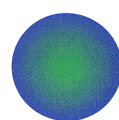


A Quick Reference Guide

For Pesticide Use in Municipalities



TAB 1

What is a Pest Control Product?

Pest control products, also called pesticides, are chemicals, organisms and devices designed to control, destroy, attract or repel pests. All pesticides must be registered by Health Canada.

Specifically:

- Herbicides control weeds;
- Insecticides control insects;
- Fungicides control mould, mildew and other fungi diseases;
- Algaecides control algae in swimming pools; and
- Preservatives control the decay of wood as well as other consumer and industrial products.

Pesticides play an important role in controlling or eliminating pests that threaten public health and the environment.

Are home and garden pesticides similar to agricultural food production?

Yes. Generally home and garden pesticides are similar to those used in agriculture, but are typically diluted and tailored to home and garden use. Many are packaged in ready-to-use formulations. Only products that present low risks to the user may be considered for home and garden use. All of these products must meet Health Canada safety requirements and be registered by them before they can be sold.

Quick Facts...

On a weight-for-weight basis, caffeine is between 25 to 50 times more toxic than some of the most commonly used lawn herbicides.

Many of the pesticides used today biodegrade rapidly, in some cases as quickly as several days.

TAB 2

Urban Pesticides are regulated by Health Canada

Only products that pose no unacceptable risks to health and the environment are registered by Health Canada's Pest Management Regulatory Agency.

All pest control products used in or imported to Canada are regulated nationally under Health Canada's Pest Control Products Act (PCPA) and Regulations. The PCPA covers pesticides used in public health, urban landscapes and household applications.

The Pest Management Regulatory Agency (PMRA) under Health Canada is responsible for administering this legislation, evaluating and accepting or rejecting pest control products.

New Legislation - More Safeguards

The Federal Pest Control Products Act (PCPA):

Many of the health and environment issues confronting Canadian municipalities are addressed in Health Canada's new Pest Control Products Act including:

- Providing for even greater protection for infants and children;
- Taking into account the cumulative risk and aggregate exposure of pesticides. Cumulative risk refers to the combined risk of different PCPs that may present a common response. Aggregate exposure refers to the combined exposure from all sources including occupational, food, water and residential; and
- Supporting pesticide risk reduction and encouraging the registration of lower-risk products.

The Act also requires that pesticides, registered before 1995, be re-evaluated against the new regulatory science.

The new Pest Control Products Act received Royal Assent on December 12, 2002.

"The proposed new PCPA will enhance public confidence, here and abroad, that Canadian agri-food, forestry and other products are safe. The changes introduced today take into consideration the views of all parties, while recognizing that the protection of human health and the environment continue to be the top priority in regulating pesticides in Canada."

The Honourable Anne McLellan, Minister of Health - March 21, 2002

For more information on Health Canada's Pest Management Regulatory Agency and the new Act visit:

<http://www.hc-sc.gc.ca/pmra-arla/English/legis/pcpa-e.html>

Pesticide registration in Canada is a thorough and rigorous process

Before being registered for use in Canada, all pesticides must undergo extensive testing following scientific protocols very similar to those that define the toxicology of a new medicine or food additive. It is the responsibility of manufacturers to conduct the required tests and studies according to the detailed international specifications required by **Health Canada's Pest Management Regulatory Agency (PMRA)**. The PMRA carefully evaluates these studies based on rigorous scientific assessments.

Public health and the environment are foremost considerations when evaluating a new pesticide or examining a pesticide under re-evaluation or special review.

Health Canada's PMRA's assessment includes:

- Any possible effects to humans including adults, teenagers, children, infants and embryos;
- Any possible effects on wildlife species such as birds, fish, insects or earthworms; and
- The rate and type of degradation in soil, water and air.

In addition to laboratory studies, field studies are scrutinized to determine how the pesticide behaves in the Canadian environment and the human exposure potential under Canadian use conditions. These studies include:

- How fast it breaks down in the soil;
- Whether or not it leaches through the soil to water sources;
- Exposure of bystanders and spray applicators during mixing and use;
- Research to identify whether the pesticide actually controls the intended target pest and how the product works; and
- How the product is best used in terms of application rates water volumes, spray pressures, time of day, growth stage of the crop and growth stage of the target weed, insect or disease.

And it doesn't stop there

what follows is a

Quick Facts ...

The entire development process for any given active ingredient consists of up to 120 different tests and studies.

It can take up to 10 years to complete and can cost in excess of \$100 million to develop and register a single active ingredient.

On average, only one in 100,000 active ingredients makes from discovery in a laboratory through to full registration.

