Appendix B: Glossary

A

Abiotic – Related to non-living factors, such as air pollutants, wind, water, and temperature.

Absorption – The movement of a chemical into plants, animals (including humans), or microorganisms.

Acaricide – A pesticide used to control mites and ticks; a miticide is a type of acaricide.

Acidic – Having a pH less than 7.

Action Threshold – A predetermined level of pest infestation or damage at which some type of pest-management action must be taken.

Activated Charcoal – A finely ground charcoal that adsorbs chemicals.

Activator – An adjuvant added to a pesticide to increase its toxicity.

Active Ingredient – The chemical or chemicals in a pesticide product responsible for its pesticide activity.

Acute Effect – An illness that occurs shortly after exposure to a pesticide.

Acute Exposure – An exposure to a single dose of pesticide.

Acute Toxicity – An injury produced from a single pesticide exposure. The LD$_{50}$ and LC$_{50}$ are common indicators of the degree of acute toxicity (also see Chronic Toxicity).

Adjuvant – A substance added to a pesticide to improve its effectiveness, usability or safety, such as penetrants, spreader-stickers, storage stabilizers and wetting agents. Same as additive.

Adsorption – The process whereby chemicals are held or bound to a surface by physical or chemical attraction. Clay and high-organic soils adsorb pesticides more readily than lighter-textured soils.

Adulterated Pesticide – A pesticide that does not conform to the specified standard of quality contained on its label or labeling.

Aerosol – A chemical stored in a container under pressure. An extremely fine mist is produced when the material, dissolved in a liquid, is released into the air.

Aggregate Exposure – Under the Food Quality Protection Act combines the risks to the public not just from dietary exposure but also from drinking water, air, and many other sources of pesticide exposure.
Agitation – The process of stirring or mixing in a sprayer.

Agricultural Use Requirements Box – Required on all labels of pesticides covered by the Worker Protection Standard and includes specific requirements for WPS-covered handlers and workers.

Air-Blast Sprayer – A type of pesticide-application equipment that uses a large volume of air moving at high speed to break up and disperse spray droplets to create a fine mist.

Air Gap – Creating a physical separation (open space) between the end of the water fill hose and the spray tank opening to prevent backflow of liquids into the hose and contaminating a well or other water supply.

Air-purifying Respirators – Filters the air coming through the respirator.

Air-supplying Respirators – Provide clean fresh outside air through an air hose or from a pressurized air tank.

Algae – Relatively simple plants that are photosynthetic and contain chlorophyll.

Algaecide (or Algicide) – A pesticide used to kill or inhibit algae.

Alkaline – Having a pH greater than 7; also called basic.

Allergen – Any natural or synthetic substance that induces an allergy.

Allergic Response /Allergy – Hypersensitivity to a specific substance, often called the allergen. An allergic effect or allergy causes inflammatory responses in the body, including dermatitis; blisters; hives; red, itching, or swollen eyes; respiratory discomfort; asthma; illness; life-threatening shock; or death. Often the entire body is affected by the immune system inflammatory response.

Annual – A plant that completes its life cycle in one year.

Antagonism – The reduction of pesticide activity when two or more different pesticides are mixed together.

Antibiotic – Chemical produced by a microorganism that is toxic to other microorganisms, such as streptomycin and penicillin.

Anticoagulant – A chemical that prevents normal blood clotting; the active ingredient in some rodenticides.

Antidote – A practical treatment used to counteract the effects of poisoning.

Anti-siphoning Device – A hose attachment designed to prevent backflow of a pesticide solution from the spray tank into a water source.

Anti-transpirant – A chemical applied to a plant to reduce the rate of transpiration or water loss.

Application Rate – The amount of pesticide that is applied to a known area, such as an acre or 1,000 square feet.
Application Setback – The untreated areas left during pesticide applications along sensitive sites, such as surface water, neighbors, or non-target plants to protect those sites from pesticide contamination.

Aquifer – A geologic formation from which groundwater can be drawn. An aquifer can be a layer of sand, gravel, or other soil materials. It may also be bedrock with fractures through which water can flow.

Arachnid – A wingless arthropod with two body regions and four pairs of jointed legs. Spiders, ticks, and mites are arachnids.

Arthropod – An invertebrate animal characterized by a jointed body and limbs and usually a hard body covering that is molted at intervals. Insects, mites, and crayfish are arthropods.

Atropine (Atropine Sulfate) – An antidote used to treat organophosphate and carbamate poisoning.

Attractant – A substance or device to lure insects or other pests to a trap or poison bait.

Avicide – A chemical used to kill or repel birds.

Backflow (Back-siphoning) – The movement of a liquid pesticide mixture from a spray tank through the filling hose into the water source.

Bacteria (singular: Bacterium) – Single celled microscopic organisms, some of which are capable of producing diseases in plants and animals.

Bactericide – A chemical used to control bacteria.

Bait – A food or other substance used to attract a pest to a pesticide or a trap.

Band Application – An application of a pesticide or other material in or beside a crop row rather than over the entire field. (See Broadcast Application.)

Basal Application – An application to plant stems or trunks at or just above the ground line.

Beneficial Insect – An insect that is useful or helpful to humans. Examples are pollinators, parasites, and predators of pests.

Best Management Practices, BMPs (for protecting water) – Voluntary recommended practical, research-based ways for users of pesticides to prevent or minimize surface water and groundwater contamination

Biennial – A plant that completes its life cycle in two years.

Bioaccumulation – The ability of organisms to accumulate or store chemicals in their tissues.
**Biological Control** – The control of pests using predators, parasites, and disease-causing organisms. It may be naturally occurring or introduced.

**Biological Degradation** – The breakdown of chemicals due to the activity of living organisms, especially bacteria and fungi in the soil.

**Biomagnification** – The process whereby some organisms accumulate chemical residues in higher concentrations than those found in the organisms they consume.

**Biopesticide** – A pesticide derived from naturally occurring materials from living organisms.

**Boom** – A pesticide-application device attached to a truck, tractor, aircraft, or other vehicle, or held by hand, to which multiple spray nozzles are attached.

