1.2-2.0/A.(D)	Foliage application.
	0.24-0.375 (in 1.0-2.0 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples		2.0 ppm. 20 day preharvest interval through 2.5 lb./A. if no more than 2 applications are made during the fruiting period. 30 day preharvest interval through 2.5 lb./A. if no more than 3 applications are made during the fruiting period. 40 day preharvest interval through 2.5 lb./A. if no more than 4 applications are made during the fruiting period. 40 day preharvest interval through 5.0 lb./A. if no more than 2 applications are made during the fruiting period. 60 day preharvest interval through 5.0 lb./A. if no more than 4 applications are made during the fruiting period.
		Do not use on Astrachan, Davey, Duchess, Margaret Pratt, Melba, Wealthy, Williams Red (Red Williams), or any other varieties maturing with or before Early McIntosh, as injury is likely to occur.
Apple aphid (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
Apple aphid (cont.) (overwintering eggs)	0.3/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Apple rust mite	2.0-2.5/A.(WP), 2.0-3.6/A.(D)	Foliage application.
	0.24-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Brown mite	0.25/100 gal. water(EC,WP), 1.6-3.6/A.(D)	Foliage application.
	0.24-0.375 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Brown mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.4 (in 2.0 gal. oil)/100 gal. water (EC in oil)	Dormant application. Formulated with oil.
	0.16-0.4 (in 1.0-2.5 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
Codling moth	0.5/100 gal. water(EC,WP)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
	1.6/A.(D)	Foliage application. Formulated with lead arsenate.
European red mite	0.25/100 gal. water(EC,WP), 1.6-3.6/A.(D)	Foliage application. D may be formulated with lead arsenate.
	0.24-0.375 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.24-0.4 (in 1.5-2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.3/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
McDaniel spider mite	0.24 (in 1.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.
Oystershell scale	0.33-0.5 (in 0.5-0.75 gal. oil)/100 gal. water(EC in oil)	Foliage application. Apply about June 1 to "crawlers" hatching from overwintering eggs. Repeat 60 days later for the second generation. Formulated with oil.
	0.32-0.33 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Pearleaf blister mite	0.5 (in 2.0 gal. oil)/100 gal. water (EC in oil)	Dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
Rosy apple aphid (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water (EC in oil)	Dormant application. Formulated with oil.
	0.3/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
San Jose scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water (EC in oil)	Dormant or delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
Soft scales	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.32-0.4 (in 2.0-2.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the West Coast. Dormant or delayed dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Twospotted spider mite	0.25/100 gal. water(EC,WP), 1.6-3.6/A.(D)	Foliage application. D may be formulated with lead arsenate.
	0.24-0.375 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apricots		0.1 ppm. Apply dosages of through 3.2 lb./A. during dormant or delayed dormant period only.
Brown mite (overwintering eggs) European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.16-0.4 (in 1.0-2.5 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Leafcurl plum aphid (overwintering eggs) Mealy plum aphid (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
Oystershell scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
	0.3/100 gal. water(EC)	Delayed dormant application. Apply with 2.0 gal. of oil per 100 gal. of water.
San Jose scale Soft scales	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
	0.32-0.4 (in 2.0-2.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the West Coast. Dormant or delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Beans		2.0 ppm. 2 day preharvest interval through 0.5 lb./A.(spray) or 0.8 lb./A.(dust). Foliage application. 4 day preharvest interval from above 0.5 through 1.0 lb./A. (spray) or from above 0.8 through 1.6 lb./A.(dust). Foliage application. Do not feed treated bean foliage to livestock.
Bean leaf beetle	0.25-0.5/A. (EC,WP), 0.6-0.8/A.(D)	Foliage application.
Lygus bugs	1.0/A.(EC,WP), 1.2-1.6/A.(D)	Foliage application.
Mexican bean beetle	0.25-0.5/A. (EC,WP), 0.6-0.8/A.(D)	Foliage application.
Potato leafhopper	0.5/A.(EC,WP)	Foliage application.
Seed corn maggot	0.0625 (1.0 oz.)/100 lb. seed(WP)	Seed treatment. Mix and apply to the seed as a slurry. May be combined with a suitable fungicide for seed treatment if desired. Do not use treated seed for food, feed, or oil purposes.
	1.6/A.(G)	Seed treatment. Uniformly mix with sufficient seed to plant one acre. Do not use treated seed for food, feed, or oil purposes.
Twospotted spider mite	0.25-0.5/A. (EC,WP), 0.6-0.8/A.(D)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Blueberries		NF.
Blueberry bud mite	0.67-1.34 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Postharvest application. Apply 1-2 weeks after harvest, and repeat 3-4 weeks later. Spray plants until thoroughly wet. Formulated with oil.
Cherries		0.1 ppm. Apply dosages of through 2.5 lb./A. as postharvest treatment only. Apply dosages of through 3.2 lb./A. during dormant or delayed dormant period only.
Black cherry aphid (overwintering eggs)	0.25-0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
	0.16-0.4 (in 1.0-2.0 gal. gal. oil)/100 gal. water (EC in oil)	Delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cherries (continued)		
Brown mite (overwintering eggs)	0.25/100 gal. water(WP)	Postharvest application.
	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.16-0.4 (in 1.0-2.5 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
European red mite (overwintering eggs)	0.25/100 gal. water(WP)	Postharvest application.
	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Forbes scale	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Leafcurl plum aphid (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cherries (continued)		
McDaniel spider mite	0.25/100 gal. water(WP)	Postharvest application.
Mealy plum aphid (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Formulated with oil.
Putnam scale	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
San Jose scale	0.25-0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Soft scales	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Twospotted spider mite	0.25/100 gal. water(WP)	Postharvest application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Chestnuts		0.1 ppm. Do not apply dosages of through 2.5 lb./A. after husks split. Foliage application. Do not apply foliage applications more than twice during the fruiting period. Apply dosages of through 3.0 lb./A. during dormant or delayed dormant period only. Do not graze livestock in treated areas.
Aphids	2.5/A.(EC,WP)	Foliage application.
Mites (including twospotted spider mite)	0.3 (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Corn (field)		1.0 ppm (grain). 14 ppm (fodder and forage). 50 day preharvest interval through 1.0 lb./A. Foliage application. Do not apply more than once after ears form. Do not feed treated forage to livestock.
Twospotted spider mite	1.0/A.(EC)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton		0.5 ppm (cottonseed). Do not apply dosages of through 1.6 lb./A. after bolls open. Foliage application. Do not graze dairy or meat animals in treated fields. Workers entering treated fields within 24 hours following application should wear protective clothing.
Aphids	0.5-1.0/A.(EC)	Foliage application.
	0.5-1.0/A.(D)	Use restricted to areas other than the Western United States. Foliage application.
Cotton leafworm	0.5/A.(EC,WP)	Foliage application.
Plant bugs (including lygus bugs)	1.0-1.5/A. (EC,WP), 1.0-1.6/A.(D)	Foliage application.
Spider mites	0.25-1.5/A.(EC), 1.0-1.5/A.(WP)	Foliage application.
	0.5/A.(D)	Use restricted to areas other than the Western United States. Foliage application.
	1.0-1.6/A.(D)	Use restricted to the Western United States. Foliage application.
Cucumbers		0.5 ppm. No preharvest interval through 0.5 lb./A. Foliage application.
Serpentine leafminer Twospotted spider mite	0.5/A.(EC,WP)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Eggplant		1.0 ppm. No preharvest interval through 0.5 lb./A. Foliage application.
Twospotted spider mite	0.25-0.5/A. (EC,WP,D)	Foliage application.
Filberts		0.1 ppm. Do not apply dosages of through 2.5 lb./A. after nut becomes visible, and do not apply more than twice during the fruiting period. Foliage application. Apply dosages of through 3.0 lb./A. during the dormant or delayed dormant period only.
Aphids	2.5/A.(EC,WP)	Foliage application.
Mites (including brown mite European red mite twospotted spider mite)	0.3 (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Garlic		1.0 ppm. Apply dosages of through 2.0 lb./A. only as furrow treatments at time of planting.
Onion maggot	0.4-0.8/A.(G) (with 36-inch row spacing) or 0.6-1.2/A.(G) (with 24-inch row spacing) or 1.0-2.0/A.(G) (with 15-inch row spacing)	Furrow treatment at time of planting. For mineral soils.
	0.6-0.8/A.(G) (with 36-inch row spacing) or 0.9-1.2/A.(G) (with 24-inch row spacing) or 1.5-2.0/A.(G) (with 15-inch row spacing)	Furrow treatment at time of planting. For muck soils.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit		2.0 ppm. No preharvest interval through 7.5 lb./A. Foliage application. Do not repeat applications within 90 days.
Black scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Brown soft scale California red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
Chaff scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.4 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit (continued)		
Citrus red mite Citrus rust mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application.
	0.25/100 gal. water(EC)	Use restricted to the Western United States. Foliage application. Apply with 0.5 gal. of oil added per 100 gal. of water.
	0.25-0.375/100 gal. water(WP)	Foliage application. In the Florida-Texas area, apply with 0.5-1.0 gal. of oil added per 100 gal. water. In the Western United States, apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.25-0.5/100 gal. water(WP)	Foliage application. Apply with 0.375-0.5 gal. of oil added per 100 gal. water.
	0.25-0.4 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Citrus thrips	2.5-3.0/A. (EC,WP), 1.4-4.0/A.(D)	Use restricted to Arizona and California. Foliage application. Apply when thrips first appear, and before they exceed three per leaf. Oil may be added to the WP at the rate of 0.375-0.5 gal. per 100 gal. water.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Use restricted to Arizona and California. Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit (continued)		
Citrus whitefly	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water. Apply shortly after eggs have been laid.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Apply shortly after eggs have been laid.
Florida red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil. added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Glover scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit (continued)		
Purple scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.4 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Sixspotted mite	0.25-0.375/100 gal. water (EC,WP)	Foliage application. Oil may be added to the WP at the rate of 0.5-1.0 gal. per 100 gal. water for the Florida-Texas area, and at 1.0-2.0 gal. of oil per 100 gal. water for the West Coast.
Snow scales	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. water. Spray trunk, limbs and twigs thoroughly.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Spray trunk, limbs, and twigs thoroughly.
	0.33-0.4 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Spray trunk, limbs and twigs thoroughly. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit (continued)		
Texas citrus mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Yellow scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Yuma spider mite	3.0/A.(WP)	Use restricted to California. Foliage application. Oil may be added at a rate of up to 5.0 gal. per acre.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapes		2.0 ppm. 60 day preharvest interval through 1.25 lb./A.(spray) if more than two applications are made during the fruiting period. Foliage application. 30 day preharvest interval through 1.25 lb./A.(spray) if no more than two application are made during the fruiting period. Foliage application. 30 day preharvest interval through 2.25 lb./A.(spray) if no more than one application is made. Foliage application. 30 day preharvest interval through 1.2 lb./A.(dust) if no more than 3 applications are made during the fruiting period. Foliage application. 15 day preharvest interval through 1.2 lb./A.(dust) if no more than 2 applications are made during the fruiting period. Foliage application. Do not apply to Fehr-Szago, Muscat, or Salvador varieties.
Grape berry moth	2.25/A.(WP)	Use restricted to the Eastern United States. Apply 300 gallons of finished spray per acre. Make one application during the first week of August.
Grape leafhopper Twospotted spider mite	0.75-1.25/A. (EC,WP), 0.6-1.2/A.(D)	Foliage application.
	0.75-2.25/A. (EC,WP)	Use restricted to the Eastern United States. Foliage application.
Willamette mite	0.75-1.25/A. (EC,WP), 0.6-1.2/A.(D)	Use restricted to the Western United States. Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons Limes		2.0 ppm. 21 day preharvest interval through 7.5 lb./A. Foliage application. Do not apply more than once per season.
Black scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. of water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. On limes, use only the lower dosage. Formulated with oil.
Brown soft scale California red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. of water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
Chaff scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. of water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. On limes, use only the lower dosage. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons (continued)		
Limes		
Citrus red mite Citrus rust mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application. Oil may be added to the sprays at the rate of 0.375-0.5 gal. per 100 gal. water.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. On limes, use only the lower dosage. Formulated with oil.
Citrus thrips	2.5-3.0/A. (EC,WP), 1.4-4.0/A.(D)	Use restricted to Arizona and California. Foliage application. Apply when thrips first appear, and before they exceed three per leaf. Oil may be added to the WP at the rate of 0.375-0.5 gal. per 100 gal. water.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to Arizona and California. Foliage application. For use only on lemons. Formulated with oil.
Citrus whitefly	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water. Apply shortly after eggs have been laid.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Apply shortly after eggs have been laid.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons (continued)		
Limes		
Florida red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.
Glover scale Purple scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. On limes, use only the lower dosage. Formulated with oil.
Sixspotted mite	0.25-0.375/100 gal. water(EC,WP)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons (continued)		
Limes		
Snow scales	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. water. Spray trunk, limbs, and twigs thoroughly.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Spray trunk, limbs and twigs thoroughly.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Spray trunk, limbs, and twigs thoroughly. On limes, use only the lower dosage rate. Formulated with oil.
Texas citrus mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application.
	0.33 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.
Yellow scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. On limes, use only the lower dosage. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Lemons (continued)		
Limes		
Yuma spider mite	3.0/A.(WP)	Use restricted to California. Foliage application. Oil may be added at a rate of up to 5.0 gal. per acre.
Melons		2.0 ppm. No preharvest interval through 1.0 lb./A.(spray) or 1.6 lb./A.(dust). Foliage application.
Cucumber beetles	0.5-1.0/A.(EC)	Foliage application.
Petrobia mites	0.5-1.0/A. (EC,WP)	Use restricted to California. Foliage application. Apply in a minimum of 10 gallons of water per acre.
Serpentine leafminer complex Twospotted spider mite	0.5/A.(EC,WP), 1.2-1.6/A.(D)	Foliage application.
Western potato leafhopper	0.75-1.0/A. (EC,WP), 1.2-1.6/A.(D)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Nectarines		1.0 ppm. 30 day preharvest interval through 1.75 lb./A.(spray) or 2.4 lb./A.(dust). Foliage application. Do not apply more than twice during the fruiting period.
Brown mite European red mite	0.25/100 gal. water(EC,WP), 1.6-2.4/A.(D)	Foliage application.
Brown mite (overwintering eggs) European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Nectarines (continued)		
Olive scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.5/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 3.0 gal. of oil added per 100 gal. water.
	0.45-0.6 (in 3.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
	0.25/100 gal. water(WP)	Delayed dormant application. Apply with 1.0 gal. of oil added per 100 gal. water. Apply at the time of overwintering scale hatch.
Oystershell scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
San Jose scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Formulated with oil.
	0.25-0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Nectarines (continued)		
Soft scales	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Onions		1.0 ppm. Apply dosages of through 2.0 lb./A. only to furrow at time of planting or to the seed prior to planting.
Onion maggot	0.5 (WP) (with 24-inch row spacing) or 0.75 (WP) (with 18-inch row spacing) or 1.0 (WP) (with 12-inch row spacing)	Seed treatment. Dosages are the amounts needed to treat sufficient seed to plant one acre (with various row spacings) in upland soils. For muck or heavy soils, increase the dosage by 50-100%.
	0.375/A.(EC) (with 36-inch row spacing) or 0.625/A.(EC) (with 24-inch row spacing) or 1.0/A.(EC) (with 15-inch row spacing)	Use restricted to the Eastern United States. Apply to the furrow at time of planting.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Onions (continued)		
Onion maggot (cont.)	0.75/A.(EC) (with 36-inch row spacing) or 1.25/A.(EC) (with 24-inch row spacing) or 2.0/A.(EC) (with 15-inch row spacing)	Use restricted to the Western United States. Apply to the furrow at time of planting.
	0.4-0.8/A.(G) (with 36-inch row spacing) or 0.6-1.2/A.(G) (with 24-inch row spacing) or 1.0-2.0/A.(G) (with 15-inch row spacing)	For mineral soils. Apply to the furrow at time of planting.
	0.6-0.8/A.(G) (with 36-inch row spacing) or 0.9-1.2/A.(G) (with 24-inch row spacing) or 1.5-2.0/A.(G) (with 15-inch row spacing)	For muck soils. Apply to the furrow at time of planting.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges		2.0 ppm. No preharvest interval through 7.5 lb./A. Foliage application. Do not repeat applications within 90 days.
Black scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.
Brown soft scale California red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Chaff scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Citrus red mite Citrus rust mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application.
	0.25/100 gal. water(EC)	Use restricted to the Western United States. Foliage application. Apply with 0.5 gal. of oil added per 100 gal. of water.