Continuous Process - Involving Regular Evaluation

After a pesticide is registered, additional studies continue to ensure environmental and human safety. Pesticide registrations must be renewed at least every five years and may be cancelled at any time if adverse effects become known. Regulations and policies governing pesticide registrations are continuously updated, based on new scientific information or research processes.

TAB 3

Federal - Provincial – Territorial Healthy Lawns Strategy

A second government initiative is the Federal – Provincial - Territorial Healthy Lawns Strategy. Working together, experts from Health Canada and Environment and Agriculture departments as well as interested stakeholders from across the country, have laid out a way to have healthy lawns and gardens - that is to say, preventing the pest problem in the first place if possible and then if treatment is required – using the Integrated Pest Management approach encompassing the **right tool**, at the **right time**, in the **right way**.

Pest control products are but one of the tools that may be selected for use. This is a widely accepted practice globally and is in place in many municipalities across Canada.

This strategy is based on Integrated Pest Management (IPM) that emphasizes prevention as well as the safe and proper use of products.

**A copy of this Strategy by Provincial/Territorial Committee on Pest Management and Pesticides is included in this manual.
(Refer to the Appendix)**

TAB 4

Precautionary principle and pesticides

How do we know that a pesticide approved for use today won't be found to have negative health/environmental consequences in the future?

Health Canada's Pest Management Regulatory Agency (PMRA) systematically re-evaluates pesticides to ensure that they meet current-day standards. Health and environment studies are repeated as new scientific techniques are developed. Regulatory action is taken on any product that is found to result in an unacceptable risk of harm. In addition, whenever scientific approaches emerge that can enhance the PMRA's evaluation process, the Agency integrates this new knowledge into pesticide risk assessments.

The new PCPA takes into account the "Precautionary Principle" for currently registered products and contains an even higher standard for new products.

Health Canada's PMRA conducts its evaluations using the most stringent standards and most recent scientific approaches to ensure pesticides registered for use pose no unacceptable risk to human health or the environment.

With respect to current products:

"The Minister may cancel or amend the registration of a pest control product if in the course of a re-evaluation or special review, the Minister has reasonable grounds to believe that the cancellation or amendment is necessary to deal with a situation that endangers human health or safety or the environment, taking into account the precautionary principle set out in subsection (2).

(2) Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent adverse health impact or environmental degradation.”

TAB 5

The Benefits of Using Pesticides - To Safeguard Public Health

Human disease control

- Using pesticides to control threats posed to public health and native species by pests and invasive species has greatly improved our quality of life.
- **Pesticides help ward off disease.** In Canada, pests such as mosquitoes and rats no longer pose the disease threats of the past such as malaria, yellow fever & typhus.
- The North American emergence of the West Nile Virus and new cases of malaria, both transmitted via mosquitoes reminds us that where possible, pesticides can provide significant benefits in controlling pests that threaten human health or the environment.

Pesticides help protect us from allergens

- About 15 to 20 percent of the population has hay fever – or allergic reactions to plant pollen, dust and other airborne particles – and ragweed is the major cause of the problem. Pollen grains are minute and are thus easily airborne and dispersed over long distances.

- Hay fever is most common among 24-to-44-year olds, and the economic impact of their diminished productivity is substantial. For many individuals, high pollen counts trigger asthma attacks, and may promote the development of the condition.

Reducing soil erosion and enhancing air quality

- Healthy lawns have the ability to trap and hold rainfall better than most surfaces. The water you see running down a street into the storm sewers generally is from driveways, sidewalks, and other hard surfaces. **A healthy lawn reduces the amount of urban road wash and silt** that would otherwise end up in our streams and lakes.
- **A well-kept, vigorously growing lawn absorbs hazardous air pollutants** such as carbon dioxide and sulphur dioxide in the urban environment.
- **Grass and trees are great air cleaners.** If you have ever walked or driven through an area with no trees or grass, such as a construction site, on a windy day, you have some idea of what it would be like without a healthy green landscape. Clouds of wind-blown dust make for uncomfortable breathing, irritated eyes, and reduced visibility. Grass slows the air, allowing dust particles to settle on the leaves and eventually be washed back onto the ground.

Reduced energy use and greenhouse gas emissions

- **Lawns cool hot summers**

Healthy, well-maintained lawns will reduce surface temperatures by 18 to 24 degrees Celsius in comparison to bare soil, and 10 to 15 degrees Celsius in comparison to natural vegetation or poorly managed grass.

- **Shrubs and ornamentals insulate**

They moderate cold temperatures, reduce heat loss and build an insulating buffer of air around buildings. Ornament plants also absorb heat and provide shade, reducing solar radiation and reflection and unnecessary energy consumption.