**Botanical Pesticide** – A pesticide produced from naturally occurring chemicals in plants. Examples: nicotine, pyrethrum, and rotenone.

**Brand Name** – The registered or trade name, or product name, number, or designation given to a specific pesticide product or device by the manufacturer or formulator.

**Break-down Products** – The resulting substances when a pesticide in the environment is changed into other compounds, typically by microorganisms, sunlight, naturally occurring chemicals in the soil, and plants.

**Breakthrough Time** – The length of time it takes a pesticide to pass through a material used in Personal Protective Equipment (PPE) to reach the skin.

**Broadcast Application** – The uniform application of a pesticide or other material over an entire field or area.

**Broadleaf Plants** – Plants with broad, rounded, or flattened leaves with netted veins. Examples: dandelions and roses, which have leaves different from the narrow, bladelike leaves with parallel veins of grasses, sedges, rushes, and onions.

**Broad-Spectrum Pesticide** – A pesticide that is effective against a wide range of pests.

**Buffers** – Adjuvants used to retard chemical degradation of some pesticides by lowering the pH of alkaline water and maintaining the pH within a narrow range, even with the addition of acidic or alkaline materials.

**Buffers** – A band of uncultivated land that exists between cultivated/developed property and lakes, streams, or wetlands. A buffer, also called a filter strip, reduces stormwater pollutants entering water bodies.
C

**Calibrate/Calibration** – To properly adjust equipment to apply the proper rate of a pesticide.

**Candidate Species** – Individual plant or animal species whose population is likely to be reduced in the near future to be eligible for “threatened species” status under the US Endangered Species Act.

**Cardiopulmonary Resuscitation (CPR)** – An emergency procedure for a person whose heart has stopped or is no longer breathing.

**Carbamates** – A group of pesticides commonly used for control of insects, mites, fungi, and weeds. N-methyl carbamate insecticides, miticides, and nematicides are cholinesterase inhibitors.

**Carcinogen** – A substance or agent able to produce malignant tumors (cancer).

**Carrier** – An inert liquid, solid, or gas added to an active ingredient to make a pesticide formulation. A carrier is also the material, usually water or oil, used to dilute the formulated product for application.

**Causal Organism** – The organism (pathogen) that under favorable environmental conditions and susceptible host may cause disease.

**Caution** – The signal word associated with pesticide products classified as slightly toxic; these pesticides have an oral LD$_{50}$ greater than 500 mg/kg and a dermal LD$_{50}$ greater than 2,000 mg/kg.

**Certified Applicator** – A person qualified to apply or supervise the application of restricted-use pesticides.

**Chemical Name** – The technical name of the active ingredient(s) found in the formulated product. This complex name is derived from the chemical structure of the active ingredient.

**Chemical-resistant** – A material used to make Personal Protective Equipment that prevents a pesticide from moving through it or has very slow pesticide movement through it.

**Chemigation** – The application of pesticides or fertilizers to a target site in irrigation water; when used in greenhouses, also known as injector systems.

**CHEMTREC** – The Chemical Transportation Emergency Center, which supports a toll-free number that provides 24-hour information for chemical emergencies such as a spill, leak, fire, or accident. The phone number is 1-800-424-9300.

**Chlorinated Hydrocarbon** – A pesticide containing chlorine, carbon, and hydrogen, many of which are persistent in the environment. Examples: chlordane, DDT, and methoxychlor. Also called organochlorines. Many no longer allowed to be sold and others no longer commonly used.

**Chlorosis** – The yellowing of a plant’s normally green tissue.

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**Cholinesterase** – A chemical catalyst (enzyme) found in humans and many other animals that regulates the activity of nerve impulses by deactivating the chemical neurotransmitter acetylcholine. Affected by organochlorine and carbamate pesticides.

**Closed Handling System** – Method of transferring a pesticide from the original container to application equipment that keeps the pesticide contained at all times to prevent spills or contact with the pesticide handler.

**Chronic Exposure** – Contact with small amounts of pesticide over a long period of time at a dose that does not trigger acute poisoning effects.

**Chronic Toxicity** – The ability of small amounts of pesticide from repeated, prolonged exposure to cause illness or injury. (See Acute Toxicity.)

**Commercial Applicator** – In Minnesota, a person who applies pesticides on customer’s land or sites.

**Common Name** – A unique name given to each pesticide active ingredient by a recognized international committee. Many pesticides are known by a number of trade or brand names, but each active ingredient has only one recognized common name. Example: the common name for Sevin insecticide is carbaryl.

**Compatibility Agent** – An adjuvant used to enhance the mixing of two or more pesticide products and/or fertilizers.

**Compatible** – When two or more chemicals can be mixed together without reducing the effectiveness or characteristics of any individual chemical in the mixture, they are said to be compatible.

**Concentration** – The amount of active ingredient in a given volume or weight of formulated product.

**Contact Effects** – Injury in people at the point of pesticide contact, including skin discoloration and irritation (dermatitis) such as itching, redness, rashes, blisters, and burns. Swelling, stinging, and burning of the eyes, nose, mouth, or throat are also contact effects.

**Contact Pesticide** – Any pesticide that affects a pest at the point of contact and does not move within the pest.

**Containment Pad** – An impermeable pad that is designed to catch spills, leaks, overflows, and wash water for reuse or disposal, often used for mixing and loading pesticides and cleaning equipment.

**Contamination** – The presence of an unwanted substance in or on a plant, animal, soil, water, air, or structure. (See Residue.)

**Corrosive Poison** – A poison containing a strong acid or base, which can severely “burn” the skin, mouth, stomach, or respiratory tract.
Cross-contamination – When one pesticide accidentally mixes with another pesticide, usually in an improperly cleaned sprayer or because of the airborne movement of a volatile pesticide.

Cross-resistance – When a pest population that is already resistant to one pesticide also becomes resistant to a related chemical with a similar mode of action.

Curative Pesticide – A pesticide that can inhibit or kill a disease-causing organism after it is established in the plant or animal.

