

Notice of Determination
pursuant to 40 CFR 162.11(a)(5) .
concluding the Endrin RPAR

I. Introduction

On July 27, 1976, the Environmental Protection Agency issued a notice of rebuttable presumption against registration and continued registration ("RPAR") of pesticide products containing endrin (41 FR 31316), thereby initiating the Agency's public review of the risks and benefits of the registered uses of endrin, and the uses for which applications for registration are pending. This notice constitutes the Agency's Notice of Determination ("Notice") pursuant to 40 CFR 162.11(a)(5), terminating the endrin RPAR.

In broad summary, the Agency has determined that three risk presumptions announced in the endrin RPAR have not been rebutted. The risks of significant population reductions of nontarget organisms, acute toxicity to wildlife, and teratogenicity posed by endrin are of sufficient concern to require the Agency to consider whether offsetting economic, social or environmental benefits exist.

The Agency has considered benefits information, including that submitted by registrants, interested

persons and the United States Department of Agriculture, and has analyzed the economic, social and environmental benefits of the uses of endrin subject to this RPAR. The Agency has weighed risks and benefits together, in order to determine whether the risks of each use of endrin are warranted by the benefits of the use. In weighing risks and benefits, the Agency considered what risk reductions could be achieved, and how risk reduction measures would affect the benefits of the use.

With respect to the principal uses of endrin, the Agency has determined: (1) that the risks of the use of endrin on cotton in all states east of the Mississippi River and in Arkansas, Louisiana, and some portions of Oklahoma and Texas are greater than the social, economic and environmental benefits of this use, and the risks of the use of endrin on cotton in other areas are greater than the social, economic and environmental benefits, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below; (2) that the risks of the uses of endrin on small grains to control the army cutworm, pale western cutworm, and grasshoppers are greater than the social, economic and environmental

benefits, unless risk reductions are accomplished by by modifications in the terms or conditions of registration, as described below; and (3) that the risks of the use of endrin on orchards to control the pine vole and the western meadow vole are greater than the social, economic and environmental benefits, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. Accordingly, the Agency is initiating action to cancel or deny registrations for the use of endrin on cotton in all states east of the Mississippi River and in Arkansas, Louisiana, and portions of Oklahoma and Texas, as described below, and will initiate action to cancel or deny registrations for the use of endrin on small grains to control pests other than the army cutworm, the pale western cutworm, and grasshoppers and on orchards to control the eastern meadow vole. Further, the Agency is initiating action to cancel or deny registrations for the uses of endrin on cotton in areas other than those delineated for cancellation, on small grains to control the army cutworm, pale western cutworm, and grasshoppers and on orchards to control the pine vole and western meadow vole unless the changes in the terms and conditions of registration

are accomplished. The Agency has further determined that these modifications in the terms or conditions of registration accomplish significant risk reductions, and that these risk reductions can be achieved without significant impacts on the benefits of the uses.

The Agency's conclusions with respect to the uses of endrin which account for a small proportion of the total endrin used are summarized in Section III of this document.

The remainder of this Notice and the accompanying Position Document set forth in detail the Agency's analysis of comments submitted during the rebuttal phase of the endrin RPAR, and the Agency's reasons and factual bases for the regulatory actions it is initiating. The Notice is organized into four sections. Section I is this introduction. Section II sets forth a general discussion of the regulatory framework within which this action is taken. Section III sets forth the Agency's determinations concluding the endrin RPAR and initiating the regulatory actions which flow from these determinations; Section III and the accompanying Position Document set forth the bases for these determinations. Section IV provides a brief discussion of the procedures which will be followed in implementing

the regulatory actions which the Agency is initiating in this Notice.

II. Legal Background

In order to obtain a registration for a pesticide under the Federal Insecticide, Fungicide and Rodenticide Act, as amended ("FIFRA"), a manufacturer must demonstrate that the pesticide satisfies the statutory standard for registration. That standard requires (among other things) that the pesticide perform its intended function without causing "unreasonable adverse effects" on the environment (Section 3(c)(5)). "Unreasonable adverse effects on the environment" is defined to mean "any unreasonable risk to man or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide" (FIFRA, Section 2(bb)). In effect, this standard requires a finding that the benefits of each use of the pesticide exceed the risks of use, when the pesticide is used in accordance with the terms and conditions of registration, or in accordance with commonly recognized practice. The burden of proving that a pesticide satisfies the reregistration standard continues as long as the registration remains in effect. Under Section 6 of FIFRA, the Administrator

is required to cancel the registration of a pesticide or modify the terms and conditions of registration whenever he or she determines that the pesticide no longer satisfies the statutory standard for registration. ^{1/}

The Agency created the RPAR process to facilitate the identification of pesticide uses which may not satisfy the statutory standard for registration and to provide a structure for the gathering and evaluation of information about the risks and benefits of these uses. The structure permits public participation at major points in the evaluation process.

