

Glossary

absorb. To soak up or take in liquid or powder.

absorption. The movement of a chemical into plants, animals (including humans) and microorganisms.

accumulate. To increase in quantity within an area, such as the soil or tissues of a plant or animal.

active ingredient (a.i.). The material in the pesticide formulation that actually destroys the target pest or performs the desired function.

adsorb. To take up and hold on surface.

adsorption. The process by which chemicals are held or bound to a surface by physical or chemical attraction. Clay and high organic soils tend to adsorb pesticides.

adsorption characteristics (K_{oc}). The ~ describes the relative affinity or attraction of the pesticide to soil material and, therefore, its mobility in soil. Pesticides with small ~ values are more likely to leach than those with high K_{oc} values.

aerosol. Very fine liquid droplets or dust particles often emitted from a pressurized can or aerosol-generating device.

agitator. A mechanical or hydraulic device that stirs the liquid in a spray tank to prevent the mixture from separating or settling.

anti-siphoning device. A device attached to the filling hose that prevents backflow or back siphoning from a spray tank into a water source.

anticoagulant. A type of rodenticide that causes death by preventing normal blood clotting.

arachnid. A wingless arthropod with two body regions and four pairs of jointed legs. Spiders, ticks and mites are in the class Arachnida.

arthropod. An animal having jointed appendages and an external skeleton, such as an insect, a spider, mite, crab or centipede.

attractant. A substance that attracts a specific species of animal. When manufactured to attract pests to traps or poisoned bait, attractants are considered pesticides.

avicide. A pesticide used to control pest birds.

bacterium (plural: bacteria). A unicellular, microscopic, plantlike organism that lives in soil, water, organic matter or the bodies of plants and animals. Some bacteria cause plant or animal diseases.

bait. A food or food-like substance that is used to attract and often poison pest animals.

bioaccumulation. The storage or accumulation of materials in the tissues of living organisms.

biological control. The action of parasites, predators, pathogens or competitors in maintaining another organism's density at a lower average than would occur in their absence. Biological control may occur naturally in the field or be the result of human manipulation or introduction of biological control agents.

calibration. Measurement of the output of pesticide-application equipment so that the proper amount of pesticide can be applied to a given area.

carbamates (N-Methyl Carbamates). A group of pesticides containing nitrogen, formulated as insecticides, fungicides and herbicides. The N-Methyl Carbamates are insecticides and inhibit cholinesterase in animals.

carcinogenic. Cancer producing.

carrier. The liquid or powdered inert substance that is combined with the active ingredient in a pesticide formulation. May also apply to the water or oil that a pesticide is mixed with before application.

chemical control. Pesticide application to kill pests.

chlorinated hydrocarbon. A pesticide containing chlorine, carbon and hydrogen of which many are persistent in the environment. Examples: chlordane, DDT, methoxychlor.

commercial applicator. A certified applicator that, for compensation, uses or supervises the use of any pesticide classified for restricted use for any purpose or on any property other than that producing an agricultural commodity.

compatible. The condition in which two or more pesticides mix without unsatisfactory chemical or physical changes.

concentration. Refers to the amount of active ingredient in a given volume or weight of formulated product.

confined area. Enclosed spaces such as attics, crawl spaces, closed rooms, warehouses, greenhouses, holds of ships and other areas that may be treated with pesticides.

contamination. The presence of an unwanted substance (sometimes pesticides) in or on a plant, animal, soil, water, air or structure.

coverage. The degree to which a pesticide is distributed over a target surface.

decontaminate. To remove or break down a pesticidal chemical from a surface or substance.

degradation. Degradation occurs due to sunlight, soil microorganisms and chemical reactions in the soil. Soil temperature and moisture can greatly affect degradation. Degradation rate is quantified in terms of degradation half-life, the time required for 50% of the pesticide to decompose to products other than the original pesticide. EPA considers a soil half-life of greater than 21 days as a pesticide with potential for causing water concerns due to the pesticide's longevity.

deposit. The placement of pesticides on target surfaces.

desiccant. A pesticide that destroys target pests by causing them to lose body moisture.

diagnosis. The positive identification of a problem and its cause.

diluent. Any liquid or solid material used to dilute or weaken a concentrated pesticide.

disease. A condition, caused by biotic or abiotic factors, that impairs some or all of the normal functions of a living organism.

dissolve. To pass into solution.

dose. The measured quantity of a pesticide. Often the size of the dose determines the degree of effectiveness, or, in the case of poisoning of nontarget organisms, the degree of injury.