	0.25-0.5/100 gal. water(WP)	Foliage application. For use on navel and valencia oranges only. For navel oranges in the San Joaquin Valley of California, 0.375-0.5 gal. of oil may be added per 100 gal. of water. For navel oranges elsewhere, apply without oil. For valencia oranges, apply with the oil added.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Citrus thrips	2.5-3.0/A. (EC,WP), 1.4-4.0/A.(D)	Use restricted to Arizona and California. Foliage application. Apply when thrips appear and before they exceed 2 or 3 per leaf.
	0.25-0.5/100 gal. water(WP)	Use restricted to Arizona and California. Foliage application. For use on navel and valencia oranges only. For navel oranges in the San Joaquin Valley of California, 0.375-0.5 gal. of oil may be added per 100 gal. of water. For navel oranges elsewhere, apply without oil. For valencia oranges, apply with the oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Use restricted to Arizona and California. Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.
Citrus whitefly	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water shortly after adults have laid their eggs.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water shortly after adults have laid their eggs.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Florida red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Glover scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.375 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Purple scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.
Sixspotted mite	0.25-0.375/100 gal. water (EC,WP)	Foliage application.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Snow scales	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water. Spray trunk, limbs and twigs thoroughly.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Spray trunk, limbs and twigs thoroughly.
	0.33-0.375 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Spray trunk, limbs and twigs thoroughly. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Spray trunk, limbs, and twigs thoroughly. Formulated with oil.
Texas citrus mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Oranges (continued)		
Yellow scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the Western United States. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.375 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. For use on valencia oranges in all localities. For navel oranges, use is restricted to the San Joaquin Valley of California. Formulated with oil.
Yuma spider mite	3.0/A.(WP)	Use restricted to California. Foliage application. May be applied with the equivalent of up to 5.0 gal. of oil per acre added.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peaches		1.0 ppm. 30 day preharvest interval through 1.75 lb./A.(spray) or 2.4 lb./A.(dust). Foliage application. Do not apply more than twice during the fruiting period.
Brown mite European red mite	0.25/100 gal. water(EC,WP), 1.6-2.4/A.(D)	Foliage application.
	0.25 (in 1.0-1.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.
Brown mite (overwintering eggs) European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Forbes scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peaches (continued)		
Olive scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.5/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 3.0 gal. of oil added per 100 gal. water.
	0.45-0.6 (in 3.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
	0.25/100 gal. water(WP)	Delayed dormant application. Apply with 1.0 gal. of oil added per 100 gal. water. Apply at the time of overwintering scale hatch.
Oystershell scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Putnam scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peaches (continued)		
San Jose scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.25-0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Soft scales	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Twospotted spider mite	0.25/100 gal. water(EC, WP), 1.6-2.4/A.(D)	Foliage application.
	0.25 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
White peach scale	0.5/100 gal. water(EC)	Dormant application. Apply with 2.0 gal. oil added per 100 gal. water.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears		1.0 ppm. 20 day preharvest interval through 2.5 lb./A. if no more than 2 applications are made after the first cover spray. Foliage application. 30 day preharvest interval through 2.5 lb./A. with no more than 3 applications to be made after the first cover spray. Foliage application. 35 day preharvest interval through 2.7 lb./A. with no more than 2 applications to be made during the fruiting period. Foliage application. 60 day preharvest interval through 5.0 lb./A. with no more than 3 applications to be made after the first cover spray. Foliage application.
Apple aphid (overwintering eggs)	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Apple rust mite	0.25/100 gal. water(EC)	Foliage application.
Brown mite	0.25-0.33/100 gal. water(EC), 0.25/100 gal. water(WP)	Foliage application.
	0.24-0.33 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears (continued)		
Brown mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Codling moth	0.25-0.5/100 gal. water(WP)	Foliage application. Apply at petal fall and every 10 to 14 days thereafter until control is achieved.
European red mite	0.25-0.33/100 gal. water(EC), 0.25/100 gal. water(WP)	Foliage application.
	0.16-0.33 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears (continued)		
European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Forbes scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Olive scale	0.5/100 gal. water(EC)	Dormant application. Apply with 3.0 gal. of oil added per 100 gal. water.
Oystershell scale	0.33-0.5 (in 0.5-0.75 gal. oil)/100 gal. water(EC in oil)	Foliage application. Apply about June 1 to "crawlers" hatching from overwintering eggs. Repeat 60 days later for the second generation. Formulated with oil.
	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears (continued)		
Pearleaf blister mite	0.5 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Apply shortly after harvest, or during the late dormant period. Formulated with oil.
Pear psylla	0.33-0.5/100 gal. water(EC), 0.375-0.5/100 gal. water(WP)	Foliage application.
	0.16-0.33 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.16-0.4 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Pear rust mite	0.25/100 gal. water(WP)	Foliage application.
	0.16-0.25 (in 1.0 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Putnam scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears (continued)		
Rosy apple aphid (overwintering eggs)	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
San Jose scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Soft scales	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Twospotted spider mite	0.25-0.33/100 gal. water(EC), 0.25/100 gal. water(WP)	Foliage application.
	0.24-0.33 (in 0.5-1.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pecans		0.1 ppm. Do not apply dosages of through 2.5 lb./A. after husks split, and do not apply more than twice during the fruiting period. Foliage application. Apply dosages of through 3.0 lb./A. during the dormant or delayed dormant period only. Do not graze livestock in treated groves.
Aphids	2.5/A.(EC,WP)	Foliage application.
Mites (including twospotted spider mite)	0.3 (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Peppers		1.0 ppm. No preharvest interval through 0.5 lb./A. Foliage application. 21 day preharvest interval from above 0.5 through 1.0 lb./A. Foliage application. Do not apply dosages of above 0.5 lb./A. more than 3 times during the fruiting period.
Serpentine leafminer	0.5/A.(EC,WP), 0.5-1.0/A.(D)	Foliage application.
Twospotted spider mite	0.25-0.5/A. (EC,WP), 0.25-1.0/A.(D)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pimentos		1.0 ppm. No preharvest interval through 0.5 lb./A. Foliage application.
Serpentine leafminer	0.5/A.(EC,WP,D)	Foliage application.
Twospotted spider mite	0.25-0.5/A. (EC,WP,D)	Foliage application.
Plums Prunes		2.0 ppm. 21 day preharvest interval through 1.75 lb./A. with no more than 3 applications during the fruiting period. Foliage application. 45 day preharvest interval through 2.5 lb./A. with no more than 2 applications during the fruiting period. Foliage application. Certain varieties may be injured by oil sprays; check oil sensitivity prior to use.
Brown mite	0.25/100 gal. water(EC,WP), 1.6-2.4/A.(D)	Foliage application.
	0.24-0.375 (in 1.5-2.0 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums (continued)		
Prunes		
Brown mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.3 (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application for all areas except the Sacramento and Suisan Valley areas of California where treatment should be made in early prebloom from when fruit buds show green tips up to bloom. Formulated with oil.
	0.16-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
European fruit lecanium	0.33/100 gal. water(EC), 0.375/100 gal. water(WP)	Foliage application.
	0.24-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums (continued)		
Prunes		
European red mite	0.25/100 gal. water(EC,WP), 1.6-2.4/A.(D)	Foliage application.
	0.24-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
European red mite (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.3 (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application for all areas except the Sacramento and Suisan Valley areas of California where treatment should be made in early prebloom from when fruit buds show green tips up to bloom. Formulated with oil.
	0.16-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums (continued)		
Prunes		
Forbes scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Leafcurl plum aphid (overwintering eggs) Mealy plum aphid (overwintering eggs)	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.3-0.375 (in 1.5-2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.3 (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application for all areas except the Sacramento and Suisan Valley areas of California where treatment should be made in early prebloom from when fruit buds show green tips up to bloom. Formulated with oil.
	0.16-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums (continued)		
Prunes		
Olive scale	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.5/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 3.0 gal. of oil added per 100 gal. water.
	0.45-0.6 (in 3.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application except for some products for Sacramento and Suisan Valley areas of California where treatment should be made during early prebloom when fruit buds show green tips. Formulated with oil.
Oystershell scale	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Putnam scale	0.3 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums (continued)		
Prunes		
San Jose scale	0.3-0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.25-0.375/100 gal. water(EC)	Dormant or delayed dormant application. Apply with 2.0 gal. of oil added per 100 gal. water.
	0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application for all areas except the Sacramento and Suisan Valley areas of California where treatment should be made in early prebloom when fruit buds show green tips. Formulated with oil.
	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums (continued)		
Prunes		
Soft scales	0.25-0.375 (in 1.0-1.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the Pacific Coast States. Dormant application. Formulated with oil.
	0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application for all areas except the Sacramento and Suisan Valley areas of California where treatment should be made in early pre-bloom when fruit buds show green tips. Formulated with oil.
	0.3-0.32 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant or delayed dormant application. Formulated with oil.
Twospotted spider mite	0.25/100 gal. water(EC,WP), 1.6-2.4/A.(D)	Foliage application.
	0.24-0.375 (in 1.0-2.0 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Sorghum		2.0 ppm (grain and forage). 30 day prefeeding (of forage) or preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season. Some leaf burning may occur on phosphate sensitive varieties.
Sorghum midge Sorghum mites	0.25-0.5/A. (EC,WP)	Foliage application. For sorghum midge, apply at first bloom, and repeat 4-10 days later.
Squash (summer)		0.5 ppm. No preharvest interval through 0.5 lb./A. Foliage application.
Serpentine leafminer Twospotted spider mite	0.5/A.(EC,WP)	Foliage application.
Strawberries		2.0 ppm. 2 day preharvest interval through 1.0 lb./A.(spray) or 1.2 lb./A.(dust). Foliage application.
Strawberry leafroller	0.5-1.0/A. (EC,WP), 1.2/A.(D)	Foliage application.
Twospotted spider mite	0.5-1.0/A. (EC,WP), 0.8-1.2/A.(D)	Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangelos Tangerines		2.0 ppm. No preharvest interval through 7.5 lb./A. Foliage application. Do not make more than two applications per season. Do not repeat application within 90 days.
Black scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.
Brown soft scale California red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangelos (continued)		
Tangerines		
Chaff scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.
Citrus red mite Citrus rust mite	0.25-0.375/100 gal. water(EC), 0.25-0.5/100 gal. water(WP), 2.0-4.0/A.(D)	Foliage application.
	0.25/100 gal. water(EC)	Use restricted to the Western United States. Foliage application. Apply with 0.5 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangelos (continued)		
Tangerines		
Citrus red mite (cont.) Citrus rust mite	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.
Citrus thrips	2.5-3.0/A. (EC,WP), 1.4-4.0/A.(D)	Use restricted to Arizona and California. Foliage application. Apply when thrips appear and before they exceed three per leaf.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.
Citrus whitefly	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. of water. Apply shortly after eggs have been laid.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Apply shortly after eggs have been laid.
Florida red scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangelos (continued) Tangerines		
Florida red scale (continued)	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Glover scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.375 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.
Purple scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangelos (continued)		
Tangerines		
Purple scale (cont.)	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.
Sixspotted mite	0.25-0.375/100 gal. water(EC,WP)	Foliage application.
Snow scales	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water. Spray trunk, limbs, and twigs thoroughly.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water. Spray trunk, limbs, and twigs thoroughly.
	0.33-0.375 (in 0.5-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Spray trunk, limbs, and twigs thoroughly. Formulated with oil.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tangelos (continued)		
Tangerines		
Snow scales (cont.)	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Spray trunk, limbs, and twigs thoroughly. Formulated with oil.
Texas citrus mite	0.25-0.375/100 gal. water (EC,WP), 2.0-4.0/A.(D)	Foliage application.
	0.25-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
Yellow scale	0.25-0.375/100 gal. water (EC,WP)	Use restricted to the West Coast. Foliage application. Apply with 1.0-2.0 gal. of oil added per 100 gal. water.
	0.375/100 gal. water(EC,WP)	Use restricted to the Florida-Texas area. Foliage application. Apply with 0.5-1.0 gal. of oil added per 100 gal. water.
	0.33-0.375 (in 0.4-0.8 gal. oil)/100 gal. water(EC in oil)	Foliage application. Formulated with oil.
	0.4 (in 0.5 gal. oil)/100 gal. water(EC in oil)	Use restricted to the San Joaquin Valley of California. Foliage application. Apply after bloom using at least 3.2 lb./A. for mature trees. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Tomatoes		2.0 ppm. 2 day preharvest interval through 0.5 lb./A.(spray) or 0.8 lb./A.(dust). Foliage application.
Leafminers Tropical spider mite Twospotted spider mite	0.5/A.(EC,WP), 0.8/A.(D)	Foliage application.
Walnuts		0.1 ppm. Do not apply dosages of through 2.5 lb./A. after husks split and not more than twice during the fruiting period. Foliage application. Do not apply dosages of more than 2.0 lb./A. during the dormant period. Do not graze livestock in treated groves. Dormant and delayed dormant applications should only be used on trees that have not suffered from lack of moisture at any time during the growing season. Oil should not be applied to orchards when soil moisture is low.
Brown mite European red mite	1.5-2.5/A.(WP)	Foliage application.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Walnuts (continued)		
Brown mite (overwintering eggs) European red mite (overwintering eggs) San Jose scale	2.0/A.(EC)	Dormant or delayed dormant application. Apply dosage in at least 100 gal. of water, and with 2.0 gal. of oil added per acre.
	0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Soft scales	2.0/A.(EC)	Use restricted to the West Coast. Dormant or delayed dormant application. Apply in at least 100 gal. of water, and with 2.0 gal. of oil added per acre.
	0.4 (in 2.0 gal. oil)/100 gal. water(EC in oil)	Delayed dormant application. Formulated with oil.
Twospotted spider mite Walnut aphid	1.5-2.5/A. (EC,WP)	Foliage application.
Walnut husk fly	1.5-2.5/A. (EC,WP)	Use restricted to California. Foliage application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS		
(Lawns and Turf)		
Bermudagrass		
Eriophyid mites	0.39 lb./25 gal. water/5,000 sq.ft.(EC)	Foliage application. Apply as needed to maintain control. Keep children and animals off treated areas until spray has completely dried. Do not apply to grass to be used for grazing, or for forage to be fed to livestock.
Grass		Keep children and animals off treated areas until ethion has been thoroughly watered into the soil and the grass is completely dry.
Chinch bug complex	0.75-1.25 lb./100 gal. water/5,000 sq.ft.(EC)	For commercial use only. Areas should be well irrigated prior to treatment. The spray must penetrate through the mat of turf to be effective.
	2.0 qt. of 3.0% conc./15-20 gal. water/ 500 sq.ft.(EC) or 1.0 pt. of 12% conc./15-20 gal. water/ 500 sq.ft.(EC)	Apply by hose proportioner or pressure sprayer. Area should be well irrigated prior to treatment. The spray must penetrate through the mat of turf to be effective.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Grass (continued)		
Chinch bug complex	1.25 lb./5,000 sq.ft.(G), 1.15-1.2 lb./ 5,000 sq.ft. (FM)	Broadcast evenly by mechanical spreader. Area should be well irrigated prior to treatment, and drenched or thoroughly sprinkled after application to assure that the mat of turf is penetrated. Repeat at two-month intervals to prevent reinfestation.
Clover mite Leafhoppers	1.2 lb./5,000 sq.ft.(FM)	Broadcast evenly by mechanical spreader. Area should be well irrigated prior to treatment, and drenched or thoroughly sprinkled after application.
Sod webworms	0.75-1.25 lb./100 gal. water/5,000 sq.ft.(EC)	For commercial use only. Area should be well irrigated prior to treatment. The spray must penetrate through the mat of turf to be effective.
	1.0-2.0 qt. of 3.0% conc./ 15-20 gal. water/500 sq.ft. (EC) or 1.0 pt. of 12% conc./15-20 gal. water/500 sq.ft. (EC)	Apply by hose proportioner or pressure sprayer. Area should be well irrigated prior to treatment. The spray must penetrate through the mat of turf to be effective.
	1.25 lb./5,000 sq.ft.(G), 1.15-1.2 lb./ 5,000 sq.ft. (FM)	Broadcast evenly by mechanical spreader. Area should be well irrigated prior to treatment, and drenched or thoroughly sprinkled after application to assure that the mat of turf is penetrated. Repeat as needed.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Herbaceous Plants and Bulbs)		
Flowering plants		
Twospotted spider mite	0.25 lb./100 gal. water(EC,WP)	Foliage application.