The RPAR process is set forth at 40 CFR 162.11. This section provides that a rebuttable presumption shall arise if a pesticide meets or exceeds any of the risk criteria set out in the regulations. After an RPAR is issued, registrants and other interested persons are invited to review the data upon which the presumption is based and to submit data and information to rebut the presumption. Respondents may rebut the

^{1/} Another part of the statutory standard for registration is that the pesticide must satisfy the labeling requirements of FIFRA. These requirements are set out in the statutory definition of "misbranded" [FIFRA Section 2(q)]. Among other things, this section provides that a pesticide is misbranded if

presumption of risk by showing that the Agency's initial determination of risk was in error, or by showing that use of the pesticide is not likely to result in any significant exposure to man or the animal or plant of concern with regard to the adverse effect in question. ^{2/} Further, in addition to submitting evidence to rebut the risk presumption, respondents may submit evidence as to whether the

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"the labeling . . . does not contain directions for use which are necessary for effecting the purpose for which the product is intended and if complied with, together with any . . . [restrictions] imposed under section 3(d) . . . are adequate to protect health and the environment."

The Agency can require changes to the directions for use of a pesticide in most circumstances either by finding that the pesticide is misbranded if the labeling is not changed, or by finding that the pesticide would cause unreasonable adverse effects on the environment, unless labeling changes are made which accomplish risk reductions.

2/ 40 CFR 162.11(a)(4) provides that registrants and applicants may rebut a presumption against registration by sustaining the burden of proving: "(1) in the case of a pesticide which meets or exceeds the criteria for risk set forth in paragraphs (a)(3)(i) or (iii) that when considered with the formulation, packaging, method of use, and proposed restrictions on and directions for use and widespread and commonly recognized practices of use, the anticipated exposure to an applicator or user and to local, regional or national populations of non-target organisms is not likely to result in any significant acute adverse effects; or (ii) in the case of a

economic, social and environmental benefits of the use of the pesticide subject to the presumption outweigh the risks of use. The regulations require the Agency to conclude an RPAR by issuing a Notice of Determination. In that Notice, the Agency is required to state and explain its position on the question whether the risk presumption has been rebutted. If the Agency determines that the presumption is not rebutted, it will then consider information relating to the social, economic and environmental costs and benefits which registrants and other interested persons submitted to the Agency, and any other benefits information known to the Agency. If the Agency determines that the risks

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pesticide which meets or exceeds the criteria for risk set forth in paragraph (a)(3)(ii) that when considered with proposed restrictions on use and widespread and commonly recognized practices of use, the pesticide will not concentrate, persist, or accrue to levels in man or the environment likely to result in any significant chronic adverse effects; or (iii) that the determination by the Agency that the pesticide meets or exceeds any of the criteria for risk was in error. A primary purpose of the RPAR process is to screen for appropriate action those pesticide uses which pose risks which are of sufficient concern to require the Agency to consider whether offsetting benefits justify the risks. Accordingly, the Agency's approach to rebuttal determinations concentrates on whether the risk concerns which are central to each RPAR proceeding have in fact been answered.

of a pesticide use appear to outweigh its benefits, the RPAR process will conclude with a notice of intent to cancel or deny registration, pursuant to FIFRA Section 6(b)(1) or Section 3(c)(6). If the Agency determines that benefits appear to outweigh the risks, the Agency may issue a notice of intent to hold a hearing as authorized by Section 6(b)(2) to determine whether the registration should be cancelled or applications for registration denied. The regulations further provide that the Agency may withdraw a notice of intent to hold a hearing on whether registration should be cancelled or denied if there is insufficient public interest.

In determining whether the use of a pesticide poses risks which are greater than benefits, the Agency considers modifications to the terms and conditions of registration which can reduce risks and the impacts of such modifications in the terms or conditions of registration on the benefits of the use. Among the risk reduction measures short of cancellation which are available to the Agency are requiring changes in the directions for use on the pesticide's labeling.