Additional benefits of using pesticides

Pesticides help to limit the environmental and economic damage that can be caused by insects, weeds and plant diseases. Whether it is an insecticide for controlling termites or fleas in your home, an herbicide for ridding your lawn of undesirable weeds or a fungicide that keeps plants alive during a disease outbreak, pesticides are analogous to the medicines we use to preserve our own health.

By using pesticides appropriately, municipalities and homeowners provide the following benefits:

- Control threats to human health;
- Protect our eco-systems from invasive species; and
- Enhance the quality of our environment.

Healthy turf offers many benefits:

- Increasing property values;
- Reducing allergens and the likelihood of insect bites and stings;
- Controlling dust and pollen from weeds and grasses; and
- Absorbing pollutants from the air and reducing noise in busy urban centers.

Quality of life

- Grass also makes your life a bit quieter. It effectively absorbs and deflects sound. When combined with trees and other landscaping, **grass can reduce noise levels by 20 to 30 percent.**

TAB 6

What about banning pesticides for so-called “cosmetic” or “non-essential” uses?

Pest control products are important tools

The reduction or elimination in the availability of pesticides would significantly alter our approach to pest management and our way of life. Bans impede our ability to maintain a safe living environment.

Despite good intentions of Councillors, **bans are not the answer and do not work**. This is a flawed approach because even with the Supreme Court ruling on this issue, municipalities have no authority to ban the sale of these products. Municipalities dealing with this issue have resulted in a patchwork of decisions, with municipalities across Canada having different approaches. The time and effort expended on this issue is duplicative because Health Canada is responsible for regulation regarding these products. Taxpayers should not have to pay for this redundancy.

Aside from adding value to property, many of the same products used on lawns, golf courses and in agricultural crops are also used to control termites, rodents in restaurants, fleas and ticks on pets, algae in swimming pools and fungi, like mildew, in our household paints. **Pesticides contribute to the health and safety of all Canadians.** In fact, because of their exposure to the environment, pesticides are more rigorously tested for environmental impact than the pharmaceutical drugs used to protect people’s health.

The term "cosmetic use" often implies that pesticides associated with lawn and garden care serve only an aesthetic purpose. However, as detailed previously, **there are bona fide benefits to community health and the environment from the use of pest control products**. Health Canada’s PMRA requires pesticide manufacturers to demonstrate value before they can be registered. As well, Health Canada has established use site categories to cover all possible use areas and none use the terms “cosmetic” or

“non-essential” because indeed all uses are required to show value or they will not be registered.

What are alternatives?

If all pesticides must be registered by Health Canada before they can be used in Canada, then what is meant by an alternative?

Some suggest that municipalities, homeowners and lawn care workers use alternatives that are not registered for legal use in Canada. **These so-called alternative products and methods are not only illegal but they have not been tested for environmental and health impacts.**

Cities that draft pesticide regulation bylaws, in many cases, do so because they are pressured to take some action and unfortunately this can lead to completely eliminating the use of legally permissible and regulated pesticides.

Efficient ways of approaching pest management are of primary concern to the manufacturers, as well as the users, of pesticides. The Integrated Pest Management principles, discussed previously, are proven and take into consideration, environmental impact, site characteristics, and public health and safety.

Municipalities generally have underestimated the requirement for adjustment in budgets, and open spaces/park management practices if pesticides are eliminated from their toolkits. Plant Health Care (PHC) and Integrated Pesticide Management (IPM) have been around for years, but few municipalities have the budgets to support such programs to the extent required to eliminate or set up trace amount use of pesticides.

TAB 7

Integrated Pest Management is The Right Approach

Right Tool, Right Time, Right Way

More specifically, Integrated Pest Management (IPM as it is often called) is a system for managing pests in lawns and gardens using tools such as watering, seeding, mowing, aerating and hand weeding in combination with the responsible use of lawn and garden care products.

IPM is a continuous system of controlling pests (weeds, diseases, insects or others) in which pests are identified, action thresholds are considered, and all possible control options are evaluated and considered.

A Logical Process

Control options--which include biological, chemical, cultural, manual and mechanical methods--are used to prevent or remedy unacceptable pest activity or damage. The choice of which control to use is based on effectiveness, environmental impact, site characteristics, worker/public health and safety, and economics.

We're all responsible for our city and natural landscapes. Following an Integrated Pest Management strategy and using lawn and garden care products responsibly is one contribution you can make to your neighbourhood and our environment.

