

Keep a history of your yard. Record all the events and activities which have led to the present conditions. This includes: plantings, amendments, fertilizer, peat moss, compost, weeds, animal pests and predators, sun, rain, temperature, seed sources, preparation, and weed control.

Home remedies may work for specific pest problems, but **no one should make recommendations for use of unregistered products as pesticides.** If the product label does not display a U.S. Environmental Protection Agency number or a use is recommended which is not on the label **businesses risk receiving a citation** from the EPA or a state agency.

Pollution prevention and Safety is the underlying reason for much of the emphasis on pesticide use regulation. The results of excessive pesticide application and the use of persistent chemicals has caused pollution of surface and ground waters throughout the United States and the world. Pesticides which have been banned for a decade or more are still increasing in level in ground water. At least 25 per cent of pesticide application (and probably a much higher percentage of over application) is done using the products sold by urban and suburban outlets.

Exclusion of the pesticide from the user is achieved by use of devices such as gloves, goggles, face shields, masks, and respirators. All of these products are displayed for sale in an area for safety equipment. Identification of the specific items recommended for use with a particular pesticide should begin with reading the pesticide label. Different levels of protection are achieved with different levels of breathing air protection and protective clothing.

Security control of the product during use can be improved by sprayers, dust applicators, spreaders, drip systems, prepackaged individual measures, and dedicated measurement devices. The primary concern is to prevent transfer of the product, particularly in a concentrated form, to anyone or anything not intended to be treated.

Control of the product during storage is very important since most injuries occur, particularly to children, outside the active use period. Two of the obvious methods of control are child proof packaging and lockable storage systems. In general, the pesticide must always be stored in its original container with the labeling firmly attached.

"Temporary" or long term storage in other containers may be illegal and certainly increases the possibility of accidental application or ingestion particularly if the container is one where a child might normally find desirable food items. Eliminate access of unsupervised children to high risk areas.

Planned disposal of excess product and empty containers is an integral part of safe use of pesticides. The proper disposal method for excess of a product and the empty original container is specifically provided on the pesticide label. Reusable containers and waste disposal kits also have detailed instructions on the label or packaging.

The original containers must not be modified in any way. In some cases store personnel have modified or destroyed seal integrity on toxic products to reduce space requirements or facilitate handling. Bulky packaging may appear to be unnecessary but it is usually mandated for you and your family's safety. Check package integrity before you buy.

Know where safety and containment equipment is located now. A designated store employee must verify location and condition of safety equipment on a regular schedule. As an customer you are also prudent to note these locations. In some stores hand carts and containment/overpack units may also be available. Training for safe lifting and handling procedures is also a method of preventing in-store accidents for customers as well as employees.

Store management should provide updated maps of hazardous material locations to public response agencies as well as having them available in the store. This function is often supported by computer aided tracking operated by the Risk Management Department for all toxics from original purchase through retail sale.

The primary post-occurrence safety devices are responsible people with adequate training, product knowledge and recognition. Each store location should provide added spill kit use training and mandated general activities such as fire extinguisher training. All personnel associated with store operations must know the location of and be able to understand the posted procedures and **emergency phone numbers.** The basic postings are those required by the occupational safety and health departments of the city, county, state, and Federal governments and the local fire department. If you are not trained do not risk exposure.

First reaction must be for exclusion of people from the affected area using signs, barriers, tape, or public announcements, and in potentially serious cases posted guards. Only properly trained and clothed personnel should attempt cleanup. If there is even a remote possibility that people might reenter a dangerous area, guards must be stationed immediately outside the contaminated area.

What Are The Important Phone Numbers?

1-800-424-4EPA

Public agency and manufacturer information is available directly through a system of "hot line" numbers:

