

Safety with agricultural chemicals

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prepared by the Regulatory Section, Division of Agricultural Chemistry

Toxicity

Most agricultural chemicals are toxic. Toxicity is measured in experiments with laboratory animals (usually rats) by feeding the material, painting it on, and injecting it under the skin. This measurement is known as an LD50 (lethal dose 50%) and simply means that at a certain dose level, 50% of the test animals died. It is expressed in milligrams of active chemical per kilogram of animal body weight.

The Poisons Act 1962 groups chemicals into various schedules according to their **toxicity**. Those relating to agricultural commodities are Schedule 5, 6 & 7. Each schedule requires specific headings:

SCHEDULE 5

WARNING

KEEP OUT OF REACH OF CHILDREN

SCHEDULE 6

POISON

NOT TO BE TAKEN

KEEP OUT OF REACH OF CHILDREN

SCHEDULE 7

DANGEROUS POISON S 7

NOT TO BE TAKEN

KEEP OUT OF REACH OF CHILDREN

The Pesticides Act requires the statement 'Read Safety Directions Before Opening' to be printed as the last line in each of the above headings, where safety directions are required on the label.

Hazard — or, What is the effect on the user?

This does not have a measure. It is an evaluation of toxicity, of formulation, of where the product is to be used and of the dilution rate.

A chemical of high toxicity does not necessarily have a high hazard. Maldison used for grain

treatment at 1 kg/litre has a high hazard, but when used in the home garden as a 10 g/kg dust, or as a flea powder for pets, the hazard is medium to low.

The real hazard from a chemical is through skin absorption, breathing the dust or spray mist, or continuous exposure to the concentrate.

Safety directions and first aid

The Pesticides Regulations stipulate the **safety directions** and **first aid statements** that must appear on labels. Read them carefully as they are related to the **hazard and toxicity** of a product.

If you suspect poisoning follow the first aid instructions, and contact your local doctor or the POISONS INFORMATION CENTRE: phone: Melbourne (03) 347 5522.

General instructions for the safe use of agricultural chemicals

Protective clothing:

Persons handling agricultural chemicals must have adequate protection against breathing in the vapor and against splashes on their skin from the concentrated chemical and spray mixture.

(a) Inhalation of vapor: An efficient face mask respirator will reduce the inhalation of vapor, spray droplets, or dust particles. The cartridges must be replaced after eight hours' exposure to spray, when the operator finds it hard to breathe, or when the operator notices a chemical smell through the mask.

Before use check that:

- the mask is airtight
- the inlet and exhalation valves are working correctly (use cardboard test discs supplied).

(b) Skin protection: Wear a cotton boiler suit buttoned at the neck and wrists. It should be laundered daily and changed as soon as it becomes visibly wet from spray.

Wear a hat and gloves. Covering the head and face is most important as this area is seven times more absorbent than the hands.

Wear rubber gloves and boots. Make sure your trousers are worn outside the boots.

Note: Under the Health Act 1958 ('Use of Pesticides Regulations 1953') an employer must provide protective clothing, and the employee must wear it, when using specified chemicals.

Safe handling:

It is the concentrate that is potentially more hazardous, so wear protective clothing and take special care when preparing the spray mixture.

Remember these points:

- prepare the spray out of doors
- wash off any splashes immediately
- always wear a respirator when spraying in closed areas
- never blow down hose lines or spray nozzles to clear them
- do not spray on windy days — drift may effect surrounding areas.

Spraying operation:

Before starting check spray equipment for

leaks, blocked nozzles or faulty hoses.

Keep a supply of atropine tablets and Ipecac syrup in a first-aid box on the spraying rig or tractor. Also carry soap, towel and clean water.

While spraying, make sure you do **NOT** work in the spray drift.

When finished, wash all protective clothing in soap and water. Do **NOT** put overalls in with the household wash; you may contaminate your family's clothing.

Wash out measuring utensils.

Do **NOT** use kitchen utensils for measuring chemicals. Store agricultural chemicals, containers and measures in a locked, well-ventilated cupboard or shed, and do **NOT** use measures for any other purpose.

Dispose of containers with leaks or illegible labels. Remember an agricultural chemical has on the average a shelf-life of only two years.

Old, badly damaged or empty containers must be destroyed so that they do not pollute the environment (see agnote 39/79, 'Disposal of pesticide containers and surplus pesticides').