The statute requires the Agency to submit notices issued pursuant to Section 6 to the Secretary of

Agriculture for comment and to provide the Secretary of Agriculture with an analysis of the impact of the proposed action on the agricultural economy [Section 6 (b)]. The Agency is required to submit these documents to the Secretary of Agriculture at least 60 days before making the notice effective by sending it to registrants or making it public. If the Secretary of Agriculture comments, in writing, within 30 days after receiving the notice, the Agency is required to publish the comments and the Administrator's responses to them along with publication of the notice. FIFRA also requires the Administrator to submit Section 6 notices, at the same time and under the same procedures as those described above for review by the Secretary of Agriculture, to a Scientific Advisory Panel for comment on the impact of the proposed action on health and the environment [Section 25(d)].

Although not required to do so under the statute, the Agency has decided that it is consistent with the general theme of the RPAR process and the Agency's overall policy of open decision making to afford registrants and other interested persons an opportunity to comment on the bases for the proposed action during the time that the proposed action is under review by the

Secretary of Agriculture and the Scientific Advisory Panel. Accordingly, appropriate steps will be taken to make copies of the Position Document available to registrants and other interested persons at the time the decision documents are transmitted for formal external review, through publication of a notice of availability in the Federal Register, and by other means. Registrants and other interested persons will be allowed the same period of time to comment--30 days--that the statute provides for receipt of comments from the Secretary of Agriculture and the Scientific Advisory Panel.

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After complying with these external review requirements and accomplishing any changes in the contemplated action which are deemed appropriate as a result of any comments received, the Agency will proceed to implement the desired regulatory action by sending and making public a notice of intent to cancel under FIFRA Section 6(b)(1) or a notice of intent to hold a hearing under FIFRA Section 6(b)(2), as appropriate. Registrants and other interested persons have 30 days to request a hearing, in the case of notices of intent to cancel under FIFRA Section 6(b)(1). In the event a hearing is not requested and any changes in the

terms or conditions of registration directed in the cancellation notice are not accepted, the cancellation action announced in the notice of intent will take effect automatically at the end of the 30-day notice period. If a hearing is requested, it will be governed by the Agency's Rules of Practice for hearings under FIFRA Section 6 [40 CFR Part 164]; the cancellation action will not become effective except pursuant to an order of the Administrator at the conclusion of the hearing. Rules governing participation in, and the conduct of, hearings under FIFRA section 6(b)(2) are also set forth in 40 CFR Part 164. The Agency may withdraw such a notice prior to the commencement of a hearing, upon appropriate findings.

III. Determinations and Initiation of Regulatory Action

The Agency has considered information on the risks associated with the uses of endrin, including information submitted by registrants and other interested persons in rebuttal to the endrin RPAR. The Agency has also considered information on the social, economic and environmental benefits of the uses of endrin subject to the RPAR, including benefits information submitted by registrants and other interested persons

in conjunction with their rebuttal submissions, and information submitted by the United States Department of Agriculture. The Agency's assessment of the risks and benefits of the uses of endrin subject to this RPAR, its conclusions and determinations whether any use of endrin poses unreasonable adverse effects on the environment, and its determinations whether modifications in terms or conditions of registration reduce risks sufficiently to eliminate any unreasonable adverse effects, are set forth in detail in the Position Document accompanying this Notice. This Position Document is hereby adopted by the Agency as its statement of reasons for the determinations and actions announced in this Notice, and as its analysis of the impacts of the proposed regulatory actions on the agricultural economy. For the reasons summarized below and developed in detail in the Position Document, the principal determinations of the Agency with respect to endrin are as follows:

A. Determinations on Risks

The endrin RPAR was based on information indicating that endrin posed the following risks to humans and the environment: (1) oncogenicity; (2) fetotoxic and teratogenic effects; (3) fatalities to endangered

species; (4) significant population reductions in non-target organisms; (5) acute toxicity to wildlife; and (6) acute hazards to humans and domestic animals through dermal exposure. As the Position Document explains, the Agency has determined that information submitted to rebut these risk criteria was insufficient to remove the Agency's concerns that endrin causes significant population reductions in non-target organisms, poses a risk of acute toxicity to wildlife and poses a risk of teratogenicity to humans; the Agency has concluded that these risks are associated, to differing degrees, with all uses of endrin and are of sufficient magnitude to require the Agency to determine whether the uses of endrin offer offsetting social, economic or environmental benefits.