D

DANGER—POISON – The signal word associated with pesticide products classified as highly toxic. This signal word is also associated with pesticide products that are corrosive or highly irritating to skin and eyes.

Days to Harvest – The minimum number of days permitted by law between the last pesticide application and the harvest date. Same as Preharvest Interval.

Days to Slaughter – The minimum number of days permitted by law between the last pesticide application to an animal or to the fodder fed to an animal and the date the animal is slaughtered.

Decontaminate – To remove or degrade a chemical residue from the skin or a surface.

Defoaming Agent – An adjuvant used to reduce the foaming of a spray mixture due to agitation.

Defoliant – A chemical that initiates the premature drop of leaves, often as an aid in harvesting a crop.

Degradation – The process by which a chemical compound is broken down to simpler compounds by the action of microorganisms, plants, animals, sunlight, other chemicals or other agents. Degradation products are usually, but not always, less toxic than the original compound.

Delayed Toxicity – Illnesses or injuries that do not appear immediately after exposure to pesticides. The effects generally occur between 24 hours to several days after exposure.

Dermal – Pertaining to the skin.

Dermal Toxicity – The ability of a pesticide to cause injury to a human or animal when it is absorbed through the skin.

Dermatitis – The inflammation, itching, irritation, or occurrence of a rash after exposure to a chemical.
Desiccant – A chemical that promotes drying or loss of moisture from leaves or other plant parts. A desiccant is also a chemical that removes water from arthropods or destroys the waxy covering that protects these organisms from water loss.

Detoxify – To render a pesticide active ingredient or other poisonous chemical harmless.

Diagnosis – The positive identification of a problem and its cause.

Diluent – Any inert liquid, solid, or gaseous material that is combined with a pesticide active ingredient during the manufacturing process. A diluent is also the water, petroleum product, or other liquid in which the formulated product is mixed before application. Also referred to as the Carrier.

Directed Application – A precise application to a specific area or site, such as a basal application to woody plants, crack-and-crevice treatment in a building or specially positioned nozzles so only weeds are sprayed during a band application to crops.

Disease – An impairment of health or a condition of abnormal functioning of a plant due to inoculation by a pathogen or abiotic sources of harm.

Disinfectant – A chemical or other agent that kills or inactivates disease-producing microorganisms in animals, seeds, or other plant parts. Also, commonly refers to chemicals used to clean or surface-sterilize inanimate objects (germicides).

Dispersing Agent – An adjuvant that facilitates the mixing and suspension of a pesticide formulation in water.

Dormant Spray – A pesticide application made in late winter or early spring before the resumption of active growth by plants.

Dose – The amount of a pesticide that enters a person’s body during a pesticide exposure.

Drift – The airborne movement of a pesticide spray, dust, particle, or vapor to any site other than the intended target site at the time of application or immediately following.

Drift Control Additive – An adjuvant added to a spray mixture to reduce drift.

Drop Spreader – A common type of granular application equipment that has an adjustable sliding gate that opens holes in the bottom of the hopper, allowing the granules to flow out by gravity feed.

Dry Flowable – A dry, granular pesticide formulation that forms a suspension when added to water. Same as Water Dispersible Granule.

Dust – A finely ground, dry pesticide formulation containing a small amount of active ingredient and a large amount of inert carrier or diluents, such as clay or talc.
E

Economic Damage (ED) – Occurs when the cost of preventable crop damage from a pest exceeds the cost to control that pest.

Economic Injury Level (EIL) – The pest population density that causes losses equal to the cost of control measures.

Economic Threshold (ET) – The pest population density (number of pests per unit of area) at which control measures are needed to prevent the pest from causing economic injury.

Emulsifiable Concentrate – A pesticide formulation produced by mixing an active ingredient and an emulsifying agent in a suitable petroleum solvent. When an emulsifiable concentrate is added to water, a milky emulsion is usually formed.

Emulsifying Agent (Emulsifier) – A chemical that aids in the suspension of one liquid in another when those liquids would not normally mix together.

Emulsion – A mixture of two liquids that are not soluble in each another. One is suspended as very small droplets in the other, with the aid of an emulsifying agent. Example: emulsifiable concentrate in water.

Encapsulated Pesticide – A pesticide formulation with the active ingredient enclosed in capsules of polyvinyl or other synthetic material; principally used for slow release and to prolong the pesticide’s effectiveness.

Enclosed Cab – A tractor or other piece of equipment that completely surrounds the occupant with glass and other materials with filtered air systems to reduce exposure to the pesticides during application.

Endangered Species – An individual plant or animal species whose population has been reduced to near extinction and classified as “endangered” under the US Endangered Species Act.

Environment – All the features that surround and affect an organism or group of organisms.

Environmental Protection Agency (EPA) – The federal agency responsible for implementing federal pesticide rules and regulations and registering pesticides.

EPA Establishment Number – A number assigned to each pesticide production facility by the EPA. The number indicates the plant at which the pesticide product was produced and must appear on all labels of that product.

EPA Registration Number – A unique number assigned to a pesticide product by the EPA when the product is registered by the manufacturer or the designated agent. The number must appear on all labels for a particular product.

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Eradicant – A chemical or other agent (steam, heat) used to eliminate an established pest from a plant, animal, or specific site (soil, water, buildings).

Eradication – A pest management strategy that attempts to eliminate all members of a pest population from a defined area.

Exposure – Unwanted contact with pesticides or pesticide residues by people, other organisms, or the environment.

F


First Aid – Emergency help or treatment given to an injured or ill person before regular medical services arrive or can be reached.

Fit Check – Simple procedure to ensure a good seal when wearing a respirator. Requires first blocking the respirator’s air outlets and then the air inlets to check for leaks.

Fit Test – A formal procedure under OSHA that checks for leaks in a respirator using harmless substances with a strong odor.

Flowable – A pesticide formulation in which very finely ground solid particles, composed of both active and inert ingredients, are suspended in a liquid carrier. These formulations are mixed with water before spraying.

Foaming Agent – An adjuvant designed to reduce pesticide drift by producing a thick foam.

Fog Treatment – The application of a pesticide as a fine mist or fog.