drift. The movement of pesticide dust spray or vapor away from the application site.

dust. Finely ground pesticide particles, sometimes combined with inert materials. Dusts are applied without mixing with water or other liquid.

emulsifiable concentrate. A pesticide formulation consisting of a petroleum-based liquid and emulsifiers that enable it to be mixed with water for application.

emulsion. A mixture of two liquids that is not soluble in one another. One is suspended as very small droplets in the other with the aid of an emulsifying agent.

endangered species. Rare or unusual living organisms whose existence is threatened by people's activities, including the use of some types of pesticides.

environment. All of the living organisms and nonliving features of a defined area.

Environmental Protection Agency (EPA). The federal agency responsible for regulating pesticide use in the United States.

EPA registration number. An identification number assigned to a pesticide product when the product is registered by the EPA for use. The number must appear on all labels for a particular product.

eradication. The pest-management strategy that attempts to eliminate all members of a pest species from a defined area.

exclusion. Pest management technique that uses physical or chemical barriers to prevent certain pests from getting into a defined area.

exposure. Coming in contact with a pesticide.

FIFRA. Federal Insecticide, Fungicide, and Rodenticide Act; a federal law and its amendments that control pesticide registration and use.

flowable. A pesticide formulation of finely ground particles of insoluble active ingredient suspended in a petroleum-based liquid combined with emulsifiers; flowables are mixed with water for final application.

flypaper. Strips of paper coated with a sticky substance and sometimes a pheromone attractant hung in areas inside buildings where flies are a problem. Flies become entangled in the sticky substance.

fog. A spray of very small pesticide-laden droplets that remains suspended in the air.

formulation. A mixture of active ingredients combined during manufacture with inert materials. Inert materials are added to improve the mixing and handling qualities of a pesticide.

fumigant. Vapor or gas form of a pesticide used to penetrate porous surfaces for control of soil-dwelling pests or pests in enclosed areas or storage.

fungicide. A pesticide used for control of fungi.

fungus (plural: fungi). A group of small, often microscopic, organisms in the plant kingdom, which cause rot, mold and disease. Fungi need moisture or a damp environment (wood rots require at least 19 percent moisture). Fungi are extremely important in the diet of many insects.

glueboard. A small cardboard sheet or boxlike apparatus having one or more surfaces coated with a thick, sticky paste. This is placed on surfaces to capture pest insects or small rodents.

granule. A dry formulation of pesticide active ingredient and inert materials compressed into small, pebble-like shapes.

groundwater. Fresh water trapped in aquifers beneath the surface of the soil; one of the primary sources of water for drinking, irrigation and manufacturing.

habitat. The place where plants or animals live and grow.

habitat modification. A pest management practice that involves modifying certain physical aspects of a building or structure to make it less suitable for pests to live.

host. A plant or animal species that provides sustenance for another organism.

impregnate. An item, such as a flea collar, that has been manufactured with a certain pesticide in it; impregnates usually emit small, localized quantities of pesticide over an extended period of time.

incompatibility. A condition in which two or more pesticides are unable to mix properly or one of the materials chemically alters the other to reduce its effectiveness or produce undesirable effects on the target.

inhalation. The method of entry of pesticides through the nose or mouth into the lungs.

insect growth regulator (IGR). A type of pesticide used for control of certain insects. IGRs disrupt the normal process of development from immature to mature life stages.

insecticide. A pesticide used for the control of insects. Some insecticides are also labeled for control of ticks, mites, spiders and other arthropods.

insects, Insecta. A class in the phylum Arthropoda characterized by a body composed of three segments and three pairs of legs.

inspection. The thorough checking of items for the presence of pests or pest eggs before bringing the items into a pest-free area.

integrated pest management (IPM). A pest management program that uses life-history information and extensive monitoring to understand a pest and its potential for causing economic damage. Control is achieved through multiple approaches including prevention, cultural practices, pesticide applications, exclusion, natural enemies and host resistance. The goal is to achieve long-term suppression of target pests with minimal impact on nontarget organisms and the environment.

knockdown. An insecticide that has a rapid, although sometimes temporary, immobilizing effect on target insects; some knockdown materials have rapid killing abilities.

label. All printed material attached to or on a pesticide container.

labeling. The pesticide product label and other accompanying materials that contain directions that pesticide users are legally required to follow.

larva (plural: larvae). The immature form of insects that undergo complete metamorphosis.

leaching. The process by which some pesticides move down through the soil, usually by being dissolved in water, with the possibility of reaching groundwater.

material safety data sheet (MSDS). An information sheet provided by a pesticide manufacturer describing chemical qualities, hazards, safety precautions and emergency procedures to be followed in case of a spill, fire or other emergency.

metamorphosis. The more or less sudden physical transformation undergone by insects (and some other animals) during their development; the change of an insect from egg to nymph to adult or from egg to larva to pupa to adult.

monitoring. The process of carefully watching the activities, growth and development of pest organisms over a period of time, often using very specific procedures.