The risk of significant population reductions in non-target organisms is greatest when endrin is used on cotton crops; as a result of this use, heavy rainfall creates run-off from endrin-treated acreage, and the run-off causes fish kills. the risk of teratogenicity is greatest to women who consume large amounts of contaminated fish and who live near cotton-growing areas and female pesticide applicators working in apple orchards. The Agency has determined, however, that the

weight of the evidence on oncogenicity indicates that endrin does not pose an oncogenic risk to humans. Moreover, the Agency has determined that the risk presumptions for acute dermal toxicity and fatalities to endangered species have been rebutted.^{3/}

B. Determinations on Benefits

The uses of endrin which are subject to this RPAR fall into four categories: cotton uses; small grains uses; orchard uses; and other uses.^{4/}

1. Cotton Uses

Endrin is used on cotton crops, principally for control of the cotton bollworm and the tobacco budworm. For this use, endrin is used almost exclusively in combination with methyl parathion, endrin serving as an adjuvant to methyl parathion. Endrin is a minor cotton insecticide, and its use has declined in recent years as resistance to it has become widespread in some areas.

^{3/} In connection with its evaluation of the risk presumption relating to endangered species, pursuant to §7 of the Endangered Species Act of 1973, 16 U.S.C. 1531 the Agency consulted with the United States Fish and Wildlife Service.

^{4/} The category of "other uses" comprises sugarcane; seed treatments for conifers, watermelons and vegetables; alfalfa and clover seed crops; ornamentals; tree paint; perch treatments for controlling birds.

Numerous alternative pesticides are registered with EPA for control of the cotton bollworm and tobacco budworm, and several of the alternatives are at least as efficacious as, and less hazardous than the endrin-methyl parathion formulation.

The Agency has determined that the use of endrin on cotton provides small benefits to users and no benefits to any other group. Cancellation of this use would cause current endrin users to use alternative pesticides whose cost per acre treatment would not be significantly greater than endrin's and whose use over a growing season might increase growers' production costs by an aggregate of approximately \$718,000.

2. Small Grains Uses

Endrin's use to control the army cutworm and the pale western cutworm on wheat provides substantial benefits to growers. No federally-registered alternative pesticides are available for control of the pale western cutworm, and the Agency has concluded that, if uncontrolled, the pale western cutworm would damage crops sufficiently to reduce wheat yields by 4.7 million bushels annually. Although this would have a minor impact on total United States wheat production, it would reduce the gross revenues of endrin users by

approximately \$14.9 million annually. Alternative pesticides are available to control the army cutworm, but they are more expensive than endrin. Endrin users' production costs would increase by an aggregate of approximately \$1.2 million annually if alternatives were used.

3. Orchard Uses

Endrin is applied as a postharvest ground spray to control voles (mice) in many apple-producing areas. Alternative pesticides are available, but they do not provide the same level of control as endrin for certain pests. The replacement of endrin with zinc phosphide, the only federally-registered pesticide whose efficacy is comparable to endrin's, would result in a 6.7% annual loss in apple production on the acreage currently treated with endrin. This loss of production would reduce annual revenues of producers now using endrin by approximately \$ 5.3 million. The replacement of endrin with chlorophacinone and diphacinone, pesticides registered for use in certain apple-producing states, would result in a 3.3% annual loss in apple production on the acreage currently treated with endrin. This loss of production would reduce revenues of producers now using endrin by approximately \$ 2.4

million. The Agency has determined that production losses of this magnitude would cause the price of apples to increase.

4. Other Uses

The Agency has determined that virtually no benefits are associated with the uses of endrin on sugarcane and ornamentals. The Agency has determined that some benefits are associated with the following uses of endrin: seed treatments for conifers, water-melons and vegetables; tree paint; and perch treatments for controlling birds. The Agency has determined that some potential benefits are associated with the use of endrin on alfalfa and clover seed crops.

C. Determinations on Unreasonable Adverse Effects

For the reasons set forth in detail in the Position Document, the Agency has made the following unreasonable adverse effect determinations with respect to the uses of endrin subject to the RPAR: ^{5/}

5/ On January 31, 1978, the Administrator of the Agency classified all uses of endrin for restricted use and limited them to use by or under the direct supervision of certified applicators (40 CFR §162.31; 43 FR 5788, February 9, 1978). The uses were classified under the Agency's Optional Procedures for Classification of Pesticide Uses by Regulation (40 CFR §162.30; 42 FR 44170, September 1, 1977). These actions will continue for all uses of endrin until the cancellations to be implemented through the RPAR process have become effective and for uses that have not been cancelled

1. Determinations on Cotton Uses

The Agency has determined that the use of endrin on cotton in all states east of the Mississippi River and in Arkansas, Louisiana, and all portions of Oklahoma and Texas east of Interstate Highway #35 poses risks which are greater than the social, economic and environmental benefits of the use. Accordingly, the Agency has determined that the use of endrin on cotton crops in these areas generally will cause unreasonable adverse effects on the environment, when used in accordance with commonly recognized practice. The Agency has determined that risks of the use of endrin on cotton in areas other than all states east of the Mississippi River, Arkansas, Louisiana, and all portions of Oklahoma and Texas east of Interstate Highway #35 are greater than the social, economic and environmental benefits of these uses, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. The Agency has determined, further, that these modifications in the terms or conditions of registration accomplish significant reductions and that these risk reductions can be achieved without significant impacts on the benefits of the use. Accordingly, the

