Pacific Pests, Pathogens and Weeds - Online edition

Pesticide label - how to read it (288)

What's on the label?

The pesticide label is an important legal document. Always read the label before purchasing the product, and again before and after using it.

The label has information on the type of product, what it contains, what crops it may be used on, the pests it may be used against, how it may be applied, personal protection, information on transport, storage, disposal, environmental concerns, and what to do in emergencies.

The Food and Agriculture Organization of the United Nations (FAO) recommends that the label is in three panels.

The central panel: The names and technical information of the product.

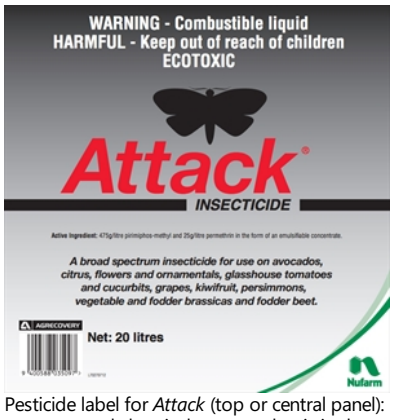
The left-hand panel: Directions for use - the crops, and when, where and how to use.

The right-hand panel: Safety precautions, first aid and disposal.

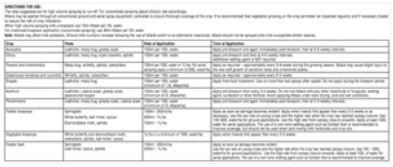
Often the sections are laid out in a row: left (Directions for use), central (Technical information), and right (Safety precautions). BUT NOT ALWAYS. The central panel may be above, the left in the middle, and the right below.

Always read the label before purchasing the product, and using it.

As an example, we are using the label on *Attack*, an insecticide sold in New Zealand.



Pesticide label for *Attack* (top or central panel): common and chemical names, what is in the product, what it is used for, as well as the risks involved in using it.



Pesticide label for *Attack* (middle or left panel): Directions for use - how to use the chemical, rates, and how to apply it.

Pesticide label for *Attack* (lower or right panel): Safety precautions, first aid and disposal.

Central panel

The central panel contains information on common and chemical names, what is in the product, what it is used for, as well as the risks involved.

Warnings: The chemical is a 'combustible liquid', i.e., it can catch fire and burn; it is harmful, so keep it away from children, and it is 'ecotoxic': i.e., it can damage the environment, particularly fish and bees. The warnings are in large letters.

Trade name: A name used by a company, for example, *Attack* or *Bravo*. This is in large letters. Often the company logo is present.

Common name: A name recognised internationally, for example, pirimiphos-methyl and permethrin (*Attack*) and chlorothanonil (*Bravo*). [On some labels, it is called the Active Ingredient, and amounts are given, e.g., 475 g/l pirimiphos-methyl and 25 g/litre permethrin (*Attack*)].

What is it: Insecticide, a fungicide, a herbicide, etc.

What it is used for: It describes the type of chemical and its use, e.g., "A broad-spectrum insecticide for use on avocados, citrus, flowers and ornamentals, glasshouse tomatoes ..."

Formulation: This describes how the chemical is made as a emulsifiable concentrate - EC; wettable powder - WP; granule - G; or dust - D.

Diagram. FAO safety pictograms for pesticide labels.

- EC - the chemical is dissolved in a liquid (solvent plus surfactant) that forms fine droplets when mixed with water
- WP - the chemical is made into a solid, finely ground, and then forms a suspension when mixed with water
- G - a mix of chemical, inert substances (called fillers) and binding substances, and then made into pellets.
- D - a mix of chemical and inert substances (called fillers).

***Net content*:** The total weight (kg), or volume (litres) of the package.

Barcode: Retailers' information.

AGRECOVERY: Note, this is New Zealand's free or subsidised program for disposing of unwanted pesticides. It does not apply to other countries.