Consumer Product Safety Commission (415) 556-1816
 EPA Safe Drinking Water Hotline 1-800-426-4791
 EPA Region 10, Indoor Air (206) 553-2589
 National Pesticide Telecommunications Network
 (Texas Tech) 1-800-858-7378
 8:00 am to 6:00 pm CST, Mon through Fri
 National Pesticide Information Network (Washington DC)
 modem (1200/2400 baud, 7 data, 1 stop, even parity,
 full duplex) (703) 305-5919
 voice support (703) 305-7499
 Puget Sound Air Pollution Control Agency (206) 343-8800
 PSWQA Information 1-800-54-SOUND
 Washington Poison Network 1-800-732-6985
 Oregon Poison Control (503) 494-8968
 Oregon 1-800-452-7165
 Idaho Poison Control (208) 378-2707
 Idaho 1-800-632-8000
 Washington State Department of Agriculture,
 Pesticide Management Division
 Olympia (206) 902-2010
 Licensing (206) 902-2030
 Compliance-Olympia (206) 902-2040
 Compliance-Yakima (509) 575-2746
 Washington State Department of Ecology (206) 407-3300
 Washington State Department of Health,
 Pesticides Section (206) 753-3518
 Washington State Department of Labor and Industries
 Olympia (206) 753-4473
 Everett (206) 356-2965
 Seattle (206) 281-5440
 Tacoma (206) 593-2926
 Spokane (509) 456-5003
 American Lung Association (206) 441-5100
 ChemTrec 1-800-424-9300
 Hazards Line (206) 296-4692
 King County Solid Waste Utility (206) 296-4466
 Seattle Solid Waste Utility (206) 684-4684
 Metrocenter WMCA (206) 382-6013
 People for Puget Sound (206) 382-7007
 Washington Toxics Coalition (206) 632-1545
 Storm Water Hotline (703) 821-4823
 Dial Extension - WSU Pierce Co. (206) 591-3677
 Dial Extension - WSU King Co. (206) 296-3425



United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101-9797

Do you really need a pesticide?



What Is A Pest?

A **pest** is a living organism which may be a vertebrate (*e.g. crow, rat, deer*), invertebrate (*e.g. fly, snail, slug*), fungus, bacteria, spore, virus, or undesired plant type for the location. This definition excludes virus in or on the human body. The reduction in satisfaction may be an loss of plant or animal product; health risk to human, other animal, or plant; asthetic damage; or the creation of a nuisance.

Health risk is represented by the vectoring of a disease or illness, other occupants (*especially children*), or to plants or animals.

Asthetic damage occurs when damage to a plant, or the presence of a pest or its byproducts exceeds the ability of the customer to tolerate it. This threshold is often based on a lack of tolerance for minor, non-health threatening damage and may be raised by access to selected books or pamphlets available in the store.

Identification of pests is the fundamental task which leads to the accurate selection of products and services which are effective and safe. An individual will normally have some information on the symptoms of the problem, perhaps preconceived ideas for a solution, and a desired result and target cost.

Symptomatic Information will relate to observable effects of the problem caused by the pest. There may have more information than initially indicated. Questions based on personal experience, training, and reference or for-sale books may give more information to select the best service or product.

Ideas for a solution will be based on: base cause of the problem, time of year, life cycle of the pest, condition and location of the site (*nearby water bodies, pets, kids, wildlife*), comfort needs and skills.

Desired result and target cost may start with total eradication or a one-shot chemical solution. The concept of a tolerance level to the pest is often appropriate. A definition of tolerance level, simply stated, is that a few insects in the area, nominal weed population, a gradual reduction in the disease problem, or a limited amount of physical damage to the plant may be an acceptable solution. This indicates that a longer term solution such as a target-specific pesticide, predator or parasite, growth regulator, pheromone, or changed cultural practice is often the best solution. Solving today's problem should consider information and products to improve plant health and environmental resistance for the future. Often a problem occurs due to external (*cultural or environmental*) stress.

What Is A Pesticide?

A **pesticide** is any substance, device, procedure or combination of these which is intended to repel, mitigate, control or destroy any pest. In the state of Washington the definition of a pesticide includes adjuvant(s) used with the other pesticides to make them more effective.

Many "pesticides" are not chemicals and using information to identify alternate cultural methods to chemicals when applicable is a part of modern pest control. Your understanding of the basics of pest management will help demonstrate your environmental awareness, and concurrently have a cleaner, safer environment. Alternative solutions include: **preventive activities, cultural activities, biological agents, and mechanical devices.**

Preventive activities include careful seed and plant selection for appropriate species for the area. It also includes avoidance of introduction of pests and diseases into the local environment through techniques such as cleanliness of tools, screening of water sources, and exclusion of adjacent infestations.

Cultural methods include planting cover crops, transplanting slow growing crops, adjusted planting dates, soil improvement (*e.g. organic matter/ fertilizer applications, mulching*), plastic and other covers, and crop rotation (*even in a small garden*). This suggests sales of seeds, tools, books, fertilizers, mulches, peat moss, garden fabric, and hot caps.

