

FARM PRACTICE

PESTICIDES

Description

A pest is defined under the *Integrated Pest Management Act* as “an injurious, noxious or troublesome living organism but does not include a virus, bacteria, fungus or internal parasite that exists on or in humans or animals.” Pests therefore include insects, disease organisms, weeds, rodents, birds, and wildlife.

A pesticide is defined under the *Integrated Pest Management Act* as a “micro-organism or material that is represented, sold, used or intended to be used to prevent, destroy, repel or mitigate a pest and includes (a) a plant growth regulator, plant defoliator or plant desiccant; and (b) a control product as defined in the federal *Pest Control Products Act* and (c) a substance that is classified as a pesticide by regulation but does not include micro-organisms, materials, substances or control products excluded from this definition by regulation.” Pesticides therefore include insecticides, fungicides, herbicides and rodenticides.

Integrated Pest Management, as defined under the *Integrated Pest Management Act*, means a process for managing pest populations that includes the following elements:

- planning and managing ecosystems to prevent organisms from becoming pests
- identifying pest problems and potential pest problems
- monitoring populations of pests and beneficial organisms, damage caused by pests and environmental conditions
- using injury thresholds in making treatment decisions
- evaluating the effectiveness of pest management treatments
- suppressing pest populations to acceptable levels using strategies based on considerations of:
 - (i) biological, physical, cultural, mechanical, behavioural and chemical controls in appropriate combinations, and
 - (ii) environmental and human health protection

Pests are capable of causing damage to crops and livestock. Insects, fungi, bacteria, viruses, weeds, wildlife, rodents and mollusks such as slugs and snails are all different types of pests. Most commodities can be negatively impacted by pests. When pest populations rise to an unacceptable level, they need to be controlled in order for farmers to effectively and efficiently produce agricultural products sustainably which are safe, of good quality and competitively priced.

Farmers use a variety of methods to manage pests. Pesticides are but one method and should be used in conjunction with other techniques in an integrated management approach. Insecticides, fungicides, bactericides, herbicides and rodenticides are all different types of pesticides.

Pesticide use is regulated by both the federal and provincial governments because pesticides have the potential to impact the environment, people and other organisms. Health Canada's Pest Management Regulatory Agency determines whether a pesticide can be used throughout the country and specifies where and how each pesticide can be used. All pesticides must be used according to safety guidelines specified on each pesticide label. Environmental protection measures, areas of use for specific crops and pests, application rates, numbers of applications allowed, drift prevention measures, re-entry times, personal protective equipment, disposal instructions, and days before harvest are examples of conditions and specifications noted on pesticide labels. Pesticide safety practices will vary, depending on the potential hazard associated with specific pesticides and the application method used. Label information for all pesticides which may be used in Canada can be found on Health Canada's website. Information on all new minor uses or emergency uses of certain pesticides is available at the BC Ministry of Agriculture website.

The British Columbia Ministry of Environment specifies additional requirements for the transport, sale, application, storage, and disposal of pesticides in the province. Farmers purchasing or using "restricted" pesticides must have a valid Pesticide Applicator Certificate. Commercial and restricted pesticides must be kept in locked storages vented to the outside. A warning sign must be posted on the door of any such storage.

WorkSafeBC also specifies requirements for the use of pesticides in agriculture. Their regulations outline details associated with pesticide applicator certification, emergency medical care, washing facilities, personal protective clothing and equipment, application equipment, pesticide application, storage warning signs, re-entry into treated areas, record-keeping, drift prevention, and aerial application.

Some local governments have enacted bylaws that may require a specific pest to be controlled or prohibited. These bylaws may also impose restrictions and provide guidelines with respect to the application of certain pesticides for maintaining ornamental plants and turf on land used for residential purposes or land vested in the municipality. Local government bylaws should not apply to the application of pesticides that impact agriculture, whether for residential areas of farms or for land directly used for agricultural production.