MSDS. Material safety data sheet.

nymph. The developmental stage of insects with gradual metamorphosis that hatches from the egg. Nymphs become adults.

ootheca (plural: oothecae). A capsule, constructed by female cockroaches, into which they deposit many eggs; some species carry an ootheca attached to the body, while others will deposit the ootheca in a hidden place.

organism. Any living thing.

organophosphates. A large group of pesticides that contain the element phosphorus and inhibit cholinesterase in animals.

parasite. A plant or animal that derives all its nutrients from another organism. Parasites often attach themselves to their host or invade the host's tissues. Parasitism may result in injury or death of the host.

penetrate. To pass through a surface such as skin, protective clothing, plant cuticle or insect cuticle. Also refers to the ability of an applied spray to pass through dense foliage.

persistence. The ability of a substance to remain in its original form without breaking down.

pest. An undesirable organism: (1) any insect, rodent, nematode, fungus, weed or (2) any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other microorganism (except

viruses, bacteria, or other microorganisms on or in living man or other living animals) which the administrator declares to be a pest under FIFRA, Section 25(c)(I).

pesticide. Any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any insects, rodents, nematodes, fungi or weeds, or any other forms of life declared to be pests; and any other substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant.

pesticide formulation. The pesticide as it comes from its original container, consisting of the active ingredient blended with inert materials.

pH. A measure of the acidity/alkalinity of a liquid: acid below pH 7; basic or alkaline above pH 7 (up to 14). A pH of 7 is neutral.

pheromone. A chemical produced by an animal to attract other animals of the same species.

physical control. Habitat alteration or changing the infested physical structure; e.g., caulking holes, cracks, tightening around doors, windows, moisture reduction, ventilation, etc.

physiological. Pertaining to the functions and activities of living tissues.

Poison Control Center. A local agency, generally a hospital, which has current information as to the proper first aid techniques and antidotes for poisoning emergencies. Centers are listed in telephone directories.

population. Individuals of the same species. The populations in an area make up a community.

powder. A finely ground dust container active ingredient and inert materials.

prebaiting. Placing nontoxic bait in a trap to overcome bait or trap shyness on the part of the target pest; once the target pest becomes used to feeding from the trap, the nontoxic bait is replaced with toxic bait.

predator. An animal that attacks, kills and feeds on other animals. Examples of predaceous animals are hawks, owls, snakes and many insects.

pupa (plural: pupae). The developmental stage of insects with complete metamorphosis where major changes from the larval to the adult form occur.

pyrethrins. The active ingredients of pyrethrum insecticides.

rate. The quantity or volume of liquid spray, dust or granules applied to an area over a specified period of time.

re-entry interval. The length of time following a pesticide application when entry into the treated area is restricted.

repellent. A pesticide used to keep target pests away from a treated area by saturating the area with an odor that is disagreeable to the pest.

residual pesticides. A pesticide that continues to remain effective on a treated surface or area for an extended period following application.

residue. Traces of pesticide that remain on treated surfaces after a period of time

resistance. The ability of a host plant or animal to ward off or resist attack by pests or to be able to tolerate damage caused by pests.

rodenticide. A pesticide used for control of rats, mice, gophers, squirrels and other rodents.

runoff. The liquid spray material that drips from the foliage of treated plants or from other treated surfaces. Also, the rainwater or irrigation water that leaves an area; this water may contain trace amounts of pesticide.

sanitation. A pest management practice that involves removing desirable food and habitat that could be used by and promote particular pests.

signal word. The word “Danger,” “Warning” or “Caution” appearing on a pesticide label that signifies how toxic the pesticide is and to what toxicity category it belongs.

