

Pesticides are the only man-made toxic chemicals deliberately spread over large areas. They are poisonous almost by definition. Most pesticides are a product of the post World War II boom, based on research into chemical warfare. Organophosphates and carbamate insecticides, large classes within which hundreds of pesticides are registered, were based on Nazi research for nerve gas. At a large dose, they'll kill people. At a tiny dose, they kill "pests".

Pesticides pose particular problems for human health and the environment.

What is a pesticide?

A "pesticide" is anything used to kill pests, while a "pest" is anything humans don't want around.

"Pesticide" is a broad classification which includes insecticides (to kill insects), herbicides (to kill plants), fungicides (to kill fungi), and rodenticides (to kill rodents).

Chemicals used in pesticides are non-specific, and, depending on the dose and accuracy of delivery, will kill unintended along with targeted species. They can be composed of biological substances or synthetic toxic chemicals. This fact sheet deals specifically with toxic, synthetic pesticides.

Who regulates pesticides?

Pesticides must receive registration from the federal government,

under the *Pest Control Products Act*, in order to be used in Canada.

Recently, the federal registration process was moved from Agriculture Canada to Health Canada. The office of the "Pest Management Regulatory Agency", now under the jurisdiction of Health Canada, receives input from Environment Canada, Agriculture Canada and Fisheries and Oceans Canada.

A province cannot decide to use a chemical if the federal government has not registered it. A province does have its own registration process however, and can effectively ban the use of a pesticide in its own jurisdiction even though it has been approved in Ottawa. This happened in the case of 2,4,5 -T, which had been banned in the U.S., Sweden and many other countries, but was registered for use in Canada by the federal government. In the early 1980's the

provinces of Ontario, Saskatchewan and Quebec made independent decisions not to allow its use in those provinces.

Does registration mean the chemical is safe?

We can answer that question with a categorical No. Over and over, those pushing pesticides will defend them by claiming that the federal registration is a guarantee of safety. That's bunk. For one thing, there's no such thing as absolutely "safe". Pesticide regulation is all about balancing the risks of their use with their economic benefit. All too often, chemicals will stay in use because government decides that the economic benefit outweighs the human health risk. For example, years ago, the federal department of Agriculture (now Agriculture Canada) over-ruled the department of Health (now Health Canada)

and Captan is still in use. (Wash those strawberries carefully!)

Once a chemical is registered for use in Canada, it is extremely difficult to get it banned. Governments are slow to take action. Among chemicals once approved in Canada, but now banned after a decade of use are DDT, Alachlor, fenitrothion (to be discontinued for use against budworm in 1998), and 2,4,5-T (although the government allowed registration to lapse without actually banning it).

Unfortunately, governments act as though chemicals have constitutional rights and must be presumed innocent until proven guilty. When the environment and human health are at stake, chemicals should be presumed guilty until proven innocent.

What are the main concerns about pesticides?

Of course, each pesticide is different and can provoke very different concerns. For instance, the widely used fumigant methyl bromide, in addition to being extremely poisonous and responsible for many deaths due to occupational exposure, is responsible for between five and ten percent of worldwide ozone depletion.

Banning methyl bromide is essential if we are to protect the ozone layer which protects all living things from the sun's harmful rays. Canada has committed to phasing out methyl bromide by 2001.

But mostly, pesticide use is associated with two things: toxicity in

the environment and causing human health problems.

Environmental concerns:

Many pesticides have been shown to cause significant damage to wild species. Carbofuran, for example, was recently banned for most uses, as it was responsible for the near extinction of the burrowing owl.

Similarly, fenitrothion, which was the mainstay of the New Brunswick budworm spray programme for decades, will be banned in 1998 (although the government decision leaves open the possibility of using fenitrothion against other insects where there is no economic alternative!). Fenitrothion caused huge mortality in the songbird populations of New Brunswick. Scientists from the Canadian Wildlife Service identified it as "environmentally unacceptable".

In some areas, pesticide contamination, coupled with other toxic pollution, has created a chemical soup with far-reaching implications. Years ago, gulls' eggs in the Great Lakes region were found to contain dioxin, a deadly substance contaminating phenoxy herbicides.

Increased evidence points to widespread and disturbing impacts on Great Lakes wildlife, including enlarged thyroids, cancers, deformed bills, and the feminization of male animals (i.e. the animals are genetically male, with female, or both male and female, reproductive organs). This characteristic of many pesticides is now identified as "endocrine disruption".