Foliar – Refers to pesticide applications to the leaves of plants.

Food Chain – Sequence of species within an ecological community, each member of which serves as a food source for the species next higher in the chain.

Food Tolerance – The maximum amount of a pesticide residue that may legally remain on or in food or feed commodities at harvest or slaughter; established by the EPA for each crop and every pesticide used on a specific crop.

Formulation – The physical state of a pesticide product as purchased (liquid, aerosol, dust, granule, soluble powder, etc.), containing a mixture of one or more active ingredients, carriers (inert ingredients), and other additives diluted for safety and ease of application.

Fumigant – A pesticide that forms gases or vapors toxic to plants, animals, and microorganisms.
Fungi (singular: Fungus) – Non-chlorophyll-bearing plants that live as saprophytes or parasites. Some infect and cause diseases in plants, animals, and humans or destroy wood and fiber products. Others are beneficial—for instance, decomposers and human food sources. Examples: rusts, mildews, molds, smuts.

Fungicide – A chemical used to control fungi.

Fungistatic Agent – A chemical that inhibits the germination of fungal spores or the growth of mycelium, but does not kill the fungus.

G

General-use Pesticide – A classification of pesticides by EPA that can be purchased and used by unlicensed or uncertified members of the public (see also Restricted-use Pesticide and Unclassified Pesticides).

Germination – The sprouting of a seed or the production of a germ tube (mycelium) from a fungus spore.

gpa – Gallons per acre.

gpm – Gallons per minute.

Granule – A dry pesticide formulation. The active ingredient is either mixed with or coated onto an inert carrier to form a small, ready-to-use, low-concentrate particle that does not normally present a drift hazard. Pellets differ from granules only in their precise uniformity, larger size, and shape.

Groundwater – Water located in aquifers beneath the soil surface from which well water is obtained or surface springs are formed.

Growth Regulator – A chemical that alters the growth processes of a plant or animal.

H

Habitat – The place where plants or animals live, feed, and reproduce.

Half-life – The time required for half the amount of a substance introduced into a living system or ecosystem to be changed into break-down products or eliminated by natural processes.

Handler – Under the Worker Protection Standard, is someone who uses pesticides or involved with their application.

Harvest Aid Chemical – A chemical material applied to a plant before harvest to reduce the amount of plant foliage (see also Defoliant).

Hazard – A source of danger

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Heat Stress – Overheating of the body that leads to illness and sometimes potentially life-threatening heat stroke.

Herbaceous Plants – Plants that do not develop woody tissues.

Herbicide – A pesticide used to control weeds.

Host – A plant or animal on or in which a pest lives and feeds.

Host Resistance – The ability of a host plant or animal to resist attack by pests.

Hydraulic Sprayer – A type of pesticide application equipment that uses water under pressure to deliver the pesticide to the target site.

Hydrolysis – Breakdown of a chemical in the presence of water.

Hypersensitivity – When the immune systems react strongly to the specific chemical levels well below acute effects.

Illegal Residue – A quantity of pesticide remaining on or in the crop/animal at harvest or slaughter that is either above the set tolerance or is not allowed to be used on the crop/animal.

Impregnates – Dry fertilizers, pet collars, livestock ear tags, adhesive tapes, plastic pest strips and other products with pesticides incorporated into them.

Incompatible – Two or more materials that cannot be mixed or used together.

Inert Ingredients – Inactive materials in a pesticide formulation that do not possess any pesticide activity, although some may be toxic or hazardous to humans or other animal exposed to them.

Ingredient Statement – The portion of the label on a pesticide container that gives the name and amount of each active ingredient, as well as the total amount of inert ingredients, in a formulation.

Inhalation Toxicity – The property of a pesticide that is poisonous to humans or animals when breathed in through the nose and mouth into the lungs.

Inoculum – That portion of the pathogen that can move or travel to a host and infect the host.

Inorganic Pesticides – Pesticides of mineral origin—they do not contain carbon.

Insect Growth Regulator (IGR) – A type of insecticide that controls certain insects by disrupting the normal growth processes from immature stage to adult.
Insecticide – A pesticide used to control or prevent damage caused by insects and related arthropods.

Insects – Arthropods characterized by a body composed of three segments and three pairs of legs.

Insoluble – Refers to a chemical that does not dissolve in a liquid. For example, a wettable powder does not dissolve in water but rather forms a suspension.

Integrated Pest Management (IPM) – A decision-making process that considers safety, environment, economic and other factors in combining various pest-control methods to keep pest populations below the economic injury level. Methods include cultural practices; use of biological, physical, and genetic control agents; selective use of pesticides and others.

Invert Emulsion – An emulsion in which water droplets are suspended in oil, rather than oil droplets being suspended in water.

Invertebrate – A class of animals that lacks backbones. Insects, spiders, nematodes, snails, and slugs are examples of invertebrates.

K

Karst Geology – Landscapes characterized by limestone or other bedrock that has caves, sinkholes and cracks that allows surface water direct access to groundwater. Typically has a lack of surface drainage.

Key Pest – A pest that may cause major damage, unless it is controlled (see also Secondary Pest).

L

Label – All printed material attached to or part of a pesticide container. The label is a legal document.

Labeling – The pesticide product label and all supplemental information provided by registrants and retailers regarding the pesticide and may not necessarily be attached to or part of the container. Labeling content must conform to the label.

Larvae (singular: Larva) – Immature forms of insects that undergo complete metamorphosis—developmental stages are egg, larva, pupa, and adult.

Larvicide – A pesticide used to kill insect larvae, commonly used to control mosquito and black fly larvae.
$LC_{50}$ – The concentration of a pesticide, usually in air or water, that can kill 50 percent of a test population of pests. $LC_{50}$ is usually expressed in parts per million (ppm). The lower the $LC_{50}$ value, the more acutely toxic the chemical is.

$LD_{50}$ – The dose or amount of a pesticide that can kill 50 percent of the test pests when eaten or absorbed through the skin. $LD_{50}$ is expressed in milligrams of chemical per kilogram of body weight of the test pest (mg/kg). The lower the $LD_{50}$ value, the more acutely toxic the chemical is.