(Woody Shrubs, Trees, and Vines)

(Note that some species of plants and pests occur in more than one entry in this section.)

Shrubs
Trees
(including:

Azalea	Holly	Pittosporum
Boxwood	Ixora	Rubber plant
Camellia	Juniper	Sasanqua
Citrus	Ligustrum	Spruce
Cotoneaster	Lilac	Taxus (Yew)
Dogwood	Magnolia	Viburnum
Gardenia	Pine	Willow)

Aphids Camellia scale Euonymus scale Florida red scale Florida wax scale Lecanium scales Oystershell scale Pine needle scale Spider mites	0.5 lb./100 gal. water(EC)	Foliage application. Apply with 1.0 gal. of oil added per 100 gal. water. Repeat as needed. Do not apply to American red bud trees as injury may occur. May cause slight needle drop to some varieties of Taxus (including Anderson yew).
Spruce bud scale Taxus mealybug Tea scale Whiteflies	0.33-0.5 lb. (in 0.5-0.75 gal. oil)/100 gal. water (EC in oil)	Foliage application. For scales, apply when overwintering eggs start to hatch, and if necessary for summer generations, apply when crawlers appear. Use only the higher dosage for lecanium scales. Do not apply to American red bud trees as injury may occur. May cause slight needle drop to some varieties of Taxus (including Anderson yew). Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Shrubs (continued)		
Trees		
Twospotted spider mite	0.25 lb./100 gal. water (EC,WP)	Foliage application. Repeat as needed. May cause slight needle drop to some varieties of Taxus (including Anderson yew).

Arborvitae	Juniper	Oak
Ash	Lilac	Pine
Birch	Magnolia	Poplar
Boxwood	Maple (excluding Japanese maple sugar maple)	Privet
Catalpa		Taxus
Dogwood		Tuliptree
Elm	Mock orange	Willow
Euonymus		

Cottony maple scale Euonymus scale European elm scale European fruit scale Juniper scale Lecanium scales (including European fruit lecanium) Magnolia scale Oystershell scale Pine needle scale	0.3-0.6 lb. (in 2.0-3.0 gal. oil)/100 gal. water(EC in oil)	Dormant application for deciduous plants. Apply after most danger of freezing nights has passed, but before buds have begun to open. Spray on a clear, mild day and do not spray in late afternoon. Do not use on Japanese maple, sugar maple, or any other plants not listed. Formulated with oil.
San Jose scale Scurfy scale Tuliptree scale	0.3-0.4 lb. (in 2.0 gal. oil)/100 gal.	Dormant application for broad-leaved evergreens and conifers. Refer to directions and limitations immediately above. Oil will remove the blue color from Colorado blue spruce. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Azaleas		
Azalea bark scale	0.225 lb. (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
Camellias		
Camellia scale	0.225 lb. (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
Holly		
Holly scale	0.225 lb. (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
Juniper		
Twospotted spider mite	0.167-0.33 lb. (in 0.25-0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Formulated with oil.
Pine		
Pine needle scale	0.33 lb. (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. Apply to the crawler stage emerging from overwintering eggs. Repeat application when second generation of crawlers is observed (usually about August 1), or before overwintering eggs are deposited. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Pittosporum		
Cottonycushion scale	0.3 lb. (in 2.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
Privet		
White peach scale	0.45 lb. (in 3.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
Pyracantha		
Wax scales	0.45 lb. (in 3.0 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.
Roses		
Rose scale	0.225 lb. (in 1.5 gal. oil)/100 gal. water(EC in oil)	Dormant application. Formulated with oil.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Spruce		
Pine needle scale Spruce bud scale	0.33 lb. (in 0.5 gal. oil)/100 gal. water(EC in oil)	Foliage application. For pine needle scale, apply to the crawler stage emerging from overwintering eggs. Repeat application when second generation of crawlers is observed (usually about August 1), or before over-wintering eggs are deposited. For spruce bud scale, apply when new needles have reached nearly full size (about July 1), and repeat one month later. Formulated with oil.
Taxus (Yew)		
Spider mites	0.167-0.33 lb. (in 0.25-0.5 gal. oil)/100 gal. water (EC in oil)	Foliage application. Repeat as needed. May cause slight needle drop on some varieties. Formulated with oil.
(Greenhouse Plants)		
Ornamental plants		
Millipedes	0.312 lb./75 gal. water/ 2,500 sq.ft. of bench space (EC)	Soil treatment. A suitable mask or respirator should be worn during application.

ETHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS		
Domestic dwellings (outdoor areas)		
Clover mite	0.5 lb./2,500 sq.ft.(EC)	For use by trained pest control operators for outdoor areas only. Apply in sufficient water for thorough coverage. Spray walls from the bottom of first floor windows down to the ground. Also treat grounds out to 15 to 20 feet from building. Keep children and animals off treated areas until spray has completely dried.

ETHYL ALCOHOL

PRINCIPAL FORMULATIONS: L

TYPE PESTICIDE: Solvent and adjuvant

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Animals: Beef cattle Dairy cattle Goats Sheep Swine	Extended	82%	Formulated with other ingredients and applied locally as a screw-worm or ear tick remedy.

ETHYL 4,4'-DICHLOROBENZILATE*

PRINCIPAL FORMULATIONS: EC, WP, D, Pr.

TYPE PESTICIDE: Acaricide

Livestock Tolerances

0.5 ppm. in meat, fat, and meat byproducts of cattle and sheep.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL CROPS		
Almonds		0.2 ppm. 21 day preharvest interval through 3.0 lb./A. Foliage application. Treated hulls may be used for livestock feed. Some products may cause injury to the variety Kapareil.
Brown mite European red mite Pacific spider mite Twospotted spider mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
Apples		5.0 ppm. 14 day preharvest interval through 5.0 lb./A. Foliage application. Do not use on Delicious, Jonathan, or McIntosh varieties as fruit injury may occur.
Brown mite McDaniel spider mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application. Do not apply before second cover spray.
European red mite Twospotted spider mite	0.25-0.5 lb./100 gal. water(EC), 0.25-0.37 lb./ 100 gal. water (WP)	Foliage application. Do not apply before second cover spray. For severe infestations, apply twice 7-14 days apart.

*chlorobenzilate; Acaraben

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cantaloupes		5.0 ppm. No preharvest interval through 1.6 lb./A. Foliage application.
Twospotted spider mite	1.0 lb./A.(EC), 1.4-1.6 lb./A.(D)	Foliage application. For EC, when treating young plants that do not require broadcast treatment, reduce dosage in proportion to the area being treated.
Cherries		NF. Do not exceed 4.0 lb./A.
Cherry rust mites	0.37 lb./100 gal. water(EC,WP)	For postharvest application only.
Citrus		5.0 ppm. No preharvest interval through 3.75 lb./A. Foliage application.
Citrus rust mite	0.125-0.25 lb./ 100 gal. water (EC,WP)	Foliage application.
Citrus flat mite Citrus red mite Sixspotted mite Texas citrus mite	0.25 lb./100 gal. water (EC,WP)	Foliage application. For seasonal control of citrus red mite, either repeated applications or combinations with other acaricides are needed.
Citrus bud mite Pacific spider mite Yuma spider mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
Cotton		0.5 ppm (cottonseed). Do not apply after bolls begin to open. Do not graze or feed treated forage or gin waste to livestock.

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cotton (continued)		
Pacific spider mite Schoene spider mite Strawberry spider mite	1.0 lb./A. (EC,WP)	Foliage application. Apply when leaves start to show red and yellow speckling. Direct spray to undersides of leaves.
Twospotted spider mite	1.0 lb./A. (EC)	Foliage application. Apply when leaves start to show red and yellow speckling. Direct spray to undersides of leaves.
Melons (Refer also to Cantaloupes)		5.0 ppm. No preharvest interval through 1.0 lb./A. Foliage application.
Twospotted spider mite	1.0 lb./A.(EC)	Foliage application. When treating young plants that do not require broadcast treatment, reduce dosage in proportion to the area being treated.
Pears		5.0 ppm. 7 day preharvest interval through 5.0 lb./A. Foliage application.
Brown mite McDaniel spider mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application. Do not apply before second cover spray.
European red mite Twospotted spider mite	0.25-0.5 lb./100 gal. water(EC), 0.25-0.37 lb./ 100 gal. water (WP)	Foliage application. Do not apply before second cover spray. For severe infestations, apply twice 7-14 days apart.
Walnuts		0.2 ppm. Do not apply after husks begin to split nor exceed 4.0 lb./A. Foliage application.
European red mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS (Lawns and Turf)		
Grass		
Clover mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	To control mite populations and and prevent their migration to adjoining buildings. Apply as a drenching spray. Repeat in 7-10 days if needed. Refer also to treatment of shrubbery and domestic dwellings.
(Herbaceous Plants and Bulbs)		
Carnations		
Carnation mite Carnation bud mite Twospotted spider mite	0.225%(Pr.)	Thoroughly treat plants. Repeat as needed. Do not apply when temperature exceeds 90°F. Formulated with O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphate; pyrethrins; and piperonyl butoxide.
Chrysanthemums		
Cyclamen mite Privet mite Twospotted spider mite	0.225%(Pr.)	Refer to directions above for Carnations.
Gladioli		
Twospotted spider mite	0.225%(Pr.)	Refer to directions above for Carnations.

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Woody Shrubs, Trees, and Vines)		
Shrubbery		
Clover mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	To control mite populations and prevent their migration to adjoining buildings. Apply as a drenching spray. Repeat in 7-10 days if needed. Refer also to treatment of lawns and domestic dwellings.
Arborvitae		
Spider mites (including spruce spider mite, two-spotted spider mite)	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
	0.225%(Pr.)	Thoroughly treat small plants and spot treat large ones. Repeat as needed. Do not apply when temperature exceeds 90°F. Formulated with O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphate; pyrethrins; and piperonyl butoxide.
Azaleas		
Cyclamen mite Privet mite Southern red mite	0.225%(Pr.)	Refer to Pr. directions above for Arborvitae.
Twospotted spider mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Boxwood		
Twospotted spider mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Camellia		
Southern red mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Elm		
European red mite Twospotted spider mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Hawthorn		
Twospotted spider mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Hemlock		
Spider mites (including spruce spider mite)	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
Holly		
Southern red mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Juniper		
Spruce spider mite Twospotted spider mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Locust		
European red mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Oak		
Southern red mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Pine		
Spruce spider mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Poplar		
Clover mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Rhododendron		
Southern red mite Twospotted spider mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Roses		
European red mite Southern red mite	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Twospotted spider mite	0.25 lb./100 gal. water(EC,WP)	Foliage application.
	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.
Spruce		
Spider mites (including spruce spider mite)	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
	0.225%(Pr.)	Refer to Pr. directions above for Arboritae.

ETHYL 4,4'-DICHLOROBENZILATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Taxus		
Twospotted spider mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	Foliage application.
DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS COMMERCIAL ESTABLISHMENTS (Areas Other Than Edible Products Areas)		
Outdoor Areas		
Clover mite	0.25-0.37 lb./ 100 gal. water (EC,WP)	To control mite populations and prevent their migration to adjoining buildings. Apply as a drenching spray to lawns and shrubbery within 10-15 feet of buildings. Also treat the foundation and outside walls to the height of the first floor windows. Repeat in 7-10 days if needed.
Boats Docks		
Spiders	0.01%(Pr.)	Treat boats by spraying exterior fittings and around all openings such as around canvas tops, side curtains, windows and hatches. Treat docks by spraying all hiding places such as undersides, fenders, and cracks. Wet surfaces and allow to dry without wiping. Formulated with chlordane.

O-ETHYL S,S-DIPROPYL PHOSPHORODITHIOATE*

PRINCIPAL FORMULATION: G

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL CROPS		
Corn		0.02 ppm [corn grain, corn fodder and forage, fresh corn including sweet corn (kernels plus cob with husk removed)].
Corn rootworms (larvae)	0.75-1.05 lb./A. (with 40-inch row spacing) or 0.9-1.2 oz./ 1,000 linear ft. of row(G)	Row soil treatment. Do not apply in the seed furrow. Apply in a 6- to 7-inch band over the row at planting time. Incorporate into top 1/2 inch of soil immediately after application. Use lower rate where attack is light and higher rate where attack is heavy.
Corn (field) (sweet)		0.02 ppm [corn grain, corn fodder and forage, fresh corn including sweet corn (kernels plus cob with husk removed)].
Corn rootworms (larvae)	0.75-1.05 lb./A. (with 40-inch row spacing) or 0.9-1.2 oz./ 1,000 linear ft. of row(G)	Row soil treatment. Cultivation application. Apply after planting up to lay-by. For young corn plantings, apply in a 6- to 7-inch band over the row. On older corn plantings, apply in 3- to 4-inch wide bands on each side of the row directing granules toward the base of the plants. Cover granules with 1/2 to 1 inch of soil immediately after application.

*Ethoprop is now the acceptable common name to be used in the ingredient statement of pesticide labels. This chemical presentation will be issued in the correct alphabetical sequence at a later date.

*Mocap

O-ETHYL S,S-DIPROPYL PHOSPHORODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tobacco		NF.
Wireworms	2.0-2.25 lb./A. (G)	Broadcast soil treatment. Apply from two weeks before up to planting time. Incorporate into top 2 to 4 inches of soil immediately after application.
	6.0 lb./A. (with 42-inch row spacing) or 0.8 oz./100 linear ft. of row(G)	Row soil treatment. For use after fertilizer has been listed or bedded. Apply in an 18- to 24-inch band over the row from one week before up to planting time. Incorporate into top 4 to 6 inches of soil immediately after application.
	6.0-8.0 lb./A. (G)	Broadcast soil treatment. For use before fertilizer application. Apply from one week before up to planting time. Incorporate into top 3 to 4 inches of soil immediately after application. Use only the treated soil for plant beds.

ETHYLENE DIBROMIDE

PRINCIPAL FORMULATIONS: Tech; water-miscible; combinations with other fumigants

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
	(as inorganic bromides)	lbs. actual/A.	
Soil Fumigation			
Asparagus	10	60	Allow 1-3 weeks to lapse between time of application and planting.
Beans: Lima	5	60	Allow 1-3 weeks to lapse between time of application and planting.
Broccoli	75	60	Allow 1-3 weeks to lapse between time of application and planting.
Carrots	75 (with or without tops)	60	Allow 1-3 weeks to lapse between time of application and planting.
Cauliflower	10	60	Allow 1-3 weeks to lapse between time of application and planting.
Corn (sweet)	50 (sweet corn and sweet corn forage)	60	Allow 1-3 weeks to lapse between time of application and planting.

ETHYLENE DIBROMIDE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Soil Fumigation (Continued)	(as inorganic bromides)	lbs. actual/A.	
Cotton	25 (cotton-seed)	60	Allow 1-3 weeks to lapse between time of application and planting.
Cucumbers	30	60	Allow 1-3 weeks to lapse between time of application and planting.
Eggplant	50	60	Allow 1-3 weeks to lapse between time of application and planting.
Fruit tree sites	NF	60	Preplanting soil treatment. Allow 1-3 weeks to lapse between time of application and planting.
Lettuce	30	60	Allow 1-3 weeks to lapse between time of application and planting.
Melons	75	60	Allow 1-3 weeks to lapse between time of application and planting.
Okra	50	108	Preplant application in muck soils only.
		60	Allow 1-2 weeks to lapse between time of application and planting.
Parsnips	75	60	Allow 1-3 weeks to lapse between time of application and planting.
Peanuts	25 (peanuts only)	56	Preplanting application only. Peanut vines and hulls from treated fields are not suitable as feed for meat or lactating animals. To avoid misuse of such hay or hulls do not sell it to another party or otherwise introduce it into commerce. Any forage crop grown on treated soil should not be used as feed for dairy animals or animals being finished for slaughter until 2 years after row treatment or 3 years after overall treatments.