Agency has determined that, unless these changes in the terms or conditions of registration are accomplished, the uses of endrin on cotton in areas other than all states east of the Mississippi River, Arkansas, Louisiana, and all portions of Oklahoma and Texas east of Interstate Highway #35 generally will cause unreasonable adverse effects on the environment, when used in accordance with widespread and commonly recognized practice, and that the labeling of endrin products for cotton uses will not comply with the provisions of FIFRA.

2. Determinations on Small Grains Uses

The Agency has determined that the use of endrin on small grains to control pests other than the army cutworm, the pale western cutworm and grasshoppers poses risks which are greater than the social, economic and environmental benefits of the use. Accordingly, the Agency has determined that these uses of endrin generally will cause unreasonable adverse effects on the environment, when used in accordance with commonly recognized practice.

The Agency has determined that the risks of small grains uses of endrin to control the army cutworm, the pale western cutworm and grasshoppers

are greater than the social, economic and environmental benefits of these uses, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. The Agency has determined, further, that these modifications in the terms or conditions of registration accomplish significant risk reductions and that these risk reductions can be achieved without significant impacts on the benefits of the uses. Accordingly, the Agency has determined that, unless these changes in the terms or conditions of registration are accomplished, the uses of endrin on small grains to control the army cutworm, the pale western cutworm and grasshoppers generally will cause unreasonable adverse effects on the environment, when used in accordance with widespread and commonly recognized practice, and that the labeling of endrin products for small grain uses will not comply with the provisions of FIFRA.

3. Determinations on Orchard Uses

The Agency has determined that the use of endrin in orchards for control of the eastern meadow vole poses risks which are greater than the social, economic and environmental benefits of the use.

Accordingly, the Agency has determined that this use of endrin generally will cause unreasonable adverse effects on the environment, when used in accordance with commonly recognized practice.

The Agency has determined that the risks of orchard uses of endrin for control of the pine vole and western meadow vole are greater than the social, economic and environmental benefits of these uses, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. The Agency has determined, further, that these modifications in the terms or conditions of registration accomplish significant risk reductions and that these risk reductions can be achieved without significant impacts on the benefits of the uses. Accordingly, the Agency has determined that, unless these changes in the terms or conditions of registration are accomplished, the uses of endrin in orchards to control the pine vole and the western meadow vole generally will cause unreasonable adverse effects on the environment, when used in accordance with widespread and commonly recognized practice, and that the labeling of endrin products for orchard uses will not comply with the provisions of FIFRA.

4. Determinations on Other Uses

a. Sugarcane

The Agency has determined that the use of endrin on sugarcane to control pests other than the sugarcane beetle poses risks which are greater than the social, economic and environmental benefits of the use. Accordingly, the Agency has determined that these uses of endrin generally will cause unreasonable adverse effects on the environment, when used in accordance with commonly recognized practice. The Agency has determined that the risks of the use of endrin to control the sugarcane beetle are greater than the social, economic and environmental benefits of these uses, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. The Agency has determined, further, that these modifications in the terms or conditions of registration accomplish significant risk reductions and that these risk reductions can be achieved without significant impacts on the benefits of the uses. Accordingly, the Agency has determined that, unless these changes in the terms or conditions of registration are accomplished, the uses of endrin on sugarcane generally will cause unreasonable adverse

effects on the environment, when used in accordance with widespread and commonly recognized practice, and that the labeling of endrin products for sugarcane uses will not comply with the provisions of FIFRA.

b. Ornamentals

The Agency has determined that the use of endrin on ornamentals poses risks which are greater than the social, economic and environmental benefits of the uses. Accordingly, the Agency has determined that these uses of endrin generally will cause unreasonable adverse effects on the environment, when used in accordance with commonly recognized practice.

c. Conifer Seeds; Alfalfa and Clover Seed Crops; Tree Paint

The Agency has determined that the risks of the uses of endrin on conifer seeds, alfalfa and clover seed crops, and tree paint are greater than the social, economic and environmental benefits of these uses, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. The Agency has determined, further, that these modifications in the terms or conditions of registration accomplish significant risk reductions and that these risk reductions can be achieved without

significant impacts on the benefits of the uses. Accordingly, the Agency has determined that, unless these changes in the terms or conditions of registration are accomplished, these uses of endrin generally will cause unreasonable adverse effects on the environment, when used in accordance with widespread and commonly recognized practice, and that the labeling of endrin products for these uses will not comply with the provisions of FIFRA.