Emphasis on prevention

Prevention is a key part of Integrated Pest Management. Rather than having to take stronger action later to handle a pest problem, the IPM tools work to prevent weed, insect and fungi problems from developing or worsening. That's primarily accomplished by

focusing on plant health – cultivating a vigorously growing lawn of grass and a garden of hearty flowers, vegetables and ornamental plants.

Calgary’s IPM success story

Using a combination of biological and cultural control, along with the use of lawn and garden products. The City of Calgary adopted an IPM plan in 1998 to manage its 7,000 hectares of green space. Since then, some of Calgary’s successes have included:

- Releasing beetles as biological control agents to control noxious weeds in certain areas;
- Using lawn and garden care products to build plant health and address pest problems;
- Healthier grass in parks and on recreational turf;
- Reduced reliance on chemical controls; and
- The preservation of beneficial insects.

What about reducing the use of pesticides?

An arbitrary reduction rate imposed by municipalities is an artificial barrier that impedes Integrated Pest Management principles. Whether it is a 10% or 70% reduction - it fundamentally opposes the concept of IPM – which is the right tool, at the right time, in the right way. There are many consumer and retailer education and information sources that explain the importance of IPM in greater detail .

TAB 8

Pesticides and Health Concerns

Are pesticides linked to childhood asthma?

On-going debate exists in the popular media and elsewhere about the link between childhood asthma and exposure to pesticides. Current research compiled from Health Canada and other accredited medical sources shows:

1. Health Canada states “the exact cause of asthma is not known, but it appears to be the result of a complex interaction”¹ of factors:

- Predisposing factors (a greater tendency to allergic reactions to foreign substances);
- Causal factors which may sensitize the airways (such as cat and other animal dander, dust mites, cockroaches, workplace contaminants); and
- Contributing factors, which may include cigarette smoke during pregnancy and childhood, respiratory infections, and indoor and outdoor air quality.

There is a lack of research on the effectiveness of interventions to prevent the onset of asthma, according to Health Canada. Based on the epidemiological evidence, the following could contribute to a reduction in the incidence of asthma²:

- Reducing exposure in the workplace to airborne contaminants;
- Reducing exposure to passive smoke, both in the uterus and among young children;
- Encouraging breastfeeding and delayed introduction of solid foods;
- Decreasing exposure of young children to house dust mites, cockroaches and moulds through regular cleaning; and adequate ventilation; and

- Decreasing exposure of children who have a genetic predisposition to asthma, to known sensitizers.

2. Prevention against childhood asthma largely concerns breastfeeding and avoiding exposure to mites and cockroaches, animal dander and cigarette smoke².

- Results of a study of 5,000 children showed that breastfeeding might protect against asthma; breastfed children have a lower incidence of asthma and breathing difficulties.

1. Health Canada. The Prevention and Management of Asthma in Canada: A Major Challenge Now and in the Future. A Report from The National Asthma Control Task Force. (www.hc-sc.gc.ca/hpb/lcdc/publicat/asthma00/index.html)
2. Health Canada. The Prevention and Management of Asthma in Canada: A Major Challenge Now and in the Future. A Report from The National Asthma Control Task Force. (www.hc-sc.gc.ca/hpb/lcdc/publicat/asthma00/index.html)

Erroneous claims relating pesticides to childhood cancer

On-going debate exists in the popular media and elsewhere about the link between childhood cancers and exposure to pesticides. Critics erroneously attribute rising cancer rates in children to pesticides and argue that they should be banned.

Can exposure to pesticides cause cancer?

Only pesticides that do not pose an unacceptable risk of cancer in humans are registered for use in Canada. Detailed risk assessment and very large margins of safety are built into the human health evaluations that Health Canada's Pest Management Regulatory Agency (PMRA) carries out on proposed pesticides so that Canadians will be protected from risks such as cancer.

The first step in a human health evaluation is an examination of scientific studies to determine if the pesticide causes adverse effects in laboratory animals. One of the effects that are looked for is whether the pesticide causes cancer in animals. The majority of pesticides registered for use in Canada do not cause cancer in laboratory animals. If there is evidence that a proposed pesticide causes cancer in laboratory animals, a special type of assessment called a quantitative risk assessment is conducted to determine if the use of the pesticide would cause an unacceptable risk of cancer in human. PMRA's risk assessments consider how the cancer is caused in laboratory animals and all potential exposures, e.g. food, water, workplace, that may occur over a lifetime. Only pesticides that are proven not to pose unacceptable risk of cancer in humans are registered.

Direct quotation from - Health Canada, PMRA web site:
<http://www.hc-sc.gc.ca/pmra-rla/english/consum/pmrafaq-e.html>

Current research compiled from Health Canada, and other accredited medical sources, focus on physical activity and a healthy diet as beneficial in cancer prevention.