Farmers must strive to prevent pesticide movement onto non-target areas and must strive to ensure pesticides are contained within the boundaries of the properties they are farming. Various types of equipment and management techniques can be used to minimize such movement onto sensitive areas. Application equipment should be calibrated to ensure that it is appropriately set up for the target area and that it applies the correct amount of pesticide uniformly. Establishing buffer zones on both the farming and non-farming side of the agriculture/urban boundary is an effective management tool to minimize impacts on adjacent properties and aquatic habitat. Pesticide label buffer zones apply only to either aquatic or terrestrial habitat. A farmer is allowed to modify a pesticide label buffer zone by using the buffer zone calculator on the Health Canada website.

Communication between farmers and neighbours helps prevent and resolve conflicts surrounding pesticides. Neighbours should be aware that farmers are not always applying pesticides when using their sprayers. Application equipment can be used for the purposes of applying nutrients only. In addition, fans from airblast sprayers can assist in drying a crop to prevent disease. Pesticides also vary greatly in risk to the environment. Farmers frequently apply low-risk products (referred to as non-conventional pesticides by the federal Pesticide Management Regulatory Agency) such as soaps, microbial compounds or other biopesticides such as oils. Communication to neighbours is a helpful technique in allaying concerns associated with pesticide application activities. Such communication can be verbal or visual. Some farmers have established a simple flag system that allows neighbours to see when they are applying pesticides about which they may be concerned.

Nuisance Concerns

The *Farm Practices Protection (Right to Farm) Act* primarily addresses odour, noise and dust disturbances. Pesticide application can result in odours, noise or dust. In some situations, neighbours may consider aerosols or spray droplets as a form of dust in a non-conventional sense.

Odour

Odour is the human perception of and response to chemicals in the air. The degree to which individuals perceive an odour to be a nuisance will depend on the frequency, intensity, duration and offensiveness of the odour. Other factors that come into play include a person's sensitivities and personal previous experiences.

Farmers engage in a variety of activities that produce odours. Pesticides often give off some odour, in many cases caused by volatilization of the pesticide carrier both during spraying operations and after it has been applied to the crop.

See also Nuisance Reference: [Odour](#)

Noise

Noise is defined as any sound that is audible but judged to be an unwanted, irregular or erratic disturbance. Noise levels vary and may rise when equipment is run at higher speeds. Noise may be generated continuously or intermittently.

Farmers engage in a variety of pesticide application operations that require the use of spraying equipment. Most equipment generates some noise. Airblast sprayers in particular can be very loud; in some situations the noise generated can be reduced by gearing up and throttling down without compromising pesticide application efficacy.

See also Nuisance Reference: [Noise](#)

Dust

Dust is defined as fine-grained suspended particulate in air. The degree to which individuals perceive dust to be a nuisance will depend on the frequency, intensity and duration of a dust-generating event.

Farmers engage in a variety of pesticide application activities that require the use of equipment which will generate dust. The aerosols created by spraying may be perceived by some as a form of dust. Dust may also be generated as fugitive dust when fine particulates are lifted from fields, roads, buildings and yards via air turbulence.

See also Nuisance Reference: [Dust](#)

Activities and Operations

Aerial Application

Pesticides may only be applied by aerial application if the pesticide label instructions state that it may be used in such circumstances. A pesticide may only be applied by air for the specific aerial uses indicated on the label. Details are outlined in the *Federal Regulatory Directive 96-04*.

Chemigation

Fertilizers, pesticides and other chemicals may be applied to agricultural crops through sprinkler and trickle irrigation systems, provided that the product label states that the given chemical is approved for chemigation and provided that proper backflow preventers have been installed. In certain situations, some chemicals may be applied by flood irrigation through furrows. The standards listed in the publication entitled *Chemigation Guidelines for British Columbia* provide guidance to backflow prevention. Local irrigation district approval may also be necessary.

See also Farm Practice: [Irrigation](#)

Pesticide Application to Ditches

Pesticides can be applied to and along ditches, provided they are registered for that use and all legal requirements are met.