d. Perch Treatments

The Agency has determined that the use of endrin in "Sorbikil", an unenclosed bird perch treatment, poses risks which are greater than the social, economic and environmental benefits of the use. Accordingly, the Agency has determined that this use of endrin generally will cause unreasonable adverse effects on the environment, when used in accordance with commonly recognized practice. The Agency has determined that the risks of the use of endrin in "Rid-A-Bird", an enclosed bird perch treatment, are greater than the social, economic and environmental benefits of this use, unless risk reductions are accomplished by modifications in the terms or conditions of registration, as described below. The Agency has determined, further, that these

modifications in the terms or conditions of registration accomplish significant risk reductions and that these risk reductions can be achieved without significant impacts on the benefits of the uses. Accordingly, the Agency has determined that, unless these changes in the terms or conditions of registration are accomplished, the uses of endrin in Rid-A-Bird perches generally will cause unreasonable adverse effects on the environment, when used in accordance with widespread and commonly-recognized practice, and that the labeling of endrin products for this use will not comply with the provisions of FIFRA.

D. Initiation of Regulatory Actions

Based upon the determinations summarized above and developed in detail in the Position Document, the Agency is initiating the following regulatory actions, and this document shall constitute its Notice of Intention to initiate these actions:

1. Cancellation and denial of registrations of endrin products for use on cotton in all states east of the Mississippi River and in Arkansas, Louisiana, and all portions of Oklahoma and Texas east of Interstate Highway #35.

Cancellation and denial of registration of endrin products for use on cotton in areas other than all states east of the Mississippi River and Arkansas, Louisiana, and all portions of Oklahoma and Texas east of Interstate Highway #35 unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the label of endrin products for the use of endrin on cotton in areas other than all states east of the Mississippi River, Arkansas, Louisiana, and all portions of Oklahoma and Texas east of Interstate Highway #35 to add the following:

Required Clothing for Female
Workers

Female ground applicators, mixers and loaders and flagpersons must wear long-sleeved shirts and long pants made of a closely woven fabric, and wide-brimmed hats. Mixers and loaders must also wear rubber or synthetic rubber boots and aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

Equipment

Ground Application

For use with boom-nozzle ground equipment. Apply at not less than 5 gallons total mixture, water and chemical, per acre. Do not

use nozzle liquid pressure at greater than 40 psi (pounds per square inch). Do not use cone nozzle size smaller than 0.16 gpm at 40 psi such as type D2-25 or TX-10, or no other atomizer or nozzle giving smaller drop size.

Aerial Application

Do not apply at less than two gallons total mixture of water and chemical per acre. Do not operate nozzle liquid pressure over 40 psi (pounds per square inch) with no fan nozzle smaller than 0.4 gallons per minute (gpm) or fan angle greater than 65 degrees such as type 6504. Do not use any cone type nozzles smaller than 0.4 gpm nor whirl plate smaller than #46 such as type D4-46 or no other atomizer or nozzle giving smaller drop size. Do not release this material at greater than 19 ft. height above the crop.

Application Restrictions

Do not use this product within 150 yards of human habitation.

Do not use this product within 1/4 mile of streams, lakes or ponds. Application may be made within 1/4 mile of ponds owned by the user, but application within 200 yards of such ponds may result in fish kills.

Do not apply when rainfall is imminent. Apply only when wind velocity is between 2 mph and 10 mph.

Procedures to be Followed if Fish Kills Occur

In case of fish kills, fish must be collected promptly and dispose of by burial.

At ponds, post signs stating: "Contaminated: No Fishing". Signs must remain for one year after fish kill has occurred.

Prophylactic Use

Unnecessary use of this product can lead to resistance in pest populations and subsequent lack of efficacy.

2. Cancellation and denial of registration of endrin products for use on small grains to control all pests other than the army cutworm, the pale western cutworm, and grasshoppers.