Health Canada promotes “Healthy behaviours among young people” – including physical activity and a healthful diet – as a worthwhile method of cancer prevention. “Avoidance of smoking, excess exposure to sunlight and early sexual activity” are also recommended.

Health experts – from the Dieticians of Canada to the Canadian Cancer Society – consistently advocate a diet rich in fruits, vegetables and grains as one of the best ways to prevent cancer and heart disease.

Quick Fact ...

The Hudson Institute declared that pesticides have been primarily responsible for reducing cancer rates because their use has introduced more fruits and vegetables into the North American diet. This view has been reiterated in a November 15, 1997, issue of Cancer magazine.

Canada has one of the most rigorous regulatory systems in the world to protect all Canadians, including children.

Health Canada’s Pest Management Regulatory Agency (PMRA), responsible for the pre-market evaluation, re-evaluation and special review of all pesticides, includes consideration of all population groups including adults, teenagers, children, infants and embryos; as well as extensive environmental considerations.

Safety factors or margins are currently built into the evaluation of pesticides as a conservative approach to assess the risk of products.

For cancer risk assessment, the PMRA uses a complex process that utilizes animal toxicology testing data and daily lifetime exposure estimates. This type of assessment is also used by the International Agency for Research on Cancer (IARC), the United States EPA and other government and academic organizations. It takes into account pesticide exposure from all sources, including food and water, and considering cumulative effects of pesticides that act in the same way.

What risks do humans and pets face after the lawn application of pesticides?

Canada's stringent regulatory system requires pest control products to undergo a rigorous testing and clearance process. These examinations include safety to the applicator and consumer, and the impact on the environment.

Before a product can be sold...

Current toxicological testing requirements assess potential impacts of pesticide use, including possible effects in children, the developing fetus, pregnancy and cancer.

Are golfers at risk from exposure to pesticides when playing on a golf course?

No.

There is no scientific evidence that golfers face any health risks from the pest control products properly used to maintain golf courses. Once a liquid product is applied and the turf grass is dry or a granule product has been watered in, there is a very low risk of exposure to golfers or others who enter the area.

TAB 9

What are inert ingredients in pesticide formulations?

The pest control product that you buy at a store or have applied by a professional is a formulated product. This means it includes both the active ingredient used to control pest and formulating ingredients such as emulsifiers and solvents, sometimes called “inerts,” that are not involved directly in controlling the pest but provides other benefits.

Inert ingredients, also called formulants, are materials intentionally added to the formulation to modify or improve physical characteristics such as, sprayability, solubility, spreadability, stability or solvency.

The vast majority of inert ingredients, or formulants, are common industrial chemicals used every day in the home.

They are found in products such as cleansers, furniture strippers, kitchen and bathroom disinfectants, shampoos and soaps.

When a registration application for a pesticide is received, scientists at Health Canada examine the toxicity potential of all ingredients in the product, as well as specific toxicity data generated for the active ingredient. In addition, manufacturers must submit acute toxicity tests on all formulations. Health Canada officials review these data, as well as the identity of the formulants. Any indication from these studies that the formulants are enhancing, or in some way altering the toxicity of the pesticide active ingredient, may require further studies before regulatory officials will register the formulated product.

Quick Fact ...

Health Canada’s Pest Management Regulatory Agency (PMRA) does not permit the use of inert ingredients known to have toxicological concern in any Canadian pesticide product. Registration must be obtained from Health Canada before the formulation is allowed to be sold.

What do the experts say about 2,4-D?

2,4-D is the most common pesticide used by homeowners and is considered safe by experts based on hundreds of studies including long-term exposure studies in agricultural or industrial settings. The weight of scientific evidence on the safety of 2,4-D has been considered by numerous experts including a panel convened by the U.S. Environmental Protection Agency (1994) and expert panels from the Canadian Centre for Toxicology (1987, 1992), who concluded that the overall evidence does not indicate that 2,4-D poses health risks to humans when used as directed. The European Commission stated that “there is no clear association between cancer development and exposure to phenoxy herbicides (including 2,4-D and 2-EHE) could be established from the available epidemiological studies”. How can one rationalize that 2,4-D is “less safe” if used to control weeds on lawns than to control some of the same weeds on a farm field for food production?



representing the plant science industry
représentant de l'industrie de la phytologie

You've got questions...We've got answers.

We're the Urban Pest Management of Canada

**Advocating the stewardship and responsible
use of lawn and garden care products.**

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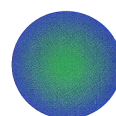
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