Timing of Application

Pesticides may be applied during any season provided that the label allows for such application. Pesticide application may be conducted during the day or night. Applications may be done early in the morning or late in the evening when conditions are typically less windy to help minimize drift and to protect beneficial organisms. Many pesticide labels state that product should not be sprayed in dead calm conditions caused by air inversions.

See also Farm Practice: [Mobile Equipment](#)

Related Farm Practices

Other farm practices that pertain to pesticides include, but are not limited to, the following:

Cultivation

Pesticide applications may be combined with cultivation operations.

See also Farm Practice: [Cultivation](#)

Storage of Hazardous Material

Pesticides are commonly stored on the farm where they are to be used. Pesticide storage must comply with provincial storage requirements.

See also Farm Practice: [Storage of Hazardous Material](#)

Transportation

Pesticide transportation is subject to special legislation.

See also Farm Practice: [Transportation](#)

Wildlife Control

Occasionally, wildlife control can be accomplished by repelling, deterring or destroying unwanted species with appropriate and careful use of pesticides.

See also Farm Practices: [Wildlife Damage Control – South Coastal BC](#)
[Wildlife Damage Control – Interior BC](#)

Legislation

Information on federal and provincial legislation can be found in Appendices B and C. Acts, regulations and bylaws that regulate or may affect pesticide application practices include, but are not limited to, the following.

Federal Legislation

The *Fisheries Act* protects fish and fish habitat and prohibits the discharge of deleterious substances such as pesticides into waters frequented by fish.

The *Migratory Birds Convention Act* forbids the release of substances which may harm migratory birds, despite the fact that they are damaging or may damage crops.

The *Pest Control Products Act and Regulation* ensures the safety, merit, and value of pest control products used in Canada.

The *Transportation of Dangerous Goods Act* regulates the transport of all dangerous goods, including pesticides.

Provincial Legislation

The *Drinking Water Protection Act* and regulations specified that a person:

- (a) must not introduce anything or cause or allow anything to be introduced into a domestic water system, a drinking water source, a well recharge zone, or an area adjacent to a drinking water source, and
- (b) must not do or cause any other thing to be done or occur if this will result or is likely to result in a drinking water health hazard in relation to a domestic water system.

The *Environmental Management Act* protects the soil, water and air environment from pollution. Included under this Act are the following applicable regulations:

- The *Hazardous Waste Regulation* which specifies the types of pesticides and empty pesticide containers which are considered as hazardous waste. Pesticide containers are considered hazardous waste unless rinsed and disposed of according to the regulation.
- The *Spill Reporting Regulation* which requires that spills in excess of five kilograms by weight or five litres by volume be reported to the Ministry of Environment's Environmental Emergency Program at 1.800.663.3456. The hotline number is accessible at any time of the day or night.

The *Integrated Pest Management Act* regulates all aspects of pesticide sale, transport, storage and use.

The *Transport of Dangerous Goods Act* regulates the transport of all dangerous goods.

The *Weed Control Act* states that occupiers of land are responsible for the control of noxious weeds.

The *Workers Compensation Act* regulates worker safety, including exposure to noise. Part 28 of the *Occupational Health and Safety Regulation* under this Act establishes minimum health and safety requirements for agriculture.

Publications and Websites

- A. Publications that provide more information on pesticide use include, but are not limited to the following. Refer to Appendix D for details.

Applicator Course for Agricultural Producers

British Columbia Environmental Farm Plan Reference Guide

Canadian Pesticide Education Program Applicator Core Manual (British Columbia Edition)

Chemigation Guidelines for British Columbia

Pesticide Safety for Agricultural Workers (Farm and Ranch Safety and Health Association – FARSHA)

The Regulation of Pesticides in Canada

Standard for Pesticide Education, Training, and Certification in Canada

Standard Practices for Pesticide Applicators (2009) – A Manual of Health Information and Safe Practices for Workers Who Apply Chemicals

- B. Websites contain additional relevant information on pesticides and their application:

Production guides for various commodities

Regulation of pesticides in Canada

Standards for pesticide education, training, and certification in Canada:

Standard practices for pesticide applicators from WorksafeBC.