Cancellation and denial of registration of endrin products for use on small grains for control of the army cutworm, pale western cutworm and grasshoppers unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the label of endrin products for the use of endrin on small grains to control the army cutworm, pale western cutworm, and grasshoppers to add the following:

Required Clothing for Female Workers

Female ground applicators, mixers and loaders and flagpersons must wear long-sleeved shirts and long pants made of a closely woven fabric, and wide-brimmed hats. Mixers and loaders

must also wear rubber or synthetic rubber boots and aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

Equipment

Ground Application

For use with boom-nozzle ground equipment. Apply at not less than 5 gallons total mixture, water and chemical, per acre. Do not use nozzle liquid pressure at greater than 40 psi (pounds per square inch). Do not use cone nozzle size smaller than 0.16 gpm at 40 psi such as type D2-25 or TX-10, or no other atomizer or nozzle giving smaller drop size.

Aerial Application

Do not apply at less than one gallon total mixture of water and chemical per acre. Do not operate nozzle liquid pressure over 40 psi (pounds per square inch) with no fan nozzle smaller than 0.4 gallons per minute (gpm) or fan angle greater than 65 degrees such as type 6504. Do not use any cone type nozzles smaller than 0.4 gpm nor whirl plate smaller than #46 such as type D4-46 or no other atomizer or nozzle giving smaller drop size. Do not release this material at greater than 10 ft. height above the crop.

Application Restrictions

Do not use this product within 150 yards of human habitation.

Do not use this product within 1/4 mile of streams, lakes or ponds. Application may be made within 1/4 mile of ponds owned by the user, but application within 200 yards of such ponds may result in fish kills.

Do not apply when rainfall is imminent.

Apply only when wind velocity is between 2 mph and 10 mph.

Procedures to be Followed if Fish
Kills Occur

In case of fish kills, fish must be collected promptly and disposed of by burial. At ponds, post signs stating: "Contaminated: No Fishing". Signs must remain for one year after fish kill has occurred.

Pests for Which This Product
May Be Applied

This product may be applied to control the following pests only: army cutworm; pale western cutworm; grasshoppers.

3. Cancellation and denial of registration of endrin products for use in orchards to control the eastern meadow vole.

Cancellation and denial of registration of endrin products for use in orchards to control the pine vole and western meadow vole unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the labeling of endrin products for use in orchards to control the pine vole

and the western meadow vole to add the following:

Required Clothing for Female
Workers

Female ground applicators, mixers and loaders and flagpersons must wear long-sleeved shirts and long pants made of a closely woven fabric, and wide-brimmed hats. Mixers and loaders must also wear rubber or synthetic rubber boots and aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

Application Restrictions

Do not apply this product within 50 feet of lakes, ponds or streams.

Do not apply this product within 50 feet of areas occupied by unprotected humans.

Do not apply when rainfall is imminent.

Procedures to be Followed if Fish
Kills Occur

In case of fish kills, fish must be collected promptly and disposed of by burial. At ponds, post signs stating: "Contaminated: No Fishing". Signs must remain for one year after fish kill has occurred.

Equipment

Use a very coarse spray with minimum pressure necessary to penetrate ground cover. Do not

apply as a fine spray. Power air blast equipment must be modified to meet the above application restriction. Consult the State recommendations for acceptable methods of adapting equipment.

Prophylactic Use

Unnecessary use of this product can lead to resistance in the mouse population and subsequent lack of efficacy.

Pests for Which This Product May Be Applied

This product may be applied to control the following pests only: pine vole; western meadow vole.

4. Cancellation and denial of registration of endrin products for use on sugarcane to control the sugarcane borer.

Cancellation and denial of registration of endrin products for use on the sugarcane beetle unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the labeling of endrin products for use on sugarcane to control the sugarcane beetle to add the following:

Required Clothing for Female Workers

Female ground applicators, mixers and loaders and flagpersons must wear long-sleeved shirts and long pants made of a

closely woven fabric, and wide-brimmed hats. Mixers and loaders must also wear rubber or synthetic rubber boots and aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

Application Restrictions

Apply only with low-pressure ground equipment. Cover furrows with soil promptly after application.

Pests for Which This Product May Be Applied

This product may be applied only to control the sugarcane beetle.

5. Cancellation and denial of registration of endrin products for use on ornamentals.
6. Cancellation and denial of registration of endrin products for use on conifer seed treatments unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the label of endrin products for the use of endrin on conifer seed treatments to add the following:

Application Restrictions

Do not apply when large numbers of migratory birds are expected.