ETHYLENE DIBROMIDE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Soil Fumigation (Continued)	(as inorganic bromides)	lbs. actual/A.	
Peppers	30	60	Allow 1-3 weeks to lapse between time of application and planting.
Pineapples	40	60	Allow 3 days to lapse between time of application and planting.
Potatoes	75	90	For use only in Idaho and Wisconsin where postharvest fumigation with methyl bromide is not practiced. Apply in the fall as a split application of 60 lbs./A. followed in 10 days by 30 lbs./A.
		60	Allow 1-2 weeks to lapse between time of application and planting.
Squash (summer)	50	60	Allow 1-3 weeks to lapse between time of application and planting.
Strawberries	5	60	Allow 1-3 weeks to lapse between time of application and planting.
Sweetpotatoes	50	60	Allow 1-3 weeks to lapse between time of application and planting.
Tomatoes	50	60	Allow 1-3 weeks to lapse between time of application and planting.

ETHYLENE DIBROMIDE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Commodity Fumigation	(as inorganic bromides)		
Beans (string)	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Bananas (Cavandish)	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Bitter melon	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Cantaloupes	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Cherries	25 ppm (total bromides)	2 lbs./1,000 cu. ft.	Single application only. Expose to fumigation for 2 hours.
Citrus	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Corn	50	9 lbs./1,000 bu. plus other fumigants	No limitations.
Cucumbers	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Grain:	(organic bromides exempt on these grains)	7.2 lbs./1,000 bu. plus other fumigants	No limitations.
Barley	50		
Corn	50		
Oats	50		
Popcorn	50		
Rice	50		
Rye	50		
Wheat	50		

ETHYLENE DIBROMIDE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Commodity Fumigation (Continued)	(as inorganic bromides)		
Grain sorghum	50 (organic bromides exempt)	11 lbs./1,000 bu. plus other fumigants	No limitations.
Guavas	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Honey comb	NF	1 lb./1,000 cu. ft.	Fumigation of stored comb and hives. Expose of fumigation for 20 hours.
Litchi fruit	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Litchi nuts	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Mangoes	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Oranges	10	1.5 lbs./1,000 cu. ft.	Expose to fumigation for 2 hours.
Papayas	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Peppers (bell)	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Pineapple	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.
Plums	25 ppm (total bromides)	2 lbs./1,000 cu. ft.	Single application only. Expose to fumigation for 2 hours.
Zucchini squash	10	1 lb./1,000 cu. ft.	Expose to fumigation for 2 hours.

ETHYLENE DICHLORIDE

PRINCIPAL FORMULATIONS: Various formulations with other fumigating ingredients

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
		gals /1,000 bu.	
Apples	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Apricots	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Beans (dry)	NF	6	Postharvest fumigation. Expose to fumigation for 24 hours. No time limitations.
Cherries	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Corn (in shuck)	Exempt	12	Postharvest fumigation. Expose to fumigation for 72 hours. No time limitations.
Grain:			
Barley	Exempt	7.5	Postharvest fumigation. No time limitations.
Corn	Exempt		
Oats	Exempt		
Popcorn	Exempt		
Rice	Exempt		
Rye	Exempt		
Wheat	Exempt		
Nectarines	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Peaches	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Peanuts	NF	6	Postharvest fumigation. Expose to fumigation for 24 hours. No time limitations.
Pears	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Peas (dry)	NF	6	Postharvest fumigation. Expose to fumigation for 24 hours. No time limitations.

ETHYLENE DICHLORIDE

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Pecans	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Plums	NF	0.25 lbs./tree	Apply to trunk and lower branches.
Sorghum (milo)	Exempt	8.5 gals./ 1,000 bu.	Postharvest fumigation. No time limitations.
Agricultural premises:			
Mushroom houses	NF	87.5% spray	Apply by fog generators. Keep house tightly closed for 2 hours.
		2 ozs. of 2.2% dust/1,000 cu. ft. of space	Apply by duster. Keep house closed for at least 2 hours.

ETHYLENE OXIDE

PRINCIPAL FORMULATIONS: Pr

TYPE PESTICIDE: Insecticide

USE	TOLERANCE (ppm)	DOSAGE	LIMITATIONS
Commodity Fumigation:			
Copra	50	2 applications of 75 p.p.m. each*	No limitations.
Black Walnuts	50 (meat)	3 lbs./1000 cu. ft.	Expose to fumigation for 24 hours.
Spices (whole)	50	0.21 lbs./100 lbs.	Expose to fumigation for 24 hours in tight fumigation chamber.

*Applications are made in ships' holds while en route to U.S. ports of entry.

ETHYL FORMATE

PRINCIPAL FORMULATION: S

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
GRAIN, BULK COMMODITIES, PROCESSED FOODS, AND FOOD CONTAINERS		
(Stored Raw Agricultural Food and Feed Commodities)		
Raisins		250 ppm.
Almond moth Confused flour beetle Driedfruit beetle Indian meal moth	4.0-7.0 ml. 98%/25 lb. of product(S)	Apply in final packaging operation.
Raisin moth	5.0-7.0 ml. 98%/30 lb. of product(S)	Apply in final packaging operation. Use the 5 ml. rate during summer months. Use the 7 ml. rate during winter months.
Sawtoothed grain beetle	5.0-7.0 ml. 98%/30 lb. of product(S)	Apply in final packaging operation. Use the 5 ml. rate during summer months. Use the 7 ml. rate during winter months.
Zante Currants		250 ppm.
Almond moth Confused flour beetle Driedfruit beetle Indian meal moth Raisin moth Sawtoothed grain beetle	5.0-7.0 ml. 98%/30 lb. of product(S)	Apply in final packaging operation. Use the 5 ml. rate during summer months. Use the 7 ml. rate during winter months.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE*

PRINCIPAL FORMULATIONS: EC, WP, G

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Almonds		0.5 ppm. 21 day preharvest interval through 2.0 lb./A. Foliage application.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
Apples		3.0 ppm. 21 day preharvest interval through 4.5 lb./A. Foliage application. Do not use some products on McIntosh or related varieties.
Spider mites (including European red mite, Pacific spider mite, Schoene spider mite, Twospotted spider mite, Willamette mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
Fruittree leafroller	0.187/100 gal. water(EC,WP)	Foliage application.

*EPN

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apples (continued)		
Codling moth	0.25/100 gal. water(EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
Plum curculio	0.25-0.375/100 gal. water(EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
Apricots		3.0 ppm. 21 day preharvest interval through 3.0 lb./A. Foliage or trunk applications. A single application of up through 5.0 lb./A. may be made at the time flower buds begin to swell.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite, Willamette mite)	0.125-0.187/100 gal. water(EC)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell against European red mite.
Oriental fruit moth Plum curculio	0.25-0.375/100 gal. water(EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
	5.0/A.(EC)	For Oriental fruit moth, apply once at the time flower buds begin to swell.
Cottony peach scale (crawlers) Lecanium scales (crawlers)	0.312/100 gal. water(EC,WP)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.

O-ETHYL O-(p-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Apricots (continued)		
Lesser peach-tree borer Peachtree borer	0.312-0.75/100 gal. water(EC,WP)	Make applications during appearance of the moths in early to late summer. Apply 2 or 3 sprays to trunk from ground to scaffold limbs timed with moth flight.
Olive scale (crawlers)	0.625/100 gal. water(WP)	Foliage application.
	0.25/100 gal. water(with oil) (WP)	Foliage application. Apply with 1.5% light medium oil.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Beans		3.0 ppm. 21 day preharvest interval through 0.5 lb./A. Foliage application.
Mexican bean beetle Twospotted spider mite	0.125-0.5/A.(EC), 0.125-0.25/A. (WP)	Foliage application. For Mexican bean beetles, make 2-4 applications starting 5-7 days after eggs are laid.
Cherries		3.0 ppm. 21 day preharvest interval through 3.0 lb./A. Foliage application. A single application of up through 5.0 lb./A. may be made at the time flower buds begin to swell.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite, Willamette mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell against European red mite.
Fruittree leafroller	0.187/100 gal. water(EC,WP)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cherries (continued)		
Oriental fruit moth Plum curculio	0.25-0.375/100 gal. water(EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
	5.0/A.(EC)	For Oriental fruit moth, apply once at the time flower buds begin to swell.
Lecanium scales (crawlers)	0.312/100 gal. water(EC,WP)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Lesser peachtree borer Peachtree borer	0.312-0.75/100 gal. water (EC,WP)	Make applications during appearance of the moths in early ro late summer. Apply 2 or 3 sprays to trunk from ground to scaffold limbs timed with moth flight.
Olive scale (crawlers)	0.625/100 gal. water(WP)	Foliage application.
	0.25/100 gal. water(with oil) (WP)	Foliage application. Apply with 1.3% light medium oil.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Citrus		3.0 ppm. 30 day preharvest interval through 10 lb./A. Foliage application. Do not use treated rinds for food or feed.
Citrus red mite	0.25-0.375/100 gal. water(WP)	Use restricted to Florida. Foliage application.
	0.5/100 gal. water(EC,WP)	Foliage application.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Citrus (continued)		
Fruittree leafroller Orange tortrix	0.75-2.25/A. (EC,WP)	Foliage application.
Orangeworm complex	1.25-1.5/A. (EC,WP)	Foliage application.
Citrus thrips	1.5-2.0/A.(EC,WP)	Foliage application. Apply for outside coverage.
Corn		3.0 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application.
Corn rootworms (adults)	0.25-0.5/A.(EC)	Foliage application. For protection of silks.
European corn borer	0.25-0.5/A. (EC,WP), 0.2-0.5/A.(G)	Foliage application. Consult your state Agricultural Experiment Station for proper timing of treatments. For sweet corn, apply when 25% of the plants show evidence of leaf feeding. Repeat at 5-day intervals as needed. From 1-3 treatments may be needed. For second brood, apply when eggs begin to hatch. For field corn, apply 10 days after eggs hatch or when 75% of plants have feeding damage in the leaf whorls. Repeat 7-10 days later if new feeding damage occurs. For second brood, apply when eggs begin to hatch. For corn grown for seed, apply when 25% of plants have feeding damage in the leaf whorls. Repeat in 7 days if new feeding damage occurs. For second brood, apply at pollen shedding and while plants are in the green silk stage.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cotton		0.5 ppm (cottonseed). 3 day preharvest interval through 1.0 lb./A. Foliage application. Do not apply within 3 days of hand picking. Workers entering fields within 24 hours of application should wear protective clothing. Do not feed treated forage or gin trash to livestock.
Cotton fleahopper Cotton leafworm Spider mites Thrips Yellowstriped armyworm	0.312-0.438/A. (EC)	Foliage application. Repeat at 4- to 5-day intervals.
Boll weevil	0.5-1.0/A.(EC)	Foliage application. Apply when plants are fruiting freely and 10-25% of the squares are punctured. Repeat at 5-day intervals.
Bollworm Tobacco budworm	1.0/A.(EC)	Foliage application. For bollworm, apply when eggs and 4 or 5 larvae per 100 terminals are found. Repeat at 5-day intervals.
Grapes		3.0 ppm. 21 day preharvest interval through 0.75 lb./A. Foliage application.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite, Willamette mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
Grape berry moth	0.25/100 gal. water(EC,WP)	Foliage application.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Nectarines		3.0 ppm. 21 day preharvest interval through 3.0 lb./A. Foliage application. A single application of up to 5.0 lb./A. may be made at the time flower buds begin to swell.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite)	0.125-0.187/100 gal. water(EC)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell against European red mite.
Oriental fruit moth Plum curculio	0.25-0.375/100 gal. water(EC)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
	5.0/A.(EC)	For Oriental fruit moth, apply once at the time flower buds begin to swell.
Cottony peach scale (crawlers) Lecanium scales (crawlers)	0.312/100 gal. water(EC)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Olive scale	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Olives		3.0 ppm. Do not apply more than 12 lb./A. per application. Do not apply after July 15.
Cottony peach scale (crawlers) Lecanium scales (crawlers)	0.312/100 gal. water(WP)	Foliage application.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Olives (continued)		
Olive scale	8.0-12/A.(EC), 0.625/100 gal. water(WP)	Foliage application.
	0.25/100 gal. water(with oil) (WP)	Foliage application. Apply with 1.5% light medium oil.
Peaches		3.0 ppm. 21 day preharvest interval through 3.0 lb./A. Foliage application. A single application of up through 5.0 lb./A. may be made at the time flower buds begin to swell.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite)	0.125-0.187/100 gal. water(EC)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell against European red mite.
Oriental fruit moth Plum curculio	0.25-0.375/100 gal. water (EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
	5.0/A.(EC)	For Oriental fruit moth, apply once at the time flower buds begin to swell.
Cottony peach scale (crawlers) Lecanium scales (crawlers)	0.312/100 gal. water(EC,WP)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Lesser peach-tree borer Peachtree borer	0.312-0.75/100 gal. water (EC,WP)	Make applications during appearance of the moths in early to late summer. Apply 2 or 3 sprays to trunk from ground to scaffold limbs timed with moth flight.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Peaches (continued)		
Olive scale (crawlers)	0.625/100 gal. water(WP)	Foliage application.
	0.25/100 gal. water(with oil) (WP)	Foliage application. Apply with 1.5% light medium oil.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Pears		3.0 ppm. 14 day preharvest interval through 4.5 lb./A. Foliage application.
Pear psylla	0.125/100 gal. water(EC,WP)	Foliage application.
Spider mites (including European red mite, Pacific spider mite, Schoene spider mite, Twospotted spider mite, Willamette mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
Fruittree leafroller	0.187/100 gal. water(EC,WP)	Foliage application.
Codling moth	0.25/100 gal. water(EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
Plum curculio	0.25-0.375/100 gal. water (EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pecans		0.5 ppm. 21 day preharvest interval through 3.75 lb./A. Foliage application. Do not graze livestock in treated groves. Do not use in home plantings.
Spider mites (including Twospotted spider mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
Aphids Mites (other than spider mites) Pecan nut casebearer	0.375-0.5/100 gal. water (EC,WP)	Foliage application. For pecan nut casebearer, apply when tips of small nuts begin to turn brown and repeat in 7-10 days if needed.
Hickory shuckworm Pecan weevil	0.42-0.5/100 gal. water(EC), 0.5/100 gal. water(WP)	Foliage application. For hickory shuckworm, make first application at time of shell hardening or about August 10. Repeat twice at 2-week intervals. This treatment will also control the pecan weevil. If pecan weevil is the only pest, apply only twice. Make first application about August 1-10 or when 6 or more weevils can be jarred from a single tree. Make the second application 10-14 days later.
Fall webworm Walnut caterpillar	0.42-0.5/100 gal. water(EC), 0.5/100 gal. water(WP)	Foliage application. Apply while caterpillars are small.
May beetles	0.42-0.5/100 gal. water(EC), 0.5/100 gal. water(WP)	Foliage application. Apply when beetles appear in the spring.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pecans (continued)		
Pecan twig girdler	0.42-0.5/100 gal. water(EC), 0.5/100 gal. water(WP)	Foliage application. Make 3 applications at 2-week intervals beginning when damage appears.
Southern green stink bug	0.42-0.5/100 gal. water(EC), 0.5/100 gal. water(WP)	Foliage application.
Plums Prunes		3.0 ppm (plums, fresh prunes). 21 day preharvest interval through 3.0 lb./A. Foliage application. A single application of up through 5.0 lb./A. may be made at the time flower buds begin to swell.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite)	0.125-0.187/100 gal. water(EC)	Foliage application.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell against European red mite.
Eyespotted bud moth	0.187/100 gal. water(EC,WP)	Foliage application. For use on prunes only.
Oriental fruit moth Plum curculio	0.25-0.375/100 gal water (EC,WP)	Foliage application. Apply at petal fall and every 10-14 days thereafter until control is achieved.
	5.0/A.(EC)	For Oriental fruit moth, apply once at the time flower begin to swell.
Cottony peach scale (crawlers)	0.312/100 gal. water(EC,WP)	Foliage application.
Lecanium scales (crawlers)	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Lesser peach-tree borer Peachtree borer	0.312-0.75/100 gal. water (EC,WP)	Make applications during appearance of the moths in early to late summer. Apply 2 or 3 sprays to trunk from ground to scaffold limbs timed with moth flight.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Plums Prunes (continued)		
Olive scale (crawlers)	0.625/100 gal. water(WP)	Foliage application.
	0.25/100 gal. water(with oil) (WP)	Foliage application. Apply with 1.5% light medium oil.
	5.0/A.(EC)	Apply once at the time flower buds begin to swell.
Soybeans		0.05 ppm (soybeans). Do not graze livestock or feed forage from fields treated with up through 1.0 lb./A. within 21 days after last application.
Corn earworm	1.0/A.(EC)	Foliage application. Apply when counts show one earworm per three feet of row. Repeat as needed.
Sugar beets		3.0 ppm (roots). 21 day preharvest interval through 1.0 lb./A. Foliage application.
Sugarbeet webworm	1.0/A.(EC)	Foliage application.
Tomatoes		3.0 ppm. 3 day preharvest interval through 0.25 lb./A. Foliage application. 21 day preharvest interval from above 0.25 through 1.0 lb./A. Foliage application.
Leafminers (including serpentine leafminers) Potato aphid Southern armyworm Tomato fruitworm Tomato russet mite Twospotted spider mite	0.125-1.0/A.(EC), 0.125-0.25/A. (WP)	Foliage application. Repeat at 7- to 10-day intervals as needed.