Leaching – The movement through soil of a pesticide or other chemical dissolved in water.

Lethal Concentration – See $LC_{50}$.

Lethal Dose – See $LD_{50}$.

Life Cycle – The series of stages that an organism passes through during its life. Many pest species, both plants and animals, pass through several life stages, during which their susceptibility or tolerance to pesticides varies greatly.

Manifest – A shipping paper required for certain products regulated as hazardous materials under Department of Transportation regulations.

Material Safety Data Sheet (MSDS) – A document available from the manufacturer that provides information on chemical properties, toxicity, first aid, hazards, personal protective equipment, and emergency procedures to be followed in the event of a spill, leak, fire, or transportation crisis.

Metabolite – In pesticides, a compound derived from changes in the active ingredient through chemical, biological, or physical reactions. Metabolites may be simpler or more complex than the active ingredient and may or may not be more toxic than the original chemical.

Metamorphosis – A change in the shape, size, and/or form of animals as they develop from eggs through adults.

Microbial Degradation – Breakdown of a chemical by microorganisms.

Microbial Pesticide – Bacteria, viruses, fungi, and other microorganisms used to control pests, also called Biorationals.

Microencapsulated Pesticide – A formulation in which the pesticide active ingredient is encased in very tiny plastic capsules that release the pesticide slowly after application when the capsules start to break down.

Microorganism – An organism that is so small it cannot be seen without the aid of a microscope.
Mini-bulk Container – A container that ranges in volume from 40 to 600 gallons and is adapted to closed systems. A mini-bulk container can be returned to the dealer for refilling.

Minimum Risk Pesticides – Pesticides, often called 25(b) products, a special class of products, not subject to federal registration requirements because their ingredients, both active and inactive (inert), have been deemed demonstrably safe by EPA for the intended use. All other pesticide laws apply to these products.

Miscible Liquids – Two or more liquids that can be mixed and will remain mixed under most conditions. Water and ethyl alcohol are miscible; water and oil are not.

Mite – A small arthropod similar to an insect, but with eight legs, two body parts, and no antennae.

Miticide – A pesticide used to control mites, also called Acaricide.

Mode of Action – The way in which a pesticide exerts a toxic effect on the target plant, animal, or microorganism.

Molluscide – A chemical used to control snails, slugs, mussels and other mollusks.

Molting – In invertebrates, such as insects, spiders, and mites, molting is the process of shedding the outer body covering or exoskeleton. Molting takes place to allow the animal to grow larger.

Mutagen – A substance or agent able to cause genetic changes in living cells.

Mycelium – The mass of filaments that forms the body of a fungus.

Mycoplasma – A microorganism possessing many virus- and bacteria-like properties. Some cause plant diseases.

N

Narrow-Spectrum Pesticide – A pesticide that is effective against only one or a few species of pests; the term is usually associated with insecticides and fungicides.


Natural Enemies – The predators, parasites, and pathogens found in the landscape that attack and often kill other organisms.

Necrosis – The death of plant or animal tissues that results in the formation of discolored, sunken, and dead (necrotic) areas.

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Nematicide – A pesticide used to control nematodes.

Nematodes – Microscopic colorless, worm-like animals that live as saprophyles or parasites. Many cause diseases of plants or animals.

Neurotoxin – A substance or agent able to cause disorders of the nervous system.

No Observable Effect Level (NOEL) – The maximum dose or exposure level of a pesticide that produces no observable toxic effect on test animals.

Non-persistent Pesticide – A pesticide that remains active for only a short time in the environment.

Non-point Source Pollution – Pollution that comes from a widespread area. For example, the movement of pesticides into surface water or groundwater from handling and application of pesticides to an agricultural field, turf area, or right-of-way.

Non-selective Pesticide – A pesticide that is toxic to a wide range of plants or animals without regard to species. For example, a non-selective herbicide can kill or damage most or all plants it contacts.

Non-target Organisms – Plants or animals within or adjacent to a pesticide-treated area that are not the intended targets of a pesticide application.

Noncommercial Applicator – In Minnesota, a person who applies pesticides on an employer’s land or sites.

Noxious Weed – A plant defined by law as being particularly troublesome, undesirable, and difficult to control which requires land owners to manage the weed.

Nymph – The developmental state of insects with gradual metamorphosis that hatches from the egg. Nymphs become adults.

Occasional Pest – A pest that does not recur regularly, but causes damage intermittently as a result of changing environmental conditions or fluctuations in populations of natural enemies.

Oncogen – A substance or agent able to induce tumors (not necessarily cancerous) in living tissues (also see Carcinogen).

Oral Toxicity – The occurrence of injury or illness when a pesticide is taken by mouth.

Organophosphates – A large group of pesticides that contains the element phosphorus. Most are non-persistent insecticides, miticides, and nematicides. Many are highly toxic. Examples: parathion, diazinon, chlorpyrifos.
Ovicide – A material that destroys eggs.

Oxidizer – A highly reactive chemical that is potentially explosive and a fire hazard under certain conditions.

P

Parasite – A plant, animal, or microorganism living in, on, or with another living organism for the purpose of obtaining all or part of its food.

Particle Drift – See Drift.

Pathogen – A disease-causing organism.

Pellet – A pesticide formulation consisting of dry active and inert ingredients pressed into a uniformly sized and shaped ready-to-use material; larger than granules.

Penetrant – An adjuvant added to a spray mixture to enhance the absorption of a pesticide.

Percolation – The downward movement of water through soil.

Perennial – A plant that lives for more than two years.

Permeability – Refers to the ease with which water and dissolved pesticides can flow through porous materials, such as soil, gravel, or sand.

Persistent Pesticide (Persistence) – A pesticide chemical (or its metabolites) that remains active in the environment for an extended period of time. Some compounds can accumulate in animal and plant tissues or remain in the soil for years.

Personal Protective Equipment (PPE) – Devices and specialized clothing that protect pesticide applicators, handlers, and workers from exposure to pesticides.