Right panel

The right panel contains information on safety precautions, first aid, and disposal. It may contain some of the items listed below:

Hazard class: These numbers are codes that apply to the *Hazardous Substances and New Organisms Act of New Zealand*; for instance, 3.1D is *Flammable liquid - low hazard* (physical); 6.4A is *Substances that are irritating to the eye* (health); and 9.3A *Substances that are very ecotoxic to terrestrial vertebrates* (environmental). The WHO has a different set of hazard classes for health, based on eating or drinking the chemical and its effect on skin (on rats): 1a extremely hazardous; 1b highly hazardous; II moderately hazardous; III slightly hazardous; U unlikely to present acute hazard.

The WHO has introduced another system, the GHS classification - *Globally Harmonised System of Classification and Labelling of Chemicals* - with five categories, based on toxicity of chemicals to rats.

Approved handler: People using the product must be registered; usually this means they should be trained pesticide operators. In many countries, people who apply pesticides must be registered before they can buy and apply pesticides. Also, the product must not be used in any other way than stated in the label, without appropriate authority.

Storage: Store the product in its original container, tightly closed, and away from heat, food and out of reach of children, preferably in a locked cupboard. In New Zealand, there are different rules depending on the amount of product stored in one place.

Protective clothing: This covers the equipment and clothing that should be worn when mixing and applying pesticides, e.g., masks (including respirators) and goggles to protect mouth and eyes, gloves, boots, hat and overalls. After spraying, clothing should be removed and hands and face washed. Clothes used when spraying should be washed separately. Do not eat, drink or smoke when spraying.

Disposal: Notes on how to clean the sprayer, and dispose of the washings (usually by spraying on soil at the side of the field, away from humans and livestock). How to deal with the container when empty; how to clean it first and then either bury it or send it to a landfill. Do not re-use the container.

First aid: What to do and who to contact if the product is swallowed, skin or hair is contaminated, or the chemical is splashed into the eyes. Usually, a doctor would be called, clothing removed and skin and eyes flushed with water. Depending on the pesticide, the label says whether vomiting should be induced or not. If inhaled, victims should be moved to fresh air, and given CPR (cardiopulmonary resuscitation) if the heart stops beating.

Spillage: What to do if a spill occurs. Wear protective clothing, cordon off the area, prevent the chemical from entering drains, and absorb it with inert material, and place it in bins for disposal in a landfill. Wash contaminated area with water.

Transport: How the chemical should be transported, especially whether public vehicles can be used.

Pictograms: These are precautionary symbols with messages without the use of words (Diagram). A number have been devised by FAO.

Left panel

The left panel give information on how to use the chemical, rates, and how to apply it.

Crops/pests: A list of pests and diseases for which the chemical is recommended in a country. Note, many countries have registration schemes specifically naming the crops on which the chemical can be used.

How to mix and apply: Some chemicals need to be pre-mixed before they are added to the tank of the sprayer and mixed with a larger volume of water. The application of a chemical is usually given either (i) X g/litre of the product, sprayed until run off, or (ii) X kg/ha of the product using Y litre water (adjusted for young and fully developed crops). When to start spraying is often given, and the interval between applications, i.e., apply the chemical every 2-3 weeks.

Re-entry period: This is the time (usually in days) when it is safe to re-enter a crop after spraying.

Pre-harvest interval (commonly called the with-holding period): The number of days between the last application of a chemical and crop harvest. This is very important information to make sure that the harvest does not have residues that could harm people eating it.

Compatibility: Two chemicals can sometimes be mixed together, and used as one. Some companies will say if specific mixtures are safe (usually their own!). However, it is best not to mix pesticides in case the mixing changes their effectiveness.

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Information from Lowe JC, Parker JMH (1997) *Plant protection in the Pacific Islands: a trainers' guide*. Prepared and printed at the SPC headquarters, Noumea, New Caledonia. Pictograms FAO (Food and Agriculture Organization) (1995) *Guidelines on Good Labelling Practice for Pesticides*. Rome, Italy. (http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/list-guide-new/en/).

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