O-ETHYL O-(*p*-NITROPHENYL) PHENYLPHOSPHONOTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Walnuts		0.5 ppm. 21 day preharvest interval through 3.75 lb./A. Foliage application. Do not graze livestock in treated groves.
Spider mites (including European red mite, Pacific spider mite, Twospotted spider mite)	0.125-0.187/100 gal. water(EC,WP)	Foliage application.
Fruittree leafroller	0.187/100 gal. water(EC,WP)	Foliage application.
Codling moth Walnut aphid	0.25/100 gal. water(EC,WP)	Foliage application. For codling moth, apply at petal fall and every 10-14 days thereafter until control is achieved.

URBAN AND RURAL OUTDOOR AREAS (PUBLIC HEALTH)

For use only by mosquito abatement district personnel, public health officials, and other trained personnel of public mosquito control programs.

Outdoor Areas

Mosquitoes	0.05-0.1/A.(EC)	Apply when needed in 0.5-25 gallons of water per acre. Use higher dosage rate in areas with mosquitoes resistant to organic phosphates. Hand-operated or power-driven ground sprayers or aircraft may be used. Shrimp and crab in treated areas may be killed. Do not apply where these are important resources.

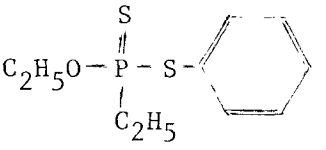
O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

(an organophosphate)

Other name: Dyfonate

Empirical formula: $C_{10}H_{15}OPS_2$ *Molecular weight:* 246.3

Structural formula



Purity: 95% (technical)

Color: Light yellow or amber

Physical state: Liquid

Odor: Pugent, mercaptan-like

Density:

Specific gravity: 1.16 at 25/25° C.

Vapor pressure: 2.1×10^{-4} mm. Hg at 25° C.

Boiling point: 130° C. at 0.1 mm. Hg
100° C. at 0.3 mm. Hg

Flammability: Tag. open cup flash point 355° F.

Melting point:

Corrosive action:

Solubility: Practically insoluble in water (13 ppm at 21° C., 34 ppm at 40° C.). Miscible with kerosene, methyl isobutyl ketone, xylene, acetone and ethanol.

Remarks: Stable under normal conditions. Stable to heat. No decomposition after storage at 100°C. for 16 hours. Subject to hydrolytic decomposition in water at high pH. Stable to light.

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

Representative Labeling for an Emulsifiable Concentrate Formulation

BRAND NAME

Active Ingredients: O-ethyl S-phenyl ethylphosphonodithioate.....44.6%
petroleum hydrocarbon solvent.....44.9%

Inert Ingredients: 10.5%

Precautionary Labeling:

POISON! DANGER: (skull and crossbones) KEEP OUT OF REACH OF CHILDREN.

Poisonous if swallowed, inhaled, or absorbed through the skin. Rapidly absorbed through the skin. Do not get in the eyes, on skin, or on clothing. Do not breathe spray mist.

Wear a mask or respirator of a type passed by the U.S. Bureau of Mines for parathion protection.

Wear rubber gloves, protective clothing, and goggles.

Wash hands, arms, and face thoroughly with soap and water after handling and before eating or smoking. Routinely shower or bathe after work and wash all clothing with soap and hot water before reusing. In case of contact, immediately remove contaminated clothing and wash thoroughly with soap and water.

Not for use or storage in or around the home.

Do not contaminate feed and food.

POISON SYMPTOMS: This product is a highly toxic cholinesterase inhibitor. Symptoms include headache, blurred vision, weakness, nausea, discomfort in the chest, abdominal cramps, vomiting, diarrhea, salivation, sweating, and pinpoint pupils. Always call a physician in case of suspected poisoning. Atropine is antidotal.

Disposal precautions: Rinse spray equipment. Perforate empty metal containers. Bury liquid waste and empty containers in a safe place, away from water supplies.

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

Antidote and First Aid Treatment: If victim has stopped breathing, immediately remove from contaminated area, then start artificial respiration, preferably by mechanical means. If swallowed, and victim is conscious, induce vomiting immediately. Give tablespoon of salt in glass of warm water. Repeat until vomit fluid is clear. Never give anything by mouth to an unconscious person. Have victim lie down and keep quiet. If inhaled, remove patient from contaminated area. For skin, in case of contact, remove contaminated clothing and immediately wash skin thoroughly with soap and water. Avoid abrading the skin. For eyes, in case of contact, flush immediately with water for at least 15 minutes.

Note to Physician: Initial measures include removal of secretions, maintenance of a patent airway, and if necessary, artificial respiration. When cyanosis is relieved, atropine may be administered in large therapeutic doses, repeated as necessary to the point of tolerance. If symptoms warrant further treatment, protopam chloride (pralidoxime chloride, 2-PAM chloride) has shown utility as adjunctive therapy. Never use morphine. Continued absorption of the poison may occur, resulting in a fatal relapse after initial improvement; very close supervision of the patient is indicated for at least 48 to 72 hours.

Wildlife Precautions: This product will kill fish and wildlife. Keep out of lakes, ponds, and streams. Birds feeding on treated areas may be killed. Do not contaminate water by cleaning of equipment or disposal of wastes.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Contents

Manufacturer's Name and Address:

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

Representative Labeling for a Granular Formulation

BRAND NAME

Active Ingredient:

O-ethyl S-phenyl ethylphosphonodithioate.....20%

Inert Ingredients: 80%

Precautionary Labeling:

POISON! DANGER:(skull and crossbones) KEEP OUT OF REACH OF CHILDREN.
Poisonous if swallowed, inhaled, or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Do not breathe dust.

Wear a mask or respirator of a type passed by the U.S. Bureau of Mines for parathion or methyl parathion protection. Wear rubber gloves, protective clothing and goggles. Wash hands, arms, and face thoroughly with soap and water after handling and before eating or smoking. Routinely shower or bathe after work and wash all clothing with soap and hot water before reusing. In case of contact, immediately remove contaminated clothing and wash thoroughly with soap and water.

Not for use or storage in or around the home.

Do not contaminate feed and food.

Disposal precautions: Completely empty the contents of bag and bury unused chemical at least 18 inches deep in an isolated location away from water supplies. Burn bag immediately and stay out of smoke.

Antidote and First Aid Treatment: If victim has stopped breathing, immediately remove from contaminated area, then start artificial respiration, preferably by mechanical means.

If swallowed and victim is conscious, induce vomiting immediately. Give tablespoon of salt in glass of warm water. Repeat until vomit fluid is clear. Never give anything by mouth to an unconscious person. Have victim lie down and keep quiet. If inhaled, remove patient from contaminated area. For skin, in case of contact, remove contaminated clothing and immediately wash skin thoroughly with soap and water. Avoid abrading the skin. For eyes, in case of contact, flush immediately with water for at least 15 minutes.

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

POISON SYMPTOMS: This product is a highly toxic cholinesterase inhibitor. Symptoms include: Headache, blurred vision, weakness, nausea, discomfort in chest, vomiting, abdominal cramps, diarrhea, salivation, sweating, and pinpoint pupils. Always call a physician in cases of suspected poisoning.

Note to Physician: ATROPINE IS ANTIDOTAL. Initial measures include removal of secretions, maintenance of a patent airway, and, if necessary, artifical respiration. When cyanosis is relieved, atropine may be administered in large therapeutic doses, repeated as necessary to the point of tolerance. 2-PAM is also antidotal and may be administered in conjunction with atropine. Never use morphine. Continued absorbtion of the poison may occur, resulting in a fatal relapse after initial improvement; very close supervision of the patient is indicated for at least 48 to 72 hours.

Wildlife Precautions: This product will kill fish and wildlife. Keep out of lakes, ponds, and streams. Birds feeding on treated areas may be killed.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Contents

Manufacturer's Name and Address:

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

Representative Labeling for a Granular Formulation

BRAND NAME

Active Ingredient:

O-ethyl S-phenyl ethylphosphonodithioate.....10%

Inert Ingredients: 90%

Precautionary Labeling:

WARNING! KEEP OUT OF REACH OF CHILDREN.

Harmful or fatal if swallowed. Skin contact or inhalation of dusts may be harmful. Do not get on skin, in eyes, or on clothing. Avoid breathing dust. Wear gloves when handling. In case of contact, wash immediately with soap and water. Always wash thoroughly after handling.

Disposal precautions: Completely empty the contents of bag and bury unused chemical at least 18 inches deep in an isolated location away from water supplies. Burn bag immediately and stay out of smoke.

Wildlife Precautions: This product will kill fish and wildlife. Keep out of lakes, ponds, and streams. Birds feeding on treated areas may be killed.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Weight

Manufacturer's Name and Address

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE*

PRINCIPAL FORMULATIONS: EC, G

TYPE PESTICIDE: Insecticide

General Warnings and Limitations

Do not use or store in or around the home. Do not apply or allow to drift onto areas occupied by unprotected humans, beneficial animals, or onto adjoining food, fiber, or pasture crops.

Broadcast application should be mixed (incorporated) into the soil to a depth of 2 to 3 inches unless otherwise specified.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual/A.	
AGRICULTURAL CROPS		
** Asparagus		0.5 ppm. 30 day preharvest interval through 10 lb./A. Broadcast application.
Garden symphylan	3.0-10(G)	Use restricted to California. Broadcast soil treatment. Incorporate into soil.
Beans (green and dry except lima beans)		0.1 ppm (except lima beans). Do not feed bean forage to livestock.
Garden symphylan	2.0/20-50 gal. water(EC), 2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
Wireworms	4.0(G)	Preplant broadcast soil treatment. Incorporate into top 2-3 inches of soil.
Beets		0.1 ppm.
Cabbage maggot Garden symphylan	2.0/20-50 gal. water(EC), 2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.

*Dyfonate

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual/A.	
	Broccoli Brussels sprouts Cabbage Cauliflower		0.1 ppm.
	Cabbage maggot Garden symphylan	2.0/20-50 gal. water(EC)	For use on seed crops only. Broadcast soil treatment. Incorporate into soil by discing prior to and at time of seeding or transplanting.
	Cabbage maggot	2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
	Corn		0.1 ppm [grain, fresh corn (kernels plus cob with husk removed), forage, fodder]. 45 day preharvest interval through 1.0 lb./A. Row application. Do not feed or graze livestock within 45 days of treatment.
**	European corn borer	1.0/A.(G)	Foliage application. Broadcast over corn by air or ground equipment so that granules will drop into whorls. Or apply by ground equipment in a 6- to 8-inch band over corn rows spaced 30 inches apart or more. Make application when 50% of plants show first generation borer feeding.
	Northern corn rootworm Western corn rootworm	0.75-1.0(EC), 0.5-1.0(G)	Row application. Apply in 6- to 8-inch band over corn rows 38 to 40 inches apart. Incorporate into top 1/2 to 1 inch of soil.
		0.75-1.0(G)	Row application. Apply in 6- to 8-inch band over corn rows 38 to 40 inches apart at time of cultivation. Cover treated band with 2 to 3 inches of soil. Apply in May or June when activity of rootworm larvae is first observed.

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual/A.	
Corn (continued)		
Garden symphylan	2.0-4.0/20-50 gal. water(EC), 2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
Seed corn beetle Seed corn maggot	0.75-1.0(G)	Use restricted to central and mid western corn growing areas. Row application. Apply in 6- to 8-inch band over corn rows 38 to 40 inches apart. Incorporate into top 1/2 to 1 inch of soil.
Wireworms	4.0/20-50 gal. water(EC), 4.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
Mint (peppermint and spearmint)		0.1 ppm (mint and mint hay).
Garden symphylan	2.0/20-50 gal. water(EC), 2.0(G)	Preplant broadcast soil treatment or apply prior to spring growth. Incorporate into soil by discing. Do not apply within 14 days of Sinbar application.
Onions (bulb)		0.1 ppm.
Onion maggot	1.0(EC,G)	Apply as a furrow treatment at time of seeding. Dosage is based upon a 20-inch row spacing. Use EC on organic soils only (soils containing 10% or more organic matter).

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual/A.	
Peanuts		0.1 ppm (peanuts and hay).
* Burrowing bug	1.0-2.0(G)	Use restricted to Texas. Apply in an 18-inch band over rows 36 inches apart. Apply up to 30 days after pegging begins and incorporate lightly into the soil with 1-2 inches of water.
	2.0(G)	Use restricted to Texas. Broadcast soil treatment. Apply up to 30 days after pegging begins and incorporate lightly into the soil with 1-2 inches of water.
Lesser cornstalk borer	1.0-1.4(G)	Apply in a 14-inch band over rows 32 inches or more apart. Apply just prior to pegging and incorporate lightly into soil.
Rootworms	2.0(G)	Apply in an 18-inch band over rows 36 inches apart. Apply just prior to pegging and cultivate lightly into soil.
Potatoes		0.1 ppm.
Garden symphylan Wireworms	2.0-4.0/20-50 gal. water(EC), 2.0-4.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
Radishes		0.1 ppm.
Cabbage maggot Garden symphylan	2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual/A.	
	Strawberries		0.1 ppm.
	Garden symphylan	2.0/20-50 gal. water(EC), 2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
	Sugar beets		0.1 ppm (roots and tops).
	Garden symphylan	2.0-4.0/20-50 gal. water(EC), 2.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
**	Sugarbeet root maggot	1.0-1.5 (G)	Use restricted to Colorado and the Northwest United States sugar beet growing area. At planting band application. Apply in a 7-inch band over sugar beet rows 22 inches or more apart. Incorporate lightly into the soil. Do not place in direct contact with the seed.
	Wireworms	4.0/20-50 gal. water(EC), 4.0(G)	Preplant broadcast soil treatment. Incorporate into soil by discing.
	Sugarcane		0.1 ppm.
	Wireworms	4.0(EC,G)	Apply in 14-inch band on cane rows 60 inches apart. Apply over the top of sugarcane seed pieces immediately ahead of covering discs.
	Sweetpotatoes		0.1 ppm.
	Wireworms	2.0(G)	Use restricted to the Southeastern United States. Preplant broadcast soil treatment. Incorporate into soil by discing.
		4.0(G)	For use in all areas of the United States except for the Southeast. Preplant broadcast soil treatment. Incorporate into soil by discing.

O-ETHYL S-PHENYL ETHYLPHOSPHONODITHIOATE

	Site and Pest	Dosage	Tolerance, Use, Limitations
		lb. actual/A.	
	Tobacco		NF.
**	Corn wireworm Southern potato wireworm Tobacco wireworm	1.0/20-50 gal. water(EC)	For use on flue-cured tobacco only. Preplant broadcast soil treatment prior to bedding and transplanting. Incorporate into soil to a depth of 6 inches by discing and bed up immediately. Formulated with S-propyl butyl= ethylthiocarbamate.
**	Wireworms	1.0-2.0/20-50 gal. water(EC), 1.0-2.0(G)	Preplant broadcast soil treatment prior to bedding and transplanting. Incorporate into soil by discing.
	ORNAMENTALS		
	(Lawns and Turf)		
	Grass		
	Chinch bug	3.0-4.0/A.(G)	Use restricted to the Southeastern United States. Limited to use by commercial applicators and turf management personnel. Do not prewater turf area. Thoroughly water treated area for 10-15 minutes immediately after treatment. Retreat as needed.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE*

PRINCIPAL FORMULATIONS: EC, S, G, Pr.

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Birds feeding on treated areas may be killed.
Do not apply where runoff will occur.

Bee caution: This product is toxic to bees and should not be applied when bees are actively visiting area.

