

PESTICIDES are substances or mixtures of substances that are intended to destroy, suppress, or alter the lifecycle of any pest such as vermin, insects, weeds, mould etc. Pesticides can be either naturally derived or synthetically produced. The term Pesticides includes herbicides, fungicides, insecticides, and pesticides.

PESTICIDE CLASSES:

Organophosphates, Organochlorines, Carbamates, Organobromides, Inorganics, Phenoxy herbicides, Natural products, Insect Growth Regulators, Pyrethroids, Biological Control Agents.

PESTICIDE INGREDIENTS:

As well as the active component, pesticides also contain other 'inert' ingredients that are present for purposes such as: a dilution medium, dispersion control, potentiate the active ingredient, odour suppression or 'deterrent' odours etc.

ROUTES OF EXPOSURE:

Oral ingestion (eg through foods, water) ; Dermal absorption (through own use or from spray drift); Inhalation (through own use or from spray drift)

WHERE PESTICIDES ARE USED:

WHERE FORMULATED PESTICIDE PRODUCTS CAN BE FOUND

Lawn, Garden and Household Pesticide Product Usage

Agricultural Pesticide Product Usage

v Residential homes, lawns & gardens

v Home pest infestations – wasps, cockroaches, ants

v Scabies & lice treatments

v Pet flea/tick collars & treatments

v Golf courses

v Local Council applications

v Public parks & gardens

v Schools

v Hospitals and Health Care Facilities

v Public buildings

v Railway lines and sidings

Farms - such as Broadacre cropping (wheat, oat, barley etc); Cotton; Sugar Cane; Horticulture – Fru

Greenhouses

Orchards

Farm produce

Food products

Livestock pests and diseases

Broadscale application for mosquito control in the urban environment

Highway verges

For both Lawn, garden and household pesticides and agricultural pesticides there is run off into ground and surface water.

Pesticides used outdoors can be tracked into the house on shoes and clothing.

PESTICIDE USE IN URBAN AND AGRICULTURAL AREAS

“There are about 50,000 farms, plant nurseries, government agencies, local authorities, sports clubs and commercial pesticide applicators that use pesticides on a commercial scale in NSW. These entities are estimated to make a minimum of between 600,000 and 900,000 separate pesticide applications each year. This is divided into 250,000 to 500,000 applications in the agricultural, farming, forestry, sporting and public sectors, and 380,000 applications by urban pest controllers and fumigators Data provided by ABS (1996) shows that in 1991–92, over 700,000 L of herbicide, insecticide and fungicide were collectively applied to between 3.3 million and 4.5 million hectares of land in NSW.” NSW EPA, 2001.

Since then, the numbers of applications and volume of pesticides used are likely to have increased. In states such as Queensland where mosquito infestations are a large problem aerial and ground application of mosquito pesticide treatments occur on a regular basis in densely populated urban areas.

According to the Australian Bureau of Statistics 1998 survey approximately 79% of households reported using fly sprays or baits inside their dwellings. The highest usage was in Queensland 84% and WA 81% and the lowest in Victoria 74%.

WHICH PESTICIDES ARE SAFEST:

The Ontario College of Family Physicians in their 2004 Report, Systematic Review of Pesticide Human Health Effects: www.ocfp.on.ca concluded that “The results of the systematic review do not help indicate which pesticides are particularly harmful. Exposure to all the commonly used pesticides — phenoxyherbicides, organophosphates, carbamates, and pyrethrins — has shown positive associations with adverse health effects. The literature does not support the concept that some pesticides are safer than others; it simply points to different health effects with different latency periods for the different classes.”

SYMPTOMS AND CHRONIC HEALTH PROBLEMS RELATED TO PESTICIDE EXPOSURE:

Acute ‘Ill-defined’ Symptoms

Chronic Health Effects

Typical symptoms that can occur following an acute exposure to pesticides include nausea, low energy,

Chronic health effects include cancer (children & adults), birth defects, genetic damage, neurological,

*These symptoms can be the result of a number of different conditions or diseases, persistent symptoms should be checked out by a GP. Diagnosis requires detailed exposure history, including pesticides.

According to a 2003 report by the Health Care Without Harm organisation "Pesticide poisonings are frequently misdiagnosed or unrecognized, largely because most health care providers receive minimal training in environmental illnesses and few people know when they have been exposed to a pesticide." <http://www.noharm.org/>

WHO IS AT RISK:

There are subsets in the community who are more sensitive to the effects of pesticides than others. These vulnerable groups include pregnant women, children, the elderly, allergy sufferers, those with asthma and other respiratory diseases, the chemically sensitive and the chronically ill.

Risk factors vary widely among individuals, toxicants and diseases. Individual risk factors include:

- * Timing of when exposed (in utero, young, older, early childhood),
- * Age,
- * Gender,
- * Amount of exposure,
- * What other toxicants they are exposed to,

- * Lifestyle factors,
- * Individual susceptibility/ genetic variations,
- * Occupational exposure, etc.

There are also vulnerable groups for whom these risk factors are even more important. This may be due to their occupation, physiology, health status or developmental stage of life. Those most at risk include:

- * Farmers
 - * Pesticide applicators
 - * Professional gardeners
 - * Home owners with lawns &/or gardens that regularly use pesticides
 - * Floriculturists
 - * Greenhouse workers
 - * Women of childbearing age intending to become pregnant
 - * Pregnant women to protect the developing fetus.
 - * Breast feeding women to avoid potential contamination of breast milk with pesticides
 - * Children, from infancy through to adolescence.
 - * Elderly
 - * Individuals with allergy, asthma & other respiratory diseases, Chemically Sensitivity, chronically ill.
 - * Individuals with Genetic variations that lead to increased susceptibility.

For children the risk is much higher due to factors such as their developing physiology, and longer life expectancy over which cancers & other chronic health problems can develop. They have critical windows of development when pesticide exposures are more harmful. Links have been made between low level intrauterine, early childhood and adolescent exposure to environmental agents (including pesticides) and neurotoxic effects, developmental delays and behavioural disorders. During adolescence and early adulthood when hormonal changes are at their peak the risks are also high.

Children are potentially exposed to more pesticides.

- * via the placenta & breast milk;
- * in foods (as children eat proportionately more than adults compared to body weight);
- * via Indoor & outdoor pesticide application of homes & schools that can lead to exposure by playing on floors, treated lawns & play areas,
- * handling treated pets or pets wearing flea collars;
- * by spray drift or farm work that can expose children to agricultural chemicals.

RECOMMENDATIONS:

Think about whether or not you have to use pesticides. Investigate alternative non toxic methods. Avoid using pesticides at home, on pets & in garden, especially where there are children or pregnant women (protect the developing fetus). If pesticides are considered to be necessary wear protective gear such gloves, mask or respirator, and clothing that covers exposed skin and avoid spraying where it will expose others to the risk.

WHAT TO DO IF YOU HAVE BEEN EXPOSED TO PESTICIDES AND SUFFERED ADVERSE EFFECTS:

AERP-Ag reporting scheme: http://www.nra.gov.au/qa/aerp_ag.shtml

RECOMMENDED READING:

- The Survival PEST PACK. A Consumer's Guide to do-it-yourself Pest Inspections. Jerry Tyrell. A Choice Book. 1992. National Library of Australia. ISBN 0 646 109413.
- Organic Control of Household Pests. Jackie French. 1998. Arid Books, Melbourne. ISBN 0 947214 02 X.

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Written by:

Dr Sharyn Martin for ASEHA Qld Inc.

PO Box 96 Margate Qld 4019

E-mail: asehaqld@bigpond.com

Website: www.asehaqld.org.au