Pest – An undesirable organism (insect, bacterium, fungus, nematode, weed, virus, or rodent) that is injurious to humans or things human value, desirable plants and animals, manufactured products, or natural products.

Pest Signs – Parts of the pest itself or other evidence of its presence, such as feeding marks, droppings, and tunnels created by a pest

Pest Symptoms – The characteristic damage on hosts caused by a pest.

Pesticide – Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

Pesticide Concentrate – A pesticide formulation before any dilution occurs.
**Pesticide Containment System** – Pesticide mixing and loading pads designed to safety contain spills, leaks, overflows, and waste water for reuse or disposal.

**Pesticide Handler** – Under the Worker Protection Standard, a person who works directly with pesticides, such as during mixing, loading, transporting, cleaning, storing, disposing, and applying, or who repairs pesticide application equipment.

**Pesticide Incident** – Minnesota state law defines an “incident” as the release of pesticide in a manner other than normal use according to label directions. Incidents include flood, fire, tornado, transportation mishaps, storage container rupture, portable container rupture, leak, spill, emission, discharge, escape, disposal, or other event that releases or immediately threatens to release an agricultural chemical into the environment.

**Pest Resistance** – See Resistance

**pH** – A measure of acidity/alkalinity; acid below pH7, basic or alkaline above pH7.

**Pheromone** – A substance emitted by an animal to influence the behavior of other animals of the same species. Some are synthetically produced for use as lures in insect traps.

**Photodegradation** – Break-down of chemicals by the action of sunlight.

**Phytotoxicity** – Chemical injury to plants.

**Piscicide** – A chemical used to control pest fish.

**Placards (Placarding)** – U.S. Department of Transportation public notice placards are diamond-shaped warning signs placed on all vehicles that transport certain types and quantities of hazardous materials. Quickly provides emergency responders with the necessary hazard information.

**Plant Growth Regulator (PGR)** – A pesticide used to regulate or alter the normal growth of plants or the development of their plant parts.

**Point of Runoff** – When a spray starts to run or drip from the leaves and stems of plants, or the hair or feathers of animals.

**Point-source Pollution** – The contamination of water and soil from a specific, identifiable place or location, such as a spill site or a permanent mixing, loading, and cleaning site.

**Poison Control Center** – An agency, generally a hospital, that has current information on proper first aid techniques and antidotes for poisoning emergencies. The national phone number is 1-800-222-1222.

**Post-emergence** – A pesticide that is applied after the weed or crop plants have appeared above the soil surface. The term is usually used to specify the timing of herbicide applications.
Posting – Placing notification signs next to pesticide-treated area.

**PPB** – Parts per billion. A way of expressing amounts of chemicals in or on food, plants, animals, water, soil, or air. One part per billion equals 1 pound in 500,000 tons.

**PPM** – Parts per million. A way of expressing amounts of chemicals in or on food, plants, animals, water, soil, or air. One part per million equals 1 pound in 500 tons.

**Precipitate** – A solid substance that forms in a liquid and settles to the bottom of a container; a material that no longer remains in suspension.

**Predator** – An animal that attacks, kills, and feeds on other animals. Examples include such animals as bears, wolves, coyotes, hawks, owls, snakes, fish, spiders, and many insects and mites.

**Pre-emergence** – A pesticide that is applied before the weed or crop plants have appeared through the soil. The term is usually used to specify the timing of herbicide applications.

**Pre-harvest Interval** – Same as Days to Harvest.

**Pre-mix** – A pesticide product formulated by the manufacturer with more than one active ingredient.

**Pre-plant Pesticide** – A pesticide applied before planting a crop.

**Pressure Rinse** – The process of decontaminating an empty pesticide container with water by rinsing with a special high-pressure nozzle.

**Private Applicator** – In Minnesota, a person who applies pesticides to produce an agricultural commodity on his/her own land, leased land, or rented land.

**Propellant** – The inert ingredient in self-pressurized products that forces the active ingredient from the container (also see Aerosol).

**Protectant** – A pesticide applied to a plant or animal before infection or attack by the pest to prevent infection or injury by the pest.

**Pupa** – The developmental stage of insects with complete metamorphosis between larva and adult.

**Pyrethroid** – A synthetic insecticide that mimics pyrethrin, a naturally occurring pesticide derived from certain species of chrysanthemum flowers.

**Quarantine** – A regulatory method to control the introduction and dissemination of plant and animal pests into new areas. Quarantine involves inspections, treatments, and destruction of contaminated plants, animals, or their parts.

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**Appendix B: Glossary**
**Rate of Application** – The amount of pesticide applied to a plant, animal, unit area, or surface; usually expressed as per acre or per 1,000 square feet, linear feet, or cubic feet.

**RCRA** – The Resource Conservation and Recovery Act, the federal law regulating the transport, storage, treatment, and disposal of hazardous wastes.

**Registered Pesticides** – Pesticide products that have been registered by the Environmental Protection Agency for the uses listed on the label.

**Repellent** – A compound that keeps insects, rodents, birds, or other pests away from plants, domestic animals, buildings, or other treated areas.

**Residual Pesticide** – A pesticide that remains effective on a treated surface or area for an extended period following application.

**Residue** – The pesticide active ingredient or its breakdown product(s) that remain in or on the target site or in the environment after treatment. Pesticide residues may be on treated crops, feed products, or livestock that are moved from the treatment site. Also used to describe pesticides on application equipment, PPE, and other contaminated items.

**Resistant** – A population of organisms that is uninjured or unaffected by a certain dosage of pesticide chemical used to successfully control other populations of the same organism. Plants and animals that are unaffected by a pest species are also termed resistant (see Tolerant).

**Restricted-entry Interval (REI)** – The amount of time that must elapse between treatment of a crop and the time when a person can re-enter and handle the crop without wearing protective clothing and equipment or receiving early-entry training; also referred to as Reentry Interval.

**Restricted-use Pesticide** – EPA classifies a pesticide as restricted-use due to higher levels of certain health, environmental, or other hazards related to use of the product. In Minnesota these pesticides can only be applied by certified private applicators or licensed commercial, noncommercial or structural applicators. Restricted-use pesticides are not available for use by the general public.