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
AGRICULTURAL CROPS		
Apply EC in amount of water to give complete coverage of foliage, but in no case use less than one gallon of water per acre.		
Alfalfa		5.0 ppm (green forage). 11.0 ppm (hay, chaff). 21 day preharvest interval for hay, forage or seed through 0.5 lb./A. Foliage application. Chaff from seed crop may be used for feed or forage.
Aphids Leafhoppers Mites Thrips	0.375-0.5/A.(EC)	Foliage application.
Lygus bugs	0.375-0.5/A.(EC)	Use restricted to California. Foliage application.
Blackberries		1.0 ppm. 14 day preharvest interval through 2.25 lb./A. Foliage application. Do not apply more than once per season.
Aphids Mites	0.25-0.375/100 gal. water(EC)	Foliage application. Apply up to 600 gallons of dilute spray per acre.

*oxydemetonmethyl

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Broccoli		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Brussels sprouts		1.0 ppm. 3 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Cabbage		1.0 ppm. 7 day preharvest interval through 0.75 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Cantaloupes		
Refer to Melons.		
Cauliflower		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Citrus (nonbearing)		NF.
Aphids Texas citrus mite	0.25-0.375/100 gal. water(EC)	Foliage application. Do not apply to trees that will bear fruit within the next 12 months.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Clover		5.0 ppm (green forage). 11.0 ppm (hay, chaff). 21 day preharvest interval for hay, forage or seed through 0.5 lb./A. Foliage application. Chaff from seed crop may be used for feed or forage.
Aphids Leafhoppers Mites Thrips	0.375-0.5/A.(EC)	Foliage application.
Lygus bugs	0.375-0.5/A.(EC)	Use restricted to California. Foliage application.
Corn		0.5 ppm (in or on corn grain, fresh corn including sweetcorn [kernels plus cob with husk removed]). 3.0 ppm (fodder and forage). 7 day preharvest interval through 0.5 lb./A. for fodder, forage or grain. Foliage application. Do not apply more than once per season.
Aphids Leafhoppers Mites Thrips	0.375-0.5/A.(EC)	Foliage application.
Cotton		0.1 ppm (cottonseed). 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than three times per season. Do not graze treated areas or feed gin trash to dairy or meat animals.
Aphids Mites	0.375-0.5/A.(EC)	Foliage application.
Lygus bugs	0.375-0.5/A.(EC)	Use restricted to California. Foliage application.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Cucumbers		1.0 ppm. No preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Mites	0.375-0.5/A.(EC)	Foliage application.
Eggplant		1.0 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids Mites	0.5/A.(EC)	Foliage application.
Fruit trees (nonbearing) (including Apples, Apricots, Cherries, Crabapples, Nectarines, Peaches, Plums, Prunes, Quince)		NF.
Aphids Mites	0.25-0.375/100 gal. water(EC)	Foliage application. Repeat as needed. Do not apply to trees that will bear fruit within the next 12 months.
Grapes (nonbearing)		NF.
Aphids Mites	0.25-0.375/100 gal. water(EC)	Foliage application. Repeat as needed. Do not apply to vines that will bear fruit within the next 12 months.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Grapefruit Lemons		1.0 ppm. 7 day preharvest interval through 7.5 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Texas citrus mite	0.25-0.375/100 gal. water(EC)	Foliage application.
Lettuce (head)		1.0 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids Mites	0.375-0.5/A.(EC)	Foliage application.
Melons (excluding watermelons) Refer to Watermelons		0.3 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than 3 times per season.
Aphids Mites	0.375-0.5/A.(EC)	Foliage application.
Oranges		1.0 ppm. 7 day preharvest interval through 7.5 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Texas citrus mite	0.25-0.375/100 gal. water(EC)	Foliage application.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pears		0.3 ppm. 30 day preharvest interval through 3.0 lb./A. Foliage application. Do not apply more than once per season.
Aphids Mites	0.25/100 gal. water(EC)	Foliage application.
Peppers		0.75 ppm. No preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than twice per season.
Aphids	0.5/A.(EC)	Foliage application.
Plums		1.0 ppm. 35 day preharvest interval through 2.0 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Mites	0.25/100 gal. water(EC)	Foliage application.
Potatoes		0.1 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application.
Aphids Flea beetles Leafhoppers	0.375-0.5/A.(EC)	Foliage application. Repeat as needed.
Prunes		1.0 ppm. 35 day preharvest interval through 2.0 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Mites	0.25/100 gal. water(EC)	Foliage application.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Pumpkin		0.3 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than once per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Raspberries		1.0 ppm. 14 day preharvest interval through 2.25 lb./A. Foliage application. Do not apply more than once per season.
Aphids Mites	0.25-0.375/100 gal. water(EC)	Foliage application. Apply up to 600 gallons of dilute spray per acre.
Squash (summer)		1.0 ppm. 1 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than once per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Squash (winter)		0.3 ppm. 14 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than once per season.
Aphids	0.375-0.5/A.(EC)	Foliage application.
Strawberries		1.0 ppm. 14 day preharvest interval through 0.75 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Mites	0.375-0.75/A. (EC)	Foliage application.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Sugarbeets		0.3 ppm (beets). 0.5 ppm (tops). 30 day preharvest interval through 0.75 lb./A. for beets and tops. Foliage application. Do not apply more than 3 times per season.
Aphids Leafhoppers Mites	0.375-0.75/A. (EC)	Foliage application.
Turnips		0.3 ppm (roots). 1.0 ppm (tops). 7 day preharvest interval through 0.5 lb./A. for roots. Foliage application. 28 day preharvest interval through 0.5 lb./A. for tops. Foliage application. Do not apply more than twice per season.
Aphids Mites	0.375-0.75/A. (EC)	Foliage application.
Watermelons		0.3 ppm. 7 day preharvest interval through 0.5 lb./A. Foliage application. Do not apply more than twice per season.
Aphids Mites	0.375-0.5/A.(EC)	Foliage application.
Walnuts		0.3 ppm. 30 day preharvest interval through 0.375 lb./A. Foliage application. Do not apply more than once per season.
Aphids Mites	0.375/100 gal. water(EC)	Foliage application.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	

ORNAMENTALS

Do not handle treated plants until spray deposit has dried.

(Herbaceous Plants and Bulbs)

For mixtures formulated with dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate, injury has been observed on certain varieties of carnations and zinnias. Treat only a few plants and observe 4-5 days before treating the entire planting.

Chrysanthemums

Aphids (including melon aphid) Mites (including twospotted spider mite) Thrips	0.187/50 gal. water(EC)	Soil drench for potted plants. Apply 1/2 cup per 6-8 inch pot. Repeat as needed.

Dahlias

Mites (including twospotted spider mite)	0.187/50 gal. water(EC)	Soil drench for potted plants. Apply 1/2 cup per 6-8 inch pot. Repeat as needed.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Flowering plants (including Ajuga Aster Calendula Chrysanthemum Dahlia Fuchsia Pansies Petunia Salvia Snapdragon)		
Aphids Leafhoppers Mites Thrips Whiteflies	0.375/100 gal. water(EC), 1.5 tsp. 2 lb./ gal.(EC)/gal. water	Foliage application. Repeat as needed.
	2 tbsp. 2%/ gal. water(EC)	Foliage application. Formulated with methoxychlor and 2,4-dinitro-6-octyl phenyl crotonate;2,6-dinitro-4-octyl phenyl crotonate; and nitrooctylphenols (principally dinitro).
**	2 tbsp. 0.5 lb./gal. (EC)/gal. water	Foliage application. Not for use in greenhouses. Formulated with dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate.
	0.4%(Pr.)	Foliage application. Hold container 18 inches from plants when treating. Do not apply when temperature is above 90°F., when foliage is wet, or in direct sunlight. Formulated with 2,4-dinitro-6-octyl phenyl crotonate;2,6-dinitro-4-octyl phenyl crotonate; and nitrooctylphenols (principally dinitro).

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Flowering plants (continued)		
Aphids Leafhoppers Mites Whiteflies	4-8/12,000 ft. of row, 1 tbsp./4 sq. ft.(G)	Preplant treatment. Broadcast over seedbed and work into the soil. -or- At planting treatment. Apply in furrow or as a band over the row. Work into soil and water thoroughly. -or- For established plants, broadcast uniformly, and work into the soil. Do not plant edible crops in treated soil at any time during the same season.

(Woody Shrubs, Trees and Vines)

For mixtures formulated with dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate, injury has been observed on Royal purple smoke trees. Flowering cherry, flowering crab apple and hawthorne may also be injured with some of the mixtures formulated with dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate.

Treat only one or two branches of a plant and observe 4-5 days before treating the entire plant.

Christmas trees (grown under cultivation)		
Aphids Mites	0.25-0.375/100 gal. water(EC)	Apply 200-300 gallons per acre. For concentrate application equipment, do not apply required amount of active ingredient per acre in less than one gallon per acre. Do not apply by aircraft or with mist-type ground equipment.
Pine needle scale	0.5-1.5/100 gal. water(EC)	Refer to aphids and mites.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Christmas trees (continued)		
Sitka spruce weevil White pine weevil	1.0%(EC)	Apply 2-4 gallons of spray per acre. Do not apply by aircraft or with mist-type ground equipment.
Cuban laurel		
Cuban laurel thrips	0.125/50 gal. water(EC), 1 tsp. 2 lb./ gal.(EC)/gal. water	Soil drench for plants in containers. Apply 1 quart for each 5 gallons of plant container capacity.
	0.312/50 gal. water(EC), 2.5 tsp. 2 lb./ gal.(EC)/gal. water	Soil drench for established trees where basin method of irrigation is used. Apply 4 gallons per inch of trunk diameter. Keep children and pets away from basin until material has soaked into the soil.
	0.4%(Pr.)	Foliage application. Hold container 18 inches from plants when treating. Do not apply when foliage is wet or in direct sunlight. Formulated with 2,4-dinitro-6-octylphenyl crotonate;2,6-dinitro-4-octyl phenyl crotonate; and nitrooctylphenols (principally dinitro).

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Douglas fir		
Cone moths	0.15 ml./ injector unit (S)	Use restricted to Arizona, California, Nevada, Oregon and Washington. For use by commercial applicators only. Government and private applicator organizations must be approved by the basic producer. Apply to trees with a heavy current cone crop during or shortly after eggs are deposited. Apply units at 5-6 inch intervals around trunk 4 to 4 1/2 feet above the soil and at least 6 feet below branching of the trunk. In cases of short trunks, treat scaffold limbs on the same basis. Sterilize the insertion tool before treating subsequent trees. Do not inject trees less than 2 inches in diameter. Do not inject trees within 2 weeks of any other spray or soil treatment. Do not treat trees that are suffering from lack of moisture, herbicide damage or other stress factor.
Elm		
Elm leaf beetle	0.15 ml./ injector unit (S)	Refer to Douglas fir above. Apply after eggs are deposited and not after severe loss of foliage.
Rose		
Aphids (including rose aphid)	0.187/50 gal. water(EC), 1.5 tsp. 2 lb./ gal.(EC)/gal. water	Soil drench for potted plants. Apply 1/2 cup per 6-8 inch pot. Repeat as needed.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Shrubs Trees Vines (including Acacia Alder Aralia Arborvitae Aucuba Azalea Birch Boxwood Camellia Cuban laurel Cypress Dogwood Gardenia Elm Ficus Fir Flowering crab apple Flowering peach Flowering plum Forsythia Hawthorn Heather Hibiscus Holly Ivy Juniper Liliac Locust Magnolia Maple Oak Oleander Pine Rhododendron Rose Spirea Spruce Taxus Viburnum Weigela)		
Aphids (including melon aphid, rose aphid) Birch leafminer Cuban laurel thrips Holly leafminer complex Leafhoppers Mites (including twospotted spider mite)	0.25-0.375/100 gal. water(EC)	Foliage application. Apply 200-300 gallons per acre. For concentrate application equipment, do not apply required amount of active ingredient per acre in less than one gallon per acre. Do not apply by aircraft or with mist-type ground equipment.
** Thrips Whiteflies	2 tbsp. 0.5 lb./gal.(EC)/gal. water	Foliage application. Formulated with dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate.
	2 tbsp. 2%/gal. water(EC)	Foliage application. Formulated with methoxychlor and 2,4-dinitro-6-octylphenyl crotonate;2,6-dinitro-4-octyl phenyl crotonate; and nitrooctylphenols (principally dinitro).
	0.5-5/tree(G)	Apply 1/2 pound per inch of tree diameter. Broadcast uniformly around plant from trunk out to the drip line. Work into the soil and water thoroughly.

S-[2-(ETHYLSULFINYL)ETHYL] O,O-DIMETHYL PHOSPHOROTHIOATE

Site and Pest	Dosage	Tolerance, Use, Limitations
	lb. actual	
Shrubs (continued) Trees Vines		
Aphids Birch leafminer Cuban laurel thrips Holly leafminers Leafhoppers Mites Thrips Whiteflies (continued)	0.4%(Pr.)	Foliage application. Hold container 18 inches from plants when treating. Do not apply when temperature is above 90°F., when foliage is wet or in direct sunlight. Formulated with 2,4-dinitro-6=octyl phenyl crotonate;2,6-dinitro-4-octyl phenyl crotonate;and nitrooctylphenols (principally dinitro).
Pine needle scale	0.5-1.5/100 gal. water(EC)	Apply 200-300 gallons per acre. For concentrate application equipment, do not apply required amount of active ingredient per acre in less than one gallon per acre. Do not apply by aircraft or with mist-type ground equipment.
Sitka spruce weevil White pine weevil	1.0%(EC)	Apply 2-4 gallons of spray per acre. Do not apply by aircraft or with mist-type ground equipment.

(Greenhouse Plants)

Injury has occured in greenhouses on Easter lilies and the chrysanthemum varieties Hurricane, Iceburg, Whitetop and Pennant. When large plantings are to be treated, apply to only a few plants and observe for varietal sensitivity before treating the entire planting.

Flowering plants

Refer to (Herbaceous Plants and Bulbs).

EUGENOL

PRINCIPAL FORMULATION: Bait

TYPE PESTICIDE: Insect attractant

General Warnings and Limitations

Use only in areas not accessible to children and pets.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
ORNAMENTALS		
(Herbaceous Plants and Bulbs) (Woody Shrubs, Trees and Vines)		
(Japanese beetle) (adults)	2.6%(bait)	Reduces damage to plants susceptible to attack. Add several ounces of bait to the perforated container. Hang baited traps on a stand about 4 feet above the ground in full sunlight, near infested foliage. Empty traps and dispose of beetles about dusk when they are inactive. Bait should be effective for 4-6 weeks under ordinary weather conditions. For best results, add a little fresh bait every few days. Formulated with 2-phenylethyl propionate.

FAMPHUR

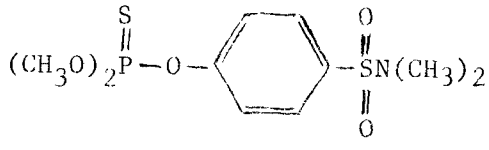
(an organophosphate)

0,0-dimethyl 0-[*p*-(dimethylsulfamoyl) phenyl] phosphorothioate

Other name: Warbex

Empirical formula: $C_{10}H_{16}NO_5PS_2$ *Molecular weight:* 325.4

Structural formula



Purity: 95% *Color:*

Physical state: Crystalline *Odor:*

Density: *Specific gravity:*

Vapor pressure: *Boiling point:*

Flammability: *Melting point:* 55° C.

Corrosive action:

Solubility: Slightly soluble in water (10 mg./100 ml.). Very soluble in chloroform and carbontetrachloride. Slightly soluble in polar solvents. Insoluble in hexane and heptane.

Remarks:

FAMPHUR

Representative Labeling for a Solution (Pour-On) Formulation

BRAND NAME

Active Ingredients:

famphur; 0,0-dimethyl 0-[*p*-(dimethylsulfamoyl) phenyl] phosphorothioate.....13.2%
xylene 46.2%

Inert Ingredients: 40.6%

Precautionary Labeling:

WARNING: KEEP OUT OF REACH OF CHILDREN.

WARNING. Harmful or fatal if swallowed or absorbed through skin. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Do not contaminate food or feed products. Combustible. Keep away from heat, sparks, and open flame.

Disposal precautions: Perforate or crush, and bury container away from water supplies when empty. Never reuse.

Wildlife Precautions: This product is toxic to birds and other wildlife. Keep out of lakes, streams, or ponds.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No. Net Weight

Manufacturer's Name and Address

FAMPHUR

Representative Labeling for a Feed Premix Concentrate Formulation

BRAND NAME

Active Ingredient:

famphur; 0,0-dimethyl 0-[*p*-dimethysulfamoyl)phenyl] phosphorothioate.....33.3%

Inert Ingredients: 66.7%

Precautionary Labeling:

WARNING. KEEP OUT OF REACH OF CHILDREN.