7. Cancellation and denial of registration of endrin products for use on tree paint unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the label of endrin products for the use of endrin on tree paint to add the following:

Required Clothing for Female Workers

Female workers handling or applying this product must wear long-sleeved shirts and long pants made of a closely woven fabric, wide-brimmed hat, and wear rubber or synthetic rubber boots and aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

8. Cancellation and denial of registration of endrin products for use on alfalfa and clover seed crops unless registrants or applicants for registration modify the terms or conditions of registration as follows:

Modification of the label of endrin products for the use of endrin on alfalfa and clover seed crops to add the following:

Required Clothing for Female Workers

Female ground applicators, mixers and loaders and flagpersons must wear long-sleeved shirts and long pants made of a closely woven fabric, and wide-brimmed hats. Mixers and loaders must also wear rubber or synthetic rubber boots and aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

Equipment

Ground Application

For use with boom-nozzle ground equipment. Apply at not less than 5 gallons total mixture, water and chemical, per acre. Do not use nozzle liquid pressure at greater than 40 psi (pounds per square inch). Do not use cone nozzle size smaller than 0.16 gpm at 40 psi such as type D2-25 or TX-10, or no other atomizer or nozzle giving smaller drop size.

Aerial Application

Do not apply at less than one gallon total mixture of water and chemical per acre. Do not operate nozzle liquid pressure over 40 psi (pounds per square inch) with no fan nozzle smaller than 0.4 gallons per minute

(gpm) or fan angle greater than 65 degrees such as type 6504. Do not use any cone type nozzles smaller than 0.4 gpm nor whirl plate smaller than #46 such as type D4-46 or no other atomizer or nozzle giving smaller drop size. Do not release this material at greater than 10 ft. height above the crop.

Application Restrictions

Do not use this product within 150 yards of human habitation.

Do not use this product within 1/4 mile of streams, lakes or ponds. Application may be made within 1/4 mile of ponds owned by the user, but application within 200 yards of such ponds may result in fish kills.

Do not apply when rainfall is imminent.

Apply only when wind velocity is between 2 mph and 10 mph.

Procedures to be Followed if Fish Kills Occur

In case of fish kills, fish must be collected promptly and disposed of by burial. At ponds, post signs stating: "Contaminated: No Fishing". Signs must remain for one year after fish kill has occurred.

9. Denial of applications for federal registration of "Sorbikil" bird perch treatments containing endrin.

Cancellation and denial of applications for registration of "Rid-A-Bird" bird perch treatments containing endrin unless registrants modify the term of conditions of registration as follows:

Required Clothing for Female Workers

Female workers handling this product must wear long-sleeved shirts and long pants made of a closely woven fabric, wide-brimmed hats, and rubber or synthetic rubber aprons.

Warning to Female Workers

Excessive exposure to endrin may cause birth defects. Female workers must be sure to wear all protective clothing and use all protective equipment specified on this label. In case of accidental spills or other unusual exposure, cease work immediately and follow directions for contact with endrin.

Special Warning

Do not use within one mile of roosting sites or within two miles of nesting sites of peregrine falcons, as identified by the United States Fish and Wildlife Service.

V. Procedural Matters

As discussed above in Section II of this Notice, the Agency's decision to initiate the regulatory actions described in Section III must be referred for review by the Secretary of Agriculture and the Scientific Advisory Panel. In accordance with FIFRA, the EPA position document setting forth in detail the reasons and factual bases for the regulatory actions which the Agency proposes and this notice of determination are being transmitted immediately to the Secretary of Agriculture and to the Scientific Advisory Panel for comment. The Agency also


is transmitting copies of these documents to endrin registrants. The Agency also is offering registrants and other interested persons an opportunity to comment on the bases for the Agency's action by making copies of the Position Document available upon request.

Interested persons may receive copies of the documents by communicating their requests to Kyle Barbehenn, Project Manager, Special Pesticide Review Division (TS-701), EPA, Room 447, East Tower, 401 M Street, S.W., Washington, D.C., 20460, (202) 755-8050.

Registrants and other interested persons will be given the same period of time to submit comments -- thirty days - that the statute provides for comments from the Secretary of Agriculture and the Scientific Advisory Panel.

After completion of these review procedures, the Agency will consider the comments received and publish an analysis of them, together with any changes in the regulatory actions announced in this Notice which it determines are appropriate. Until this final review phase is concluded in this manner, it is not necessary for registrants or other interested persons to request a hearing to contest any regulatory actions resulting from the conclusion of this RPAR.

All comments on the proposed actions should be sent to the Federal Register Section, Technical Service Division, Office of Pesticide Programs, EPA, Room 447, East Tower, 401 M Street S.W., Washington, D.C., 20460. In order to facilitate the work of the Agency and of others interested in inspecting the comments, registrants and other interested persons should submit three copies of their comments. The comments should bear the identifying notation _____, and should be submitted on or before _____.



Steven D. Jellinek
Assistant Administrator
for Toxic Substances

10/20/78
Date