Evidence indicates that even the family dog is a victim of pesticides. Dogs from homes with lawns that have been sprayed with pesticides have a higher than average rate of the canine equivalent of lymphoma. Cancer is now the number one cause of death in dogs.

Human health concerns:

Pesticides have been linked to many different types of cancer in humans from breast cancer (DDT) to non-Hodgkins lymphomas and soft-tissue sarcomas (phenoxy herbicides). Chronic low-level exposure to pesticides has been linked to low-grade symptoms such as headaches, dizziness, nausea, and mental confusion.

Linkages have also been identified between home and garden pesticide use and leukemia and brain cancer in children. **A National Cancer Institute study in the U.S. indicates that children are as much as six times more likely to get childhood leukemia when pesticides are used in the home and garden.**

A recent study published in the American Journal of Public Health (February, 1995) found elevated levels of cancer in children where pesticides were used in their homes and yards. They found a particularly high correlation in homes where dichlorovos pest strips were used.

Is there anything other than the active ingredient to worry about?

Definitely! Environmental groups are increasingly concerned about

the so-called “inert” ingredients. These receive less testing and are often not even listed on the product label. Some have been shown to be more toxic than the active ingredient.

What are the major uses?

Agricultural spraying is by far the most common use for pesticides in Canada. Agri-business uses herbicides to kill weeds, insecticides to kill bugs, and fungicides to keep crops fungus-free all the way to the supermarket.

Now pesticide companies are even developing biotechnologically engineered seeds for crops that will be resistant to the chemical company’s product - like canola bred to be resistant to the effects of Monsanto’s herbicide glyphosate (known commercially as “Round Up Ready Canola”).

Forest companies use herbicides to kill deciduous trees and bushes and to clear an area before planting a commercially desired species. They also spray insecticides against forest insects - often with disastrous results. When the budworm outbreak in New Brunswick in 1952 was sprayed with DDT, the outbreak spread over an area four times the size of the initial spray zone. By keeping foliage alive and killing the budworm’s natural predators, the spray programme

kept the budworm outbreak (normally a cycle of five to seven years) in a state of artificial, permanent epidemic for over forty years. Tons of pesticides are sprayed on Canada’s lawns, playgrounds, parks and golf courses for cosmetic reasons. In other words, there is no economic “pest”. People have been conditioned to believe that a lawn marred by dandelions is unacceptable. Municipalities spend money they can ill afford to waste on herbicides. Insecticides are also sprayed by municipalities in urban areas. Winnipeg is the most heavily sprayed city in Canada, due to the yearly effort to control mosquitoes.

Wood preservatives are also classed as pesticides and can be extremely toxic. Women of childbearing age should avoid contact with pentachlorophenol products (the green-coloured wood preservative).

What are the alternatives?

For every “pest” problem, there is a non-chemical alternative. Sometimes the solution may include some pesticides in a programme called “integrated pest management”, where the driving force behind decisions of when, where and what to spray is a thorough knowledge of the population dynamics, available predators and other cultural modifications that reduce pesticide use to a minimum.

Many products are now on the market as non-chemical alternatives. For home lawn use, there are many safe alternatives as well as lawn care companies designed to meet the non-chemical market.

What can you do?

1. First and foremost, reduce your and your family’s exposure to pesticides. Do not buy them! Buy organically grown food, both to protect your own health and to increase the market for non-chemically produced food. (Most pesticides in food are ingested through meat products, so beware of more than the fruits and veggies). Wash, and/or peel all your fruits and vegetables carefully if they aren’t certified as being organically grown.
2. Put pressure on your municipality to stop using chemical pesticides in municipal open-space, especially near schools.
3. Organize your neighbours and declare your block a “Pesticide Free Zone”.
4. Write newspapers and politicians to tell them you want tighter controls over pesticides and an overall reduction in pesticide use in Canada.



Some Reading Suggestions

Silent Spring, by Rachel Carson. Published by Fawcett World Library, 1962.. (a classic, still relevant today)

Pesticides and You, the journal of the National Coalition Against the Misuse of Pesticides, 701 East Street SE, Washington, D.C., 20003, USA.

How To Get Your Lawn and Garden Off Drugs, by Carole Rubin., Friends of the Earth, 1989. Published by Cavendish Books Inc. Unit 5 801-1st Street North, Vancouver, BC, V7P 1A4

Funding for production of
this document provided by
The Body Shop Foundation

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