Hazardous by inhalation, skin contact, or swallowing. Repeated inhalation or skin contact may, without symptoms, progressively increase susceptability to poisoning. Do not get in eyes, on skin, or clothing. Do not breathe dust.

Disposal precautions: Destroy empty containers by burning. Stay away from smoke and fumes.

Wildlife Precautions: This product is toxic to birds and other wildlife. Keep out of lakes, streams, or ponds.

Directions for Use: Do not use except as specified on this label. Observe all precautionary and warning statements. (Directions must specify the use for which the product is intended and must be adequate to protect the public.)

EPA Registration No.

Manufacturer's Name and Address

FAMPHUR*

PRINCIPAL FORMULATIONS: S, feed premix

TYPE PESTICIDE: Insecticide

General Warnings and Limitations.

Cattle from or in Texas, Oklahoma, Kansas, Louisiana, Mississippi, Arkansas, eastern third of New Mexico, Colorado, and southwestern half of Missouri should not be treated after October 1; cattle from the rest of the U.S. not after November 1.

On occasion, cattle treated with famphur may show signs of organophosphate poisoning such as excessive salivation, stiffness of limbs, and dyspnea. Atropine is antidotal. A veterinarian should be consulted.

Do not use any drug, pesticide, insecticide, or other chemicals having cholinesterase- inhibiting activity either simultaneously or within a few days before or after treatment with famphur.

Do not treat calves less than 3 months old; dehydrated animals; animals stressed from shipment, castration, over-excitement, or dehorning; and sick or convalescent animals.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
LIVESTOCK AND POULTRY		
Beef cattle Dairy cattle (non-lactating)		*0.1 ppm (meat, fat, and meat by-products of cattle).* 21 day prefreshening interval through 0.032 lb./adult animal. Pour-on application. 35 day preslaughter interval through 0.032 lb./adult animal. Pour-on application.

*O,O,-dimethyl O-[p-(dimethylsulfamoyl)phenyl] phosphorothioate, Warbex

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Beef cattle (continued) Dairy cattle (non-lactating)		
Cattle grubs (Cattle sucking lice)	0.008 lb./200 lb. body weight to max. of 0.032 lb./800 lb. and over of body weight (S)	Pour-on application. To control cattle grubs and reduce cattle lice infestations, pour famphur from the shoulder to the tail head. Apply as soon as possible after heel fly activity ceases. Do not repeat treatment. Do not apply if weather conditions indicate possibility of rain or are such that animals will get wet. Remove swine from areas where runoff occurs.
Beef cattle Dairy cattle (non-lactating)		4 day preslaughter interval through 1.1 mg./lb. of body weight/day for 30 days or through 2.3 mg./lb. of body weight/day for 10 days. Feed premix. 21 day prefreshening interval through 1.1 mg./lb. of body weight/day for 30 days or through 2.3 mg./lb. of body weight/day for 10 days. Feed premix.
Cattle grubs (Cattle sucking lice)	1.1 mg./lb. body weight/ day (feed premix)	Feed premix. For control of cattle grubs and to aid in controlling cattle sucking lice, mix sufficient quantities with feed for 30 days to provide correct dosage.
Cattle grubs	2.3 mg./lb. body weight/ day (feed premix)	Feed premix. Mix sufficient quantities with feed for 10 days to provide correct dosage.

FENTHION*

PRINCIPAL FORMULATIONS: EC, S, D, G

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Bee caution: This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL CROPS		
Alfalfa		5.0 ppm (alfalfa). 18 ppm (alfalfa hay). No preharvest interval through 0.1 lb./A.(spray) or 0.2 lb./A. (granular). Broadcast or foliage application. Do not apply more than once per cutting.
Mosquitoes	0.05-0.1 lb./A. (EC), 0.05-0.2 lb./A. (G)	Foliage or broadcast application. Livestock need not be removed from treated area.
Pasture grass		5.0 ppm (grass). 18 ppm (grass hay). No preharvest interval through 0.1 lb./A.(spray) or 0.2 lb./A. (granular). Broadcast or foliage application. Do not apply more than 4 times per year.
Mosquitoes	0.05-0.1 lb./A. (EC), 0.05-0.2 lb./A. (G)	Foliage or broadcast application. Livestock need not be removed from treated area.

** *O,O-dimethyl O-[3-methyl-4-(methylthio)phenyl]phosphorothioate or O,O-dimethyl O-[4-(methylthio)-*m*-tolyl] phosphorothioate

*Baytex

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Rice		0.1 ppm (rice). 0.5 ppm (rice straw). 30 day preharvest interval through 0.1 lb./A. Foliage application. Do not apply more than 3 times per crop year.
Mosquitoes	0.05-0.1 lb./A. (EC)	Use restricted to California. Foliage application.

LIVESTOCK AND POULTRY

Do not apply directly (spray or pour-on) to sick, convalescent, or stressed animals.
Do not spray animals less than 6 months or use pour-on application on animals less than 3 months old.
Do not apply directly (spray or pour-on) for 10 days before or after shipping or weaning, or after exposure to contageous or infectious diseases.
Do not apply in conjunction with or within a few days of treatment with other cholinesterase-inhibiting drugs, pesticides, or other chemicals including other fenthion products.

(Dairy Livestock)

Cattle, dairy (non-lactating)		0.01 ppm (milk). 28 day prefreshening interval through 0.5 fl. oz. of 3.0% solution/100 lb. of body weight. Pour-on application. If freshening occurs within 28 days after treatment, do not use milk for human consumption for balance of the 28-day interval.
* Cattle grubs Lice	0.5 fl. oz. of 3.0% solution/ 100 lb. of body weight(S)	Pour-on application. Apply along backline. For cattle grubs, apply as soon as possible after adult fly activity has ceased. Consult the Cooperative Agricultural Extension Service for proper timing of treatment. For lice, a second application may be made for reinfestations, but not within 35 days of initial treatment.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Livestock Intended for Slaughter)		
Cattle, beef		0.1 ppm (meat, fat, meat by-products).
*		35 day preslaughter interval through 0.5 fl. oz. of 3.0% solution/100 lb. of body weight. Pour-on application.
*		45 day preslaughter interval through 0.5 fl. oz. of 3.0% solution/100 lb. of body weight if a second pour-on application is used.
		45 day preslaughter interval through 2.0 lb./100 gallons of water. Spray application.
		No preslaughter interval for backrubber applications.
Cattle grubs	2.0 lb./100 gal. water(EC)	Spray application. Apply with high pressure (250-300 psi) to thoroughly wet the skin. Apply as soon as adult fly activity has ceased, but at least 6 weeks prior to emergence of grubs in the back. Consult the Cooperative Agricultural Extension Service for proper timing of treatment.
	0.5 fl. oz. of 3.0% solution/ 100 lb. of body weight(S)	Pour-on application. Apply along backline. Refer to timing information immediately above.
Horn fly	1.0 lb./13 gal. oil(S)	Backrubber application. Locate device in areas where cattle congregate for salt or water, or in regular routes of travel. Refill or resaturate device as needed.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Cattle, beef (continued)		
Lice	0.5 lb./100 gal. water(EC)	Spray application. Apply with high pressure (250-300 psi) to thoroughly wet the skin. A second application may be made for reinfestations.
	0.5 fl. oz. of 3.0% solution/ 100 lb. of body weight(S)	Pour-on application. Apply along backline. A second application may be made for reinfestations, but not within 35 days of initial treatment.
AGRICULTURAL PREMISES AND EQUIPMENT		
(Dairy Barns and Milk Rooms) (Poultry Houses and Yards)		
Dairy Barns Poultry Houses		0.01 ppm (milk). 0.1 ppm (meat, fat, meat by-products of cattle and poultry).
Ants Cockroaches Crickets	0.125 lb./gal. water/500 sq. ft.(EC)	Apply as a coarse spray or by paint brush to areas frequented by insects. Repeat as needed. Do not apply directly to animals or birds. Do not contaminate feed, drinking water, milk, or milk handling equipment.
Muscoid flies Mosquitoes (adults)	0.062-0.125 lb./ gal. water/500 sq. ft.(EC)	Apply to interior and exterior surfaces frequented by insects. Also treat around windows, doors, and outdoor light fixtures. Repeat as needed. Do not apply directly to animals or birds. Do not contaminate feed, drinking water, milk, or milk handling equipment.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Animal Buildings Other Than Dairy and Poultry)		
Cattle barns (nondairy)		0.1 ppm (meat, fat, meat by-products of cattle).
Ants Cockroaches Crickets	0.125-0.188 lb./ gal. water/500 sq. ft.(EC)	Apply as a coarse spray or by paint brush to areas frequented by insects. Use higher dosage for initial treatment and for severe cockroach infestations. Use lower dosage for subsequent treatments. Repeat as needed. Do not apply directly to animals. Do not contaminate feed or drink-in water.
Muscoid flies including house fly) Mosquitoes (adults)	0.062-0.125 lb./ gal. water/500 sq. ft.(EC)	Apply to interior and exterior surfaces frequented by insects. Also treat around doors, windows, and outdoor light fixtures. Repeat as needed. Do not apply directly to animals. Do not contaminate feed or drinking water.
Mosquitoes (larvae)	0.02-0.075 oz./ 1,000 sq. ft.(G)	Broadcast evenly over mosquito breeding sites. Repeat as needed.
(Outdoor Areas)		
Outdoor areas		
Ants Fleas	0.125-0.188 lb./ gal. water/500 sq. ft.(EC)	Apply as a coarse spray or by paint brush to outside areas where there is no vegetation. For ants, also thoroughly wet ant hills and runways. Repeat as needed.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Outdoor areas (continued)		
Mosquitoes (larvae)	0.02-0.075 oz./ 1,000 sq. ft. or 0.05-0.2 lb./A. (G)	Apply to mosquito breeding areas such as garbage dumps, manure piles and other areas with standing water. Do not use on crops used for food or forage. Do not use treated manure on soil in which food crops are to be grown.

HUMANS, PETS AND OTHER ANIMALS

* This chemical is also classified as a drug for use against certain internal parasites. These uses are not included here as they are under the purview of the Federal Food, Drug, and Cosmetic Act administered by the Food and Drug Administration, Department of Health, Education, and Welfare.

Dogs		Only for sale by or on the order of a licensed veterinarian.
American dog tick Brown dog tick	70 mg. of 10.5% solution/10 lb. of body weight (S)	Subcutaneous injection. May be repeated at 2-week intervals for improved efficacy and continued control.
Dog flea	40 mg. of 10.5% solution/10 lb. of body weight (S)	Subcutaneous injection. May be repeated at 2-week intervals for continued control.
Dog follicle mite	70 mg. of 10.5% solution/10 lb. of body weight (S)	Subcutaneous injection. For control of demodectic mange. Repeat at 2-week intervals for 3 treatments to reduce the incidence of relapses. Supportive nutritional and antibiotic therapy may be needed for complicated cases.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
**		
**		
ORNAMENTALS		
(Herbaceous Plants and Bulbs)		
Begonias Chrysanthemums Geraniums Lilies Marigolds Peonies Phlox Petunias Snapdragons Verbenas Zinnias		
Ants Aphids Armyworm Leafhoppers	1.0 lb./100 gal. water(EC)	For use only by commercial pest control operators and commercial nurserymen. Apply as fine mist. Repeat as needed. Do not treat plants in direct sunlight, during the heat of day, or when the temperature exceeds 90°F.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
(Woody Shrubs, Trees and Vines)		
Ash Aspen Birch Dogwood Eunonymus Maple (excluding Sugar maple) Oak Roses (excluding Delightful variety) Sweet gum Tuliptree Vibernum		
Ants Aphids Bagworm Leafhoppers Lecanium scales Mites	1.0 lb./100 gal. water(EC)	For use only by commercial pest control operators and commercial nurserymen. Apply as fine mist. Repeat as needed. Do not treat plants in direct sunlight, during the heat of day, or when the temperature exceeds 90°F. Do not treat the rose variety Delightful, or sugar maple.
Arborvitae Juniper		
Ants Aphids Bagworm Juniper scale Lecanium scales Mites	1.0 lb./100 gal. water(EC)	For use only by commercial pest control operators and commercial nurserymen. Apply as a fine mist. Repeat as needed. Do not treat plants in direct sunlight, during the heat of day, or when the temperature exceeds 90°F.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Spruce Yew		
Ants Aphids Bagworm Mites	1.0 lb./100 gal. water(EC)	For use only by commercial pest control operators and commercial nurserymen. Apply as a fine mist. Repeat as needed. Do not treat plants in direct sunlight, during the heat of day, or when the temperature exceeds 90°F.

FOREST, NONAGRICULTURAL AND WASTELANDS

(Refer also to specific plants and pests under woody ornamentals.)

Outdoor areas

Area abatement applications are to be made only by public health officials, mosquito abatement district personnel, public mosquito control officials, and commercial pest control operators.
Apply wherever insect pests are a problem except to food crops and in water where shrimp, crabs, or crayfish are of value.
Do not apply to ponds, lakes, streams, or other bodies of water containing fish.

Flies Midges Mosquitoes (adults)	0.08 lb./A.(S)	Apply by fog generator to areas such as woodlands, ponds, and recreational areas.
	1 part 15% solution/15 parts solvent (S)	Apply by fog generator to areas such as woodlands, ponds, and recreational areas. Use mineral spirits or kerosene as the solvent. Apply one gallon of mixture per acre.
Mosquitoes (larvae)	1 part 15% solution/20 parts solvent (S)	Apply as a spray. Treat breeding sites at the rate of one gallon of spray per acre. Use mineral spirits or kerosene as the solvent.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AQUATIC AREAS		
Area abatement applications are to be made only by public health officials, mosquito abatement district personnel, public mosquito control officials, and commercial pest control operators.		
Apply wherever insect pests are a problem except to food crops and in water where shrimp, crabs, or crayfish are of value.		
Do not apply to ponds, lakes, streams, or other bodies of water containing fish.		
Aquatic areas		
Flies Midges	0.08 lb./A.(S)	Apply by fog generator over areas such as ponds, marshes, and swamps.
Mosquitoes (adults)	4.0-8.0 lb./ 100 gal. oil(S)	Apply by thermal fog or nonthermal aerosol generator. Calibrate equipment to deliver 40 gallons per hour at a machine speed of 5 m.p.h. to cover a swath width of up to 350 feet. Repeat as needed.
	0.08 lb./A.(S)	Apply by fog generator over areas such as ponds, marshes, and swamps.
	0.05-0.1 lb./A. (EC)	Apply by mist spray applicators. Dilute with water. Allow at least 3 weeks between applications. For aerial application, dilute with water or suitable oil. Allow at least 3 weeks before applications.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Aquatic areas (continued)		
Mosquitoes (larvae)	0.05 lb./A. (EC,S)	Apply as a light uniform spray. Dilute with water or a suitable oil. Treat moist areas, standing pools, marshes, swamps, tidal areas, and other mosquito breeding sites.
	0.05-0.2 lb./A. (G)	Broadcast uniformly over moist areas, standing pools, marshes, swamps, tidal areas, and other mosquito breeding sites.
DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS		
Indoor areas		
Ants Cockroaches Crickets	0.125-0.188 lb./gal. water/500 sq. ft.(EC), 0.094-0.156 lb./gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	For use by commercial pest control operators only. Apply as a coarse spray or by paint brush. Use higher EC dosage for initial treatment and for severe cockroach infestations. Use lower EC dosage for subsequent treatments. Repeat as needed. Do not use in areas where children or pets can come into direct contact with treated surfaces. Remove fish and other pets from room before spraying.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Indoor areas Outdoor areas		
Muscoid flies Mosquitoes	0.062-0.125 lb./ gal. water/500 sq. ft.(EC), 0.094-0.156 lb./ gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	For use by commercial pest control operators only. Apply as a coarse spray or by paint brush. Apply to interior and exterior surfaces frequented by insects. Also treat around doors, windows, and outdoor light fixtures. Repeat as needed. Do not use in areas where children or pets can come into direct contact with treated surfaces. Remove fish and other pets from room before spraying.
Wasps	0.125-0.188 lb./ gal. water(EC), 0.094-0.156 lb./ gal. oil(S), 3.0%(S)(in oil)	For use by commercial pest control operators only. Apply as a coarse spray to nest after dark when all wasps have returned to the nest.
Outdoor areas		
Ants Fleas	0.125-0.188 lb./ gal. water/500 sq. ft.(EC), 0.094-0.156 lb./ gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	For use by commercial pest control operators only. Apply as a coarse spray to areas where there is no vegetation. For ants, also thoroughly wet ant hills and runways. Repeat as needed.
Blow flies House fly Moths Vinegar flies	1.0 gal. of 1.0% solution/A.(S)	For use by commercial pest control operators only. Apply by fog generator. Treat the immediate outside perimeter of buildings and outside surfaces of doors, windows, and around light fixtures.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Outdoor areas (continued)		
Mosquitoes	1.0 gal. of 0.5% solution/A.(S)	Apply by fog generator. Thoroughly treat breeding and resting sites such as heavy foliage and refuse storage areas.
	1.0 gal. of 1.0% solution/A.(S)	For use by commercial pest control operators only. Apply by fog generator. Treat the immediate outside perimeter of buildings and outside surfaces of doors, windows, and around light fixtures.

