

Appendix I. Pesticide Terms

(updated October 2008)

Active ingredient - That portion of a pesticide formulation that is toxic to pests (a.i.).

Acute toxicity - Ability of a substance to cause ill effects that develop soon after exposure; usually used to describe toxicity of a pesticide to humans or animals.

Actual - The active ingredient of a fertilizer; for example 13-16-10 contains 13 kg nitrogen, 16 kg phosphate and 10 kg potash in each 100 kg of fertilizer mix.

Adjuvant - An agent added to a pesticide mixture to help the active ingredient do a better job of wetting, sticking to or penetrating the target pest or weed.

Aeration - The process by which air in soil is replaced by air in the atmosphere; often refers to the time required for a toxic fumigant to leave treated soil before it is safe to seed or transplant.

a.i. - Active ingredient.

Carrier - A material mixed with active ingredients to make a fertilizer or pesticide easier to handle and apply (e.g. finely divided clay or talc; petroleum distillate).

Chelate - When referring to minor element fertilizers, a complex molecule combining a metallic ion (e.g. Fe) with an organic chemical to improve availability and uptake from the soil and to reduce toxicity of foliar application.

Chronic toxicity - Ability of a substance to cause ill effects that don't appear for some time after exposure; often used to describe long-term health effects on humans or test animals following repeated or prolonged exposure to a pesticide.

Compatibility - Materials are compatible if one does not reduce the effectiveness of the other, if a precipitate does not form, and if crop injury does not result from use of the combination.

Contact pesticide - An insecticide or herbicide that kills the insect or weed by direct contact. A contact insecticide must actually touch the insect or the insect must walk onto a droplet in order to be effective. A contact herbicide must cover as much of the foliage as possible to be effective. To kill deep-

rooted perennial weeds, the herbicide must also be translocated from the leaves into the roots.

Detergent - A cleaning agent. Because of their surface active properties, detergents have a variety of other uses. (See "Surfactant.")

D - In pesticide terms, a dust formulation.

DF - A dry flowable formulation of a pesticide in which water dispersible granules are used instead of wettable powders which are dusty and more hazardous for the person filling the spray tank; sometimes referred to as WDG.

DG - A dry granular formulation of a pesticide; usually applied in the planting furrow, in the case of insecticides or broadcast on the soil surface, in the case of herbicides.

Drench - A drench is a spray applied in a high volume of water in order to penetrate dense foliage or soak the soil with pesticide in an attempt to control soil-inhabiting insects or pathogens. A drench requires at least 1000 L/ha of water as an overall spray of a seed-bed, for example, or it may be applied as a directed spray at the base of row crops after transplanting.

Dust - A pesticide formulation in which a low concentration of active ingredient is attached to finely ground dry particles which are applied without further dilution.

E - A liquid pesticide formulation in which the active ingredient will form an emulsion when mixed with water; also referred to as EC.

EC - Is an abbreviation commonly used for an emulsifiable concentrate pesticide formulation and the electrical conductivity of a solution.

Electrical conductivity (EC) - The ability of a salt solution to conduct an electrical current. In crop production, provides a quantitative measure of the salt concentration in a solution. It provides only an approximate measure of the total quantity of nutrients in a solution, since not all nutrients are detected (e.g. urea). It is also used to describe the suitability of water for irrigation purposes.

Emulsifiable concentrate (EC) - A liquid pesticide formulation consisting of active ingredient, solvent and an emulsifier that can mix with water to form an emulsion (e.g. Diazinon 50EC).

F - Abbreviation for a flowable formulation of pesticide.

Flowable - A pesticide formulation in which finely ground particles are suspended in a liquid carrier; developed to replace wettable powders to reduce operator hazard during filling of the sprayer

Formulation - In pesticide terms, the form in which the pesticide is packaged, sold and used. It consists of a mixture of active ingredient, carrier and adjuvants.

Fumigation - The use of pesticides in gaseous form to destroy insects, pathogens, nematodes and weeds.

G - Granular formulation of a pesticide.

Granular pesticide - Relatively coarse particles with a low concentration of active ingredient. They are applied dry with a spreader, seeder or special applicator.