**Rinsate** – A liquid obtained from rinsing pesticide containers and application equipment.

**Risk** – The probability or likelihood that a specific harm or hazard will occur in a given situation.

**Rodenticide** – A chemical used to control rodents.

**Rotary Spreader** – A common type of granular application equipment that distributes granules by fling them out to the front, sides and/or behind the spreader, usually by means of a spinning disk or fan.
Route of Exposure – The four ways pesticides or other chemicals can enter the body: eyes, mouth, lungs, and skin.

RTU (Ready-to-Use) – Low-concentrate formulations that are ready to use and require no further dilution before application.

Runoff – The movement of water and associated materials over the top of the soil.

S

S T A R R – Minnesota’s five steps of incident response of: Secure the site; Telephone the State Duty Officer; Abate by stopping the source of the contamination; Recover by collecting released pesticide; and Remediate by properly disposing of contaminated soil and other materials.

Safener – An adjuvant used to reduce a pesticide’s toxicity to crops or other plants treated with the pesticide.

Saprophyte – An organism that obtains its food from dead or decaying organic matter.

Saturated Zone – The layer of soil, sand, gravel, or fractured bedrock in which all available spaces are filled with water.

Section 18 Emergency Exemption – A type of pesticide registration whereby a state may apply to EPA to allows the sale and use of a certain pesticide product for a specific non-registered purpose during a specified period of time for designated emergency situations.

Secondary Pest – A pest that becomes a serious problem when a key pest or natural enemy is controlled or eliminated.

Seed Protectant – A pesticide applied to seeds before planting to protect them from insects, fungi, and other soil pests.

Selective Pesticide – A pesticide that is toxic to some pests, but has little or no effect on others. Example: some fungicides are so selective that they control only powdery mildews and no other fungi.

Service Container – A container designed to hold concentrate or diluted pesticide mixtures; not the original pesticide container.

Shelf Life – The maximum period of time that pesticide concentrate can remain in storage before losing some of its effectiveness.

Shock – A collapse of circulatory function, caused by severe injury, blood loss, or disease.

Signal Words – Words that are required to appear on every pesticide label to denote the relative acute toxicity of the product. The signal words are DANGER—POISON used with a skull and crossbones.
symbol for potentially lethal products, DANGER for severe skin and eye damage, WARNING for moderately toxic, or CAUTION for less toxic compounds.

**Silvicide** – An herbicide used to destroy brush and trees.

**Site** – The crop, animal, structure, commodity, or area where a pesticide is applied to control pests.

**Slurry** – A thick suspension of a pesticide made from a wettable powder and water.

**Soil Application** – A pesticide applied directly on or in the soil rather than on a growing plant.

**Soil Drench** – To soak or wet the ground surface with a pesticide. Large volumes of the pesticide mixture are usually needed to saturate the soil to any depth.

**Soil Incorporation** – The movement of a pesticide into soil by either mechanical means or irrigation.

**Soil Injection** – The placement of a pesticide below the surface of the soil. This is a common application method for fumigants and termiticides.

**Soil KOC** – The Soil Organic Carbon-Water Partitioning Coefficient, measures the amount of pesticide adsorbed into the soil and is useful in helping to predict movement of a pesticide in the soil.

**Solubility** – The ability of a chemical to dissolve in a solvent, usually water.

**Soluble Powder** – A finely ground dry pesticide formulation that will dissolve in water or some other liquid carrier.

**Solution** – Mixture of one or more substances in another substance (usually a liquid) in which all the ingredients are completely dissolved. Example: sugar in water.

**Solvent** – A liquid such as water, oil, or alcohol that will dissolve another substance (solid, liquid, or gas) to form a solution.

**Special Local Need** – A type of EPA pesticide registration, a 24(c), that allow states to apply to EPA to expand or limit labeled uses of already registered pesticides to accommodate area-specific conditions.

**Spore** – The reproductive unit of a fungus.

**Spot Treatment** – An application to a small, localized area where pests are found.

**Spreader** – An adjuvant used to enhance the spread of a pesticide over a treated surface, thus improving the coverage.

**Stability** – Refers to the ability of a chemical such as a pesticide to resist breaking down into metabolites. A highly stable pesticide can be stored for long periods without loss of activity.
State Lead Agency (SLA) – The agency within a state or territory designated by the EPA as having the authority for carrying out the provisions of FIFRA.

Sterilant – A pesticide that prevents pests from reproducing.

Sticker – An adjuvant used to improve the adherence of spray droplets to a plant, animal, or other treated surface.

Stomach Poison – A pesticide that must be eaten by an animal to be effective—it will not kill on contact.

Structural Pests – Pests that attack and destroy buildings and other structures, clothing, stored food, and manufactured/processed goods. Examples: termites, cockroaches, clothes moths, rats, dry-rot fungi.

Structural Pests Control Applicators (SPCA) – In Minnesota, are “for hire” applicators who apply pesticides or use procedures to manage insects, rodents, and other structural pests in, on, and around buildings.

Summer Annual – Plants that germinate in the spring or summer and complete their life cycle within one year.

Supplemental Labeling – EPA-approved written, printed, or graphic material supplied by the pesticide manufacturer providing additional product information not present on the container label. The additional information may include new application sites and rates, safety guidelines, Worker Protection Standard and PPE requirements, and endangered species advisories.

Surfactant – An inert ingredient that improves the spreading, dispersing, and/or wetting properties of a pesticide mixture.

Susceptible – A plant, animal, or site that is affected by a pest. Also refers to pest populations that can be controlled by pesticides.

Suspension – A pesticide mixture consisting of fine particles dispersed or floating in a liquid, usually water or oil. Example: wettable powders or flowables in water.

Swath – The width of the area covered by one sweep of an airplane, ground sprayer, spreader, or duster.

Symptom – Any detectable change in an organism resulting from the activities of a pathogen or other pest. The term is also used to describe an indication of pesticide poisoning in humans and other animals.