Biological agents can include use of animals to selectively forage for pests (*e.g. ducks for slugs, geese for specific grasses and weeds*) and parasitic animals and plants (*e.g. lady bugs and Bacillus Thuringiensis (BT)*). BT is displayed in pesticides and some insect parasites are stocked at certain times of the year.

Mechanical devices generally control the animal or plant pest by trapping, cultivating, cutting, or spraying with water. The applicable items include traps, trowels, shovels, rakes, hoes, spreaders, spray nozzles, cultivators, tillers, mowers, flails, watering systems, and flamers/steamers.

Chemical agents are applicable in certain situations. They include insecticides, herbicides, fungicides, rodenticides, growth regulators, pheromones, and repellents. there are two primary considerations in selection and application of chemical pesticides: the toxicity and target uses of the active ingredient(s), and the effects which may be caused by the "inert" ingredient(s). The label should reflect the risks to non-target organisms from the specific formulation in that package. Do not apply except in accordance with label instructions.

Why Be Concerned about Pesticides?

All pesticide products have both benefits and risks. A rat trap can catch a rat or a finger. All products must be used with caution and according to the label. Some mechanical devices have extensive labeling mandated by the Federal and State Occupational Safety and Health Administrations. Pesticides have extensive label requirements to meet Federal standards and may also have additional state requirements. In general, the newer chemicals are less toxic to humans than older formulations.

"Safe" to humans may not indicate "safe" for other animals and plants. As an example, an insecticidal soap or a surfactant as an inert ingredient added to a pesticide is often extremely toxic to fish if it enters a lake, pond, or stream.

Special attention should be paid to solvents, and adjuvants. These ingredients of pesticide products are often included with active ingredients to increase stability, and improve effectiveness of applications. They may affect increase the human toxicity of the product and complicate the treatment of victims of pesticide misapplications. They may have unintended effects on other animals and plants which may also include long term environmental effects.

Use of specified safety devices and instructions properly followed can save an individual from injury. The labels on pesticides specify protective devices and exposure limitations for the products in those containers.

Some facts to consider on use of chemical pesticides are:

- The U.S. used 6.05 billion dollars of pesticides in 1992 equaling over 1.05 billion pounds
- Use in U.S. increased 5.6% from 1991 (*11 million pound increase*)
- Registered pesticide use is 25% urban/suburban
- Urban/suburban pesticide use in the Puget Sound area in 1988 was 1,080,000 pounds (*active ingredient*)
- 45% of households use pesticides
- Local surveys (*King County and Evergreen College*) indicate: 1/2 of users improperly stored pesticides
- 1/4 of users had 2 year or older pesticides on hand
- Highest incidence of urban/suburban pesticide poisoning is children under 6 years of age ingesting rodenticides
- 80 per cent of chemical pesticides for non-commercial application are now purchased from large stores

What To Do About Pest Management

Targeted Pest management using systems such as **Integrated Pest Management (IPM)** is the planned use of pest control methods which assure a healthy, pleasant and productive environment; restore and maintain an ecological balance; reduce polluting residues in your home, yard, and in surface runoff; protect beneficial organisms in the air and soil; avoid buildup of chemical sensitivity and pesticide resistance; and reduce reliance on non-renewable natural resources.

Pest control options are substantially dependent on what is causing the problem, the time of year, pest life stage, and site conditions. The concept of calendar spraying for control can be both expensive and potentially damaging to the environment, adjacent surface waters, and ground water. IPM methods call for mapping, scouting, weather monitoring, pest monitoring, and then diagnosis of the cause and remedy.

Mapping refers to the maintenance of a note book for your yard and adjacent fields to track occurrence of pest types and pesticide use successes and failures over multiple seasons. This also allows recording of plant/crop performance for different locations in your yard and recording results of different cultural approaches.

Scouting is the inspection of different plantings and areas to identify pest populations and their development as the growing season progresses. This is one of the sources of the entries into your notebook on home history.

Weather monitoring consists of observation of temperature, humidity, and precipitation patterns which will affect the development of your plants and the associated pest populations.

Diagnosis and remedy are the reaction to the collected information from mapping, scouting, weather monitoring, and consultation with local experts. It is done in a way which will allow healthy growth of your crops and achievement of a pleasant appearance for your property.

Safety can be improved by exclusion, control, security and disposal. Buy the size of chemical package intended for use in the present season. The use of "old chemicals" is not advised as their potency may have changed. Special attention should be directed to handling and storage instructions to avoid injury to individuals and especially, small children. Locked storage is always best. Observe reentry instructions on the label.