soil permeability. Permeability is a function of soil texture, structure and pore space. Highly permeable, coarse, sandy soils have large pores that allow water and pesticides to move rapidly between soil

particles during rainfall or irrigation. Medium and fine-textured soils, water moves more slowly, allowing more time for pesticide adsorption and degradation. Each layer of soil can have a different permeability, but the overall permeability is determined by the most restrictive layer. Soil permeability can be enhanced by the presence of macropores, large channels produced by plant roots, earthworms, soil cracks and the burrowing of smaller animals.

soil organic matter. Soil organic matter helps to bind pesticides, especially those with high K_{OC} values and promotes degradation.

soil texture. Permeability and chemical adsorption are both affected by soil texture. Texture is determined by the reactive proportion of sand, silt and clay.

soil pH. The pH of the soil is a measure of its degree of acidity or alkalinity. pH affects the degradation rate of pesticides and the adsorption characteristics and mobility of ionic pesticides.

slope and landscape. Areas with high runoff capability will have less of an impact on water infiltration than areas that are flat or have a concave slope. Landscape that encourages runoff will minimize leaching. Landscape which holds water may increase leaching potential or may provide organic matter which assists in “holding” the pesticide.

soluble. A material that dissolves completely in a liquid.

solution. A liquid that contains dissolved substances, such as a soluble pesticide.

solvent. A liquid capable of dissolving certain chemicals.

sorptive dust (or powder). A fine powder used to destroy arthropods by removing the protective wax coating that prevents water loss.

space spray. A pesticide that is applied as a fine spray or mist to a confined area.

spot treatment. A method of applying pesticides only in small, localized areas where pests congregate rather than treating a larger, general area.

suppress. To lower the level of a pest population.

surface water. Water found in ponds, lakes, reservoirs, streams and rivers.

suspension. Fine particles of solid material distributed evenly throughout a liquid such as water or oil.

target. Either the pest that is being controlled or surfaces within an area that the pest will contact.

tolerance. The ability to endure the effects of a pesticide or pest without exhibiting any adverse effects.

total release. A pressurized insecticide dispenser that will release its entire contents into an area once it has been triggered.

toxic. Poisonous to living organisms.

toxicant. A poisonous substance such as the active ingredient in a pesticide formulation.

toxicity. The potential a pesticide has for causing harm.

toxin. A naturally occurring poison produced by plants, animals or microorganism; examples, the poison produced by the black widow spider, the venom produced by snakes, the botulism toxin.

tracking powder. A fine powder that is dusted over a surface to detect or control certain pests such as cockroaches or rodents. For control, the inert powder is combined with a pesticide; the animal ingests this powder and becomes poisoned when it cleans itself.

urban. A standard metropolitan area or a town of 2,500(+) occupants.

use. The performance of pesticide-related activities requiring certification include application, mixing, loading, transport, storage or handling after the manufacturing seal is broken; care and maintenance of application and handling equipment; and disposal of pesticides and their containers in accordance with label requirements. Uses not needing certification are long-distance transport, long-term storage and ultimate disposal.

vapor pressure. The property that causes a chemical to evaporate. The higher the vapor pressure, the more volatile the chemical or the easier it will evaporate.

vector. A carrier, and animal (e.g., insect, nematode, mite) that can carry and transmit a pathogen from one host to another.

vertebrate. Animal characterized by a segmented backbone or spinal/column.

virus. Ultramicroscopic parasites composed of proteins. Viruses can only multiply in living tissues and cause many animal and plant diseases.

volatility. The degree to which a substance changes from a liquid or solid state to a gas at ordinary temperatures when exposed to air.

water table. The upper level of the water saturated zone in the ground.

water solubility. A pesticide's water solubility is often viewed as an indicator of its mobility in water. Water solubility and adsorption to soil particles, for most compounds, are inversely related. However, like most rules there are exceptions. Water solubility greater than 30 ppm indicates that significant mobility is possible if the K_{oc} value is low (less than 300 to 500). EPA considers pesticides with solubility greater than 30 ppm and K_{oc} values less than 100 to be a concern in sandy soils.

Pesticides with solubilities of 1 ppm or less are believed to have a higher likelihood of runoff. Likewise, pesticides with high K_{oc} values have a higher likelihood of runoff than leaching. Pesticides with K_{oc} values of 1,000 or higher have a strong attachment to soil.

Solubility is measured in mg/l of the pesticide in water at room temperature (20 or 25 degrees C). It is generally the solubility of the pure (active ingredient) not the formulated product.

wettable powder. Pesticide formulation consisting of an active ingredient that will not dissolve in water combined with a mineral clay and other inert ingredients and ground into a fine powder.