Instar - Used to identify the progressive stages in the life cycle of an insect which moults repeatedly in order to grow.

IPM - Integrated pest management; management of pests using a combination of cultural, biological, and chemical methods with due consideration for the environment.

L or LC - A liquid formulation of a pesticide; similar to E and EC.

LD₅₀ - Is a measurement of the acute toxicity of a pesticide. It is expressed as the milligrams of chemical per kilogram of body weight of the test animals that is required to kill 50% of the test population. The lower the LD₅₀, the more acutely toxic the pesticide. This does not, however, indicate the long term (chronic) health effects of the pesticide.

Nematicide - A pesticide used to control nematodes; may be applied as fumigants, granules, foliar sprays or soil drenches.

Pesticide - Any kind of material that is used to kill, control and manage pests including insecticides, fungicides, herbicides, miticides, nematicides, and rodenticides. Plant growth regulators are also

considered to be pesticides for the purposes of regulation and control.

Pesticide residue - A deposit that remains in, or on, a product following application of a pesticide; usually taken to mean the amount that is still present when the crop is harvested and/or marketed.

pH - A measure of acidity or alkalinity. It measures the activity of H⁺ ions in solution. (Expressed as a negative logarithmic scale, e.g. pH = 6 has ten times more H⁺ ions than pH = 7.) Soils in which the soil solution is above pH 7 are said to be alkaline, while those below pH 7 are said to be acidic. Most plants grow best between pH 5.5 and 6.5. The pH of water affects pesticide efficacy.

Phytotoxicity - Damage to a crop plant following the application of pesticides. Chances of phytotoxicity can be reduced by reading the warnings on the label, carefully measuring the correct quantities, and observing weather conditions prior to application.

PPM - A measure of concentration expressed as parts per million; often used to describe the concentration of foliar nutrient sprays, disinfectant solutions, solubility of soil-applied herbicides, and pesticide residues. 1ppm = 1 gram in 1000 kilograms or 1 mL in 1000 litres.

Residue tolerance - The maximum amount of a pesticidal residue that may lawfully be present in, or on, a food product offered for sale. It is expressed in parts per million.

SC - A sprayable concentrate pesticide formulation.

SG - A soluble granule pesticide formulation.

SL - A soluble liquid pesticide formulation.

SP - A soluble powder pesticide formulation.

Spray - A pesticide formulation or nutrient dissolved or suspended in a liquid, usually water, which evaporates after application to leave a uniform deposit of pesticide or nutrients on the plant or soil surface.

Spreader sticker - An adjuvant that assists in the even distribution of the spray solution over the target and also helps it to adhere to the treated surface.

Surfactant - A compound which reduces the surface tension of a liquid (e.g. emulsifiers, soaps, wetting agents, detergents, and spreader stickers)

allowing close contact with the sprayed surface which might otherwise repel the droplets of liquid.

Systemic pesticide - A pesticide which is absorbed into and flows through the vascular system of a plant or animal. Examples are **Cygon** insecticide and **Roundup** herbicide.

Toxicity - The degree to which a substance is harmful or poisonous to a living organism. In terms of pesticides, mammalian toxicity refers to the potential for poisoning of humans and higher animals; phytotoxicity refers to the potential for injury to plants.

W or WP - A wettable powder formulation of a pesticide.

Water-soluble packet - A pesticide formulation in which a premeasured quantity of a wettable powder is sealed in a packet that will dissolve in water. The packets are intended to be added directly to the spray tank, thereby eliminating worker exposure to the concentrated pesticide at mixing. Exposure to moisture or excessive handling can rupture the packets.

Wettable powder - Dry formulation which is normally mixed with water to form a sprayable suspension. Due to the danger of inhalation and spilling the powder while filling the spray tank, most toxic wettable powders are now sold in small soluble bags which can be dropped in the spray tank without being opened.

Wetting agent - An adjuvant that helps solutions or suspensions make better contact with surfaces to be treated; similar to a surfactant.

WSP or WSB - A pesticide that is sealed in a water-soluble packet or bag.