URBAN AND RURAL OUTDOOR AREAS (PUBLIC HEALTH)

Area abatement applications are to be made only by public health officials, mosquito abatement district personnel, public mosquito control officials, and commercial pest control operators.
Apply wherever insect pests are a problem except to food crops and in water where shrimp, crabs, or crayfish are of value.
Do not apply to ponds, lakes, streams, or other bodies of water containing fish.

Outdoor areas

(Refer also to specific sites such as Forest, Nonagricultural and Wastelands; Aquatic areas; and Domestic Dwellings, Medical Facilities and Schools.)

Flies	0.08 lb./A.(S)	Apply by fog generator over all areas such as refuse piles, dumps, and in recreation sites.
	1 part 15% concentrate/ 10 parts solvent(S)	Apply by ground spray equipment at the rate of one gallon of spray per acre. Solvent may be mineral spirits or kerosene.
Midges	0.08 lb./A.(S)	Apply by fog generator over areas such as ponds, marshes, swamps, and areas with grass or heavy foliage.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Outdoor areas (continued)		
Mosquitoes (adults)	4.0-8.0 lb./ 100 gal. oil(S)	Apply by thermal fog or nonthermal aerosol generator. Calibrate equipment to deliver 40 gallons per hour at a machine speed of 5 m.p.h. to cover a swath width of up to 350 feet. Repeat as needed.
	0.07-0.14 lb./ A.(S)	Apply by fog generator over areas such as ponds, marshes and swamps. Dilute with suitable oil.
	1 part 10% concentrate/ 7-14 parts oil(S)	Apply by fog generator whenever needed.
	0.05-0.1 lb./ A.(EC)	Apply by mist spray applicator. Dilute with water. Allow at least 3 weeks between applications. For aerial application, dilute with water or suitable oil. Allow at least 3 weeks between applications.
	1 part 15% concentrate/ 10 parts solvent(S)	Apply by ground spray equipment. Solvent may be mineral spirits or kerosene. Apply one gallon of spray per acre.
	0.1 lb./A.(D)	Dust wet grassy or brushy areas, standing water, and around edges of large ponds, lakes, marshes, swamps, and tidal areas. Also treat around catch basins and similar areas where mosquitoes breed and congregate.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Outdoor areas (continued)		
Mosquitoes (larvae)	0.05 lb./A. (EC,S)	Apply as a light uniform spray. Dilute with water or a suitable oil. Treat moist areas, standing pools, marshes, swamps, tidal areas, and other mosquito breeding sites.
	0.05-0.2 lb./A. (G)	Broadcast uniformly over moist areas, standing pools, marshes, swamps, tidal areas, and other mosquito breeding sites.
	0.05 lb./A.(D)	Dust moist areas, standing water, and around edges of large ponds, lakes, marshes, swamps, and tidal areas. Also treat around and in catch basins and similar areas where mosquitoes breed.

COMMERCIAL ESTABLISHMENTS

(Areas Other Than Edible Products Areas)

For use by pest control operators only.
Do not use in edible products areas of food processing plants, restaurants, or other areas where food is commercially prepared or processed.
Do not use in serving areas while food is exposed.

FENTHION

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Indoor areas		
Ants	0.125-0.188 lb./gal. water/500 sq. ft.(EC), 0.094-0.156 lb./gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	Apply as a coarse spray or paint brush. Use higher EC dosage for initial treatment. Use lower EC dosage for subsequent treatments. Repeat as needed. Do not use in areas where children or pets can come into direct contact with treated surfaces. Remove fish and other pets from room before spraying.
	1.0 gal. of 1.0% solution/500-1,000 sq. ft. (S)	Apply as a coarse spray or by paint brush. Use higher dosage for initial treatment and lower dosage for subsequent ones. Repeat as needed. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
Cockroaches (including American cockroach German cockroach Oriental cockroach) Crickets	0.125-0.188 lb./gal. water/500 sq. ft.(EC), 0.094-0.156 lb./gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	Apply as a coarse spray or by paint brush. Use higher EC dosage for initial treatment and for severe cockroach infestations. Use lower EC dosage for subsequent treatments. Repeat as needed.
	1.0 gal. of 1.0% solution/500-1,000 sq. ft.(S)	Apply as a coarse spray or by paint brush to approximately 20% of the wall and floor surface area. Confine treatment basically to floor-wall junctures and bases of equipment. Products formulated with 2,2-dichlorovinyl dimethyl phosphate or pyrethrins and piperonyl butoxide.
	1 part 15% concentrate/10 parts solvent(S)	Apply at a rate of one gallon of spray per 500 sq. ft. to areas frequented by insects. Solvent may be mineral spirits or kerosene.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Indoor areas (continued)		
Cadelle (exposed stages) Confused flour beetle (exposed stages) Moths (larvae) Sawtoothed grain beetle (exposed stages)	1.0 gal. of 1.0% solution/1,000 sq. ft.(S)	Apply by low pressure to approximately 20% of the wall and floor surface area. Confine treatment basically to the floor-wall junctures and bases of equipment. Formulated with pyrethrins and piperonyl butoxide.
Angoumois grain moth (exposed stages) Indian meal moth (exposed stages) Mediterranean flour moth(exposed stages) Vinegar flies	1.0 gal. of 1.0% solution/1,000 sq. ft.(S)	Apply by low pressure to surfaces where insects alight, but not to areas where insects may fall into food or onto food surfaces. Formulated with pyrethrins and piperonyl butoxide.
Indoor areas Outdoor areas		
Muscoid flies (including house fly) Mosquitoes	0.062-0.125 lb./gal. water/500 sq. ft.(EC), 0.094-0.156 lb./gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	Apply as a coarse spray or by paint brush. Apply to interior and exterior surfaces frequented by insects. Also treat around doors, windows, and outdoor light fixtures. Repeat as needed. Do not use in areas where children or pets can come into direct contact with treated surfaces. Remove fish and other pets from room before spraying.
	1.0 gal. of 1.0% solution/500-1,000 sq. ft.(S)	Apply as a coarse spray or by paint brush to interior and exterior surfaces frequented by insects, but not to areas where insects may fall into food or onto food surfaces. Use higher rate for initial treatment and lower rate for subsequent treatments. Formulated with 2,2-dichlorovinyl dimethyl phosphate or pyrethrins and piperonyl butoxide.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Indoor areas (continued)		
Outdoor areas		
Muscoid flies Mosquitoes (continued)	1 part 15% concentrate/ 10 parts solvent(S)	Apply at a rate of one gallon of spray per 500 sq. ft. to areas where insects alight. Solvent may be mineral spirits or kerosene.
Wasps	0.125-0.188 lb./ gal. water(EC), 0.094-0.156 lb./ gal. oil(S), 3.0%(S)(in oil)	Apply as a coarse spray to nest after dark when all wasps have returned to the nest.
	1.0%(S)	Refer to directions immediately above. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
	1 part 15% concentrate/ 10 parts solvent(S)	Apply at a rate of one gallon of spray per 500 sq. ft. to surfaces where insects alight. Solvent may be mineral spirits or kerosene.
Outdoor areas		
Ants Fleas	0.125-0.188 lb./ gal. water/500 sq. ft.(EC), 0.094-0.156 lb./ gal. oil/500 sq. ft.(S), 3.0%(S)(in oil)	Apply as a coarse spray to areas where there is no vegetation. For ants, also thoroughly wet ant hills and runways. Repeat as needed.
	1.0 gal. of 1.0% solution/500-1,000 sq. ft.(S)	Refer to directions immediately above. Formulated with 2,2-dichlorovinyl dimethyl phosphate.
Blow flies House flies Mosquitoes Moths Vinegar flies	1.0 gal. of 1.0% solution/A.(S)	Apply by fog generator. Treat the immediate outside perimeter of buildings and outside surfaces of doors, windows, and around light fixtures.

FERBAM*

PRINCIPAL FORMULATIONS: susp., WP, D

TYPE PESTICIDE: Repellent

AGRICULTURAL CROPS
ORNAMENTALS
FOREST, NONAGRICULTURAL AND WASTELANDS

Applications of ferbam to plant foliage for fungicidal activity will repel Japanese beetles. Refer to the EPA Compendium of Registered Pesticides, Volume II (Fungicides and Nematicides) and to specific labels for the plants to which ferbam may be applied.

*ferric dimethyl dithiocarbamate

FORMETANATE HYDROCHLORIDE*

PRINCIPAL FORMULATION: SP

TYPE PESTICIDE: Insecticide, Acaricide

General Warnings and Limitations

Formetanate hydrochloride is not stable in alkaline water. Do not prepare more spray than will be used within four hours after preparation.

Bee caution: This product is toxic to bees and should not be applied when bees are actively visiting the area.

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
AGRICULTURAL CROPS		
Alfalfa (seed crop only)		NF. Use restricted to California, Idaho, Nevada, Oregon, and Washington. Foliage application. For use on pure stands of alfalfa to be harvested for seed. Do not spray while bees are foraging. Do not graze livestock in treated fields. Do not use treated crops or crop residues for livestock feed or forage. Fields treated with formetanate hydrochloride must be cleared following harvest by burning or discing. Consult your State Agricultural Experiment Station or State Cooperative Agricultural Extension Service for proper timing.

*m[[(dimethylamino)methylene]amino]phenyl methylcarbamate hydrochloride; Carzol SP

FORMETANATE HYDROCHLORIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Alfalfa (continued) (seed crop only)		
Lygus bugs	0.46-0.92 lb./A. (SP)	Apply when lygus bugs reach damaging numbers and repeat as needed.
Consperse stink bug	0.92 lb./A.(SP)	For knockdown of heavy nymphal populations. A lygus bug control program will control the consperse stink bug.
Apples		3.0 ppm. 7 day preharvest interval through 3.68 lb./A. Foliage application. Do not apply more than 3.68 lb./A. in a crop season. Do not allow livestock to graze in treated orchards.
European red mite Twospotted spider mite	3.68-7.36 oz./ 100 gal. water or 0.92-3.68 lb./A. (SP)	Foliage application. Dosage used depends upon size of trees and severity of the infestation.
Grapefruit		4.0 ppm. 7 day preharvest interval through 4.6 lb./A. Foliage application. Allow 30 days between applications. Do not apply more than 4.6 lb./A. in a 12 month period.
Citrus rust mite	0.92-1.84 oz./ 100 gal. water (SP)	Use restricted to Florida. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.
	1.84-3.68 oz./ 100 gal. water (SP)	Use restricted to Texas. Apply 250-1,000 gallons per acre as a full coverage spray, depending upon tree size.

FORMETANATE HYDROCHLORIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Lemons		4.0 ppm. 7 day preharvest interval through 4.6 lb./A. Foliage application. Allow 30 days between applications. Do not apply more than 4.6 lb./A. in a 12 month period.
Citrus rust mite	0.92-1.84 oz./ 100 gal. water (SP)	Use restricted to Florida. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.
	1.84-3.68 oz./ 100 gal. water (SP)	Use restricted to Texas. Apply 250-1,000 gallons per acre as a full coverage spray, depending upon tree size.
Citrus thrips	7.36 oz./100 gal. water(SP)	Use restricted to Arizona and California. Apply 100-300 gallons per acre as an outside coverage spray, depending upon tree size.
Citrus red mite	7.36 oz./100 gal. water(SP)	Use restricted to Arizona and California. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.
Nectarines		4.0 ppm. 14 day preharvest interval through 1.15 lb./A. Foliage application. Do not apply more than 3.68 lb./A. in a crop season.
European red mite McDaniel spider mite Twospotted spider mite	3.68 oz./100 gal. water or 0.92-1.15 lb./A. (SP)	Use restricted to the West Coast. Foliage application.

FORMETANATE HYDROCHLORIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Nectarines (continued)		
Thrips	7.36 oz./100 gal. water or 1.84 lb./A.(SP)	Use restricted to California. Foliage application. Apply when thrips infest blossoms through petal fall. Apply at night or while bees are not working blossoms.
Oranges		4.0 ppm. 7 day preharvest interval through 4.6 lb./A. Foliage application. Allow 30 days between applications. Do not apply more than 4.6 lb./A. in a 12 month period.
Citrus rust mite	0.92-1.84 oz./ 100 gal. water (SP)	Use restricted to Florida. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.
	1.84-3.68 oz./ 100 gal. water (SP)	Use restricted to Texas. Apply 250-1,000 gallons per acre as a full coverage spray, depending upon tree size.
Citrus thrips	7.36 oz./100 gal. water(SP)	Use restricted to Arizona and California. Apply 100-300 gallons per acre as an outside coverage spray, depending upon tree size.
Citrus red mite	7.36 oz./100 gal. water(SP)	Use restricted to Arizona and California. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.
Peaches		5.0 ppm. 21 day preharvest interval through 1.15 lb./A. Foliage application. Do not apply more than 2.3 lb./A. in a crop season.

FORMETANATE HYDROCHLORIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Peaches (continued)		
European red mite McDaniel spider mite Twospotted spider mite	3.68 oz./100 gal. water or 0.92-1.15 lb./A. (SP)	Use restricted to the West Coast. Foliage application.
Pears		3.0 ppm. 7 day preharvest interval through 3.68 lb./A. Foliage application. Do not apply more than 3.68 lb./A. in a crop season. Do not allow livestock to graze in treated orchards.
European red mite Twospotted spider mite	3.68-7.36 oz./ 100 gal. water or 0.92-3.68 lb./A. (SP)	Foliage application. Dosage depends upon size of trees and severity of the infestation.
Plums Prunes		2.0 ppm (plums, fresh prunes). 7 day preharvest interval through 2.76 lb./A. Foliage application. Do not apply more than 2.76 lb./A. in a crop season.
European red mite Twospotted spider mite	3.68 oz./100 gal. water or 0.92-1.38 lb./A. (SP)	Use restricted to the West Coast. Foliage application.
Tangerines		4.0 ppm. 7 day preharvest interval through 4.6 lb./A. Foliage application. Allow 30 days between applications. Do not apply more than 4.6 lb./A. in a 12 month period.

FORMETANATE HYDROCHLORIDE

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
Tangerines (continued)		
Citrus rust mite	0.92-1.84 oz./ 100 gal. water (SP)	Use restricted to Florida. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.
	1.84-3.68 oz./ 100 gal. water (SP)	Use restricted to Texas. Apply 250-1,000 gallons per acre as a full coverage spray, depending upon tree size.
Citrus thrips	7.36 oz./100 gal. water(SP)	Use restricted to Arizona and California. Apply 100-300 gallons per acre as an outside coverage spray, depending upon tree size.
Citrus red mite	7.36 oz./100 gal. water(SP)	Use restricted to Arizona and California. Apply 700-1,000 gallons per acre as a full coverage spray, depending upon tree size.

FOSPIRATE*

PRINCIPAL FORMULATION: collar

TYPE PESTICIDE: Insecticide

Site and Pest	Dosage	Tolerance, Use, Limitations
	actual	
HUMANS, PETS AND OTHER ANIMALS		
** Cats Dogs		
Fleas	15% (collar)	Activity against fleas may be observed within a few hours and will continue for up to 3 or 4 months. Live fleas from the premises may continue to appear on cats or dogs, but they will also be killed. Place collar around cat's or dog's neck and adjust for proper fit. Trim excess and discard. Irritation to skin may occur if collar is fastened too tightly. Remove collar if irritation develops. May be worn with regular collar. Do not allow children to play with collars. Do not allow cats or dogs to chew on collars. Do not use on sick or convalescing cats or dogs.

*dimethyl 3,5,6-trichloro-2-pyridyl phosphate