Synergism – The effect of two or more pesticides applied together that is greater than the sum of the individual pesticides applied separately. Example: Pesticide X kills 40 percent of an insect population; Pesticide Y kills 20 percent. When applied together, X and Y kill 95 percent.

Systemic Effects – Poisoning effects that occur at sites other than the entry point into the body.
Systemic Pesticide – A chemical that is absorbed and translocated within a plant or animal.

T

**T C Number** – The MSHA/NIOSH (Mine Safety and Health Administration / National Institute of Occupational Health and Safety) “Tested and Certified” number on respirators are provided only on approved respirators. The number indicates the type of respirator.

**Tank Mix** – A mixture of pesticide products in a spray tank.

**Target** – The plants, animals, structures, areas, or pests at which the control method is directed.

**Technical Material** – The pesticide active ingredient in pure form as it is manufactured by a chemical company. It is usually combined with inert ingredients or additives to create formulations such as wettable powders, dusts, emulsifiable concentrates, or granules.

**Temperature Inversion** – A weather-related event that occurs when cool air is trapped near the surface of the ground under a layer of warm air. Under these conditions, very little vertical mixing of air occurs, small spray droplets or vapors may remain suspended in the cool air layer for long periods, and the droplets move with any air flow. Damage from spray drift can occur under such conditions.

**Teratogen** – A substance or agent able to produce abnormalities or defects in living human or animal embryos and fetuses. These defects are not usually inheritable.

**Termiticide** – An insecticide used to control termites.

**Thickener** – A drift control adjuvant, such as cellulose or gel, used to promote the formation of a greater proportion of large droplets in a spray mixture.

**Threatened species** – Under the US Endangered Species Act, a plant or animal likely to become “endangered” within the foreseeable future.

**Tolerance** – See Food Tolerance

**Tolerant** – A characteristic of organisms (including pests) that are able to withstand a certain degree of stress such as weather, pesticides, or attack by a pest.

**Toxic** – Poisonous to living organisms.

**Toxicant** – A poisonous substance

**Toxicity** – The degree or extent to which a chemical or substance is poisonous.

**Toxicology** – The study of the effects of toxic substances on living organisms.
Toxin – A naturally occurring poison produced by plants, animals, or microorganisms. Examples: the poison produced by the black widow spider, the venom produced by snakes, the botulism toxin.

Trace Exposure – Contact to very low levels of pesticides or other chemicals that do not result in acute or known chronic health effects.

Trade Name – A brand name registered as a trademark by the manufacturer.

Translocation – The movement of materials within a plant or animal from the site of entry. A systemic pesticide is translocated.

Transportation Security Plan – A plan required of all operations that transport above certain amounts of designated hazardous materials. The U.S. Department of Transportation requires that the plan include protection against unauthorized access, a security check for employees that pick up and transport placarded hazardous materials, and a security plan for the intended travel route. Vehicles that transport pesticides in these quantities must be placarded (see Placards).

Triple Rinse – The process of decontaminating an empty pesticide container by partially filling the container with water, replacing the lid, shaking the container, and then pouring the rinsate in the spray tank. This process is repeated three times.

U

Ultra-low Volume (ULV) – Sprays that are applied at 0.5 gallon or less per acre, often as the undiluted formulation.

Unclassified Pesticides – Pesticides that are commonly referred to as general-use pesticides. They can be bought and used by the general public without special permits or restrictions.

USDA – United States Department of Agriculture.

V

Vapor Drift – The movement of chemical vapors from the application site. Like pesticide spray drift, vapor drift can injure non-target plants or animals.

Vapor Pressure – The property that causes a chemical to evaporate. The higher the vapor pressure, the more volatile the chemical—the easier it will evaporate.

Vegetative Buffer (Vegetative Filter Strip) – An area of permanent close-growing vegetation, commonly grasses, over which field runoff passes before entering surface water to reduce pesticide contamination of water.

Appendix B: Glossary
Vector – An animal (e.g., insect, nematode, mite) or plant (e.g., dodder) that can carry and transmit a pathogen from one host to another.

Vertebrate – An animal characterized by a segmented backbone or spinal column.

Virus – Ultramicroscopic parasites. Viruses can multiply only in living tissues and cause many animal and plant diseases.

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

W

Warning – A signal word used on pesticide products that are considered moderately toxic; these pesticides have an oral LD₅₀ between 50mg/kg and 500mg/kg or a dermal LD₅₀ between 200 and 2,000mg/kg.

Waste Pesticides – Pesticide products that cannot be used as originally intended, old pesticides that may no longer be effective, or pesticides no longer needed or wanted.

Water-dispersible Granule – A dry, granular formulation that breaks apart and disperses to form a suspension when added to water (see Dry Flowable).

Waterproof – A PPE material that prevents water and water soluble mixtures from penetrating the material, but may not prevent oil, solvent or other types of substances from moving through the material.

Water-resistant – A PPE material that keeps a small amount of fine spray particles or small liquid splashes from penetrating through the material, but will allow larger amounts of water and water soluble mixtures to pass through the material at a low rate.

Water-soluble Concentrate – A liquid pesticide formulation that dissolves in water to form a true solution.

Water-soluble Packet – Wettable powder or soluble powder formulations packaged in a special type of plastic bag that dissolves and releases its contents when placed in water.

Water Table – The boundary between unsaturated rock or soil and the saturated zone.

Weed – A plant growing where it is not wanted or where it is in direct conflict with the well-being of humans, animals, or property.

Wettable Powder – A dry pesticide formulation or powder that forms a suspension when added to water.

Wetting Agent – An adjuvant used to reduce the surface tension between a liquid and the contact surface for more thorough coverage.
**Winter Annual** – Plants that germinate in the fall and complete their life cycles within one year.

**Worker** – Under the Worker Protection Standard, a worker is someone working in or near areas where pesticides have been applied.

**Worker Protection Standard (WPS)** – A federal regulation developed to reduce the risk of pesticide poisoning and injuries among agricultural workers and handlers on farms or in forests, nurseries, or greenhouses. The WPS requires agricultural employers to provide protections to workers and handlers, including but not limited to: safety training, posting of application sites, and decontamination supplies.