

Integrated Pest Management Program - IPM Manual for Home & Garden Pests in B.C. - Chapter 6

Integrated Pest Management

IPM Manual for Home and Garden Pests in British Columbia

Chapter 6: Pesticide Use Reminders

Learning Objectives

When you have completed this chapter, you should be able to:

1. Correct common misconceptions customers have about pesticides.
2. List tips and safety recommendations for mixing and applying pesticides, both indoors and outdoors.

Introduction

This chapter provides answers to some frequently asked questions and common misconceptions that customers have about pesticides. Although some of these points have been covered in the previous chapters, they are repeated here to provide a quick reference for dispensers.

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Common Misconceptions

"Pesticides are the best way to control pests."

This is false. For many home and garden pests, other types of controls work as well or better than pesticides, and are often cheaper. They also do not have the associated risks of toxicity, residual effects, and harm to non-target organisms. Other methods do not require the user to invest in protective clothing, provide a safe storage area, or dispose of waste products.

"Pesticides only kill pests."

Many people do not realize that pesticides work wherever they are applied and will kill more than "pests." For example, customers applying a herbicide they think of as a

"weed killer" in their rose garden may not realize that the roses could be killed as well. The same goes for slug baits and rodent baits, which could also kill pets. Insecticides will also kill beneficial insects. It should be made clear to customers that they can kill more than they intend to when they apply pesticides without caution and care.

"If some pesticide is good, then more is better."

This is false because using more of a product than indicated on the label may cause leaf damage as well as be harmful to the user, bystanders, pets, and beneficial organisms.

"Old products should be used at a higher rate."

People may think this would make up for deterioration of an old pesticide, but it is false. This is because most products have a shelf life of many years if kept at moderate temperatures. Also, if it has degraded, the product may not have any pesticidal activity. There is usually no way someone can tell by looking at a product whether or not it has degraded. Label rates must be followed. If a product is old, then it might be better to dispose of it and purchase a new container.

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General Problems

Confusion About Pesticide Products: Customers often do not know the characteristics of pesticides they are purchasing. For example, they may not know:

- the difference between ready-to-use and concentrated products
- whether a pesticide has a systemic or contact mode of action and what these mean
- whether a herbicide is selective or non-selective and how that affects their pattern of use

As a dispenser, you should be familiar with the various types of pesticides mentioned above, be able to describe products to customers in terms of their actions, and recommend products suited to the customer's situation.

Plant Problems Mistaken for Pest Damage: The majority of plants seen in garden diagnostic clinics are suffering from physical problems, not from pest attack. Nutrient deficiencies, frost injury, sun scald, over-watering, drought, soil pH that is too high or too low, and other problems can cause damaged, distorted, or yellowing leaves and can even kill plants. Plant damage can occur because:

- proper growing conditions are not provided, such as appropriate fertilizer, water or light
- the species or varieties chosen were not adapted to the site or local climate
- there may have been extreme weather conditions, such as frost or high temperatures

In addition to having good looking plants, another benefit of providing the best growing conditions is that healthy plants resist pest problems and are quickly able to outgrow damage if it does occur.

"All-purpose" Garden Pesticides: Pesticide products that contain both insecticides and fungicides, and products that contain mixtures of lawn fertilizers and herbicides, are widely available. Using such products increases the amount of unnecessary pesticide being released into the environment. For example, if a fungicide/insecticide product is used on roses to control a fungal disease, then there is no benefit from the insecticide component (usually more toxic than the fungicide) to offset the harm it causes to non-target organisms. Most lawns require only correct fertilization and management to remain weed-free, therefore the routine use of fertilizers containing herbicides also presents a needless hazard to people and the environment. Customers should be encouraged to buy only the pesticides they need for specific jobs and to avoid the "shot-gun" approach.

Organic or 'Natural' Pesticides: Pesticides approved for use on organically grown crops are derived from natural sources. This does not mean they are non-toxic. While many are low in toxicity, some, such as rotenone, pyrethrins and sulphur, are as toxic as many synthetic chemicals and can cause the same harm to non-target organisms for the short period of time they are active. All pesticides, regardless of the source, must be handled and used with care and caution.

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Tips and Recommendations

Mixing

Promoting Ready-to-Use pesticides: Ready-to-use pesticides come already mixed to the correct concentration. With the exception of low risk products, such as insecticidal soaps, customers should be encouraged to purchase ready-to-use products because they:

- are less hazardous than concentrated chemicals
- do not require the user to calculate dilution rates or have special measuring utensils
- avoid the risk of spills during mixing
- avoid long-term storage of hazardous concentrate
- can be disposed of in the garbage, rather than household hazardous waste depots

A major problem with pesticide concentrates is that the containers usually hold enough to make far more spray than a customer can use up in several years. Customers often feel they are getting a deal buying concentrates because the cost per litre of mixed spray is lower than the same amount of a ready-to-use product. This is false economy if they do not actually need that much pesticide.

Measuring Pesticide Concentrates: If a customer buys a pesticide concentrate, they need to know that they require measuring utensils and that these must be kept separate from those used in the home for other purposes. Utensils used for pesticides should never be re-used in the kitchen. Vendors should sell suitable measuring utensils in the pesticide display area.

Combining Pesticide Products: Never mix two or more pesticide products together, unless they are clearly labelled for joint application (such as dormant oil and lime

sulphur sprays). If a customer needs to apply two different products, they should put them on in two separate applications.

Mixing incompatible products may:

- neutralize or change the effects
- form compounds that damage plant leaves

Using Dusts vs. Wettable Powders: Some customers may buy a dust product expecting to mix it with water to make a spray, without realizing they need to purchase a wettable powder formulation. If they want to use a dust to make a water spray, make sure the label directions state that the product is suitable for spraying. Dusts are almost impossible to mix into water unless they are formulated as wettable powders and are likely to be inhaled during the prolonged (and messy!) mixing process.

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Application

Recommending Spot-Treatments: Whenever possible, recommend that customers apply pesticides on a "spot" basis to individual plants or small target areas, rather than using broadcast applications. For example, suggest they spot spray individual lawn weeds, rather than apply a selective herbicide to the entire lawn area. This reduces the amount of pesticide required, which will:

- minimize health risks
- minimize the risk of harming the environment
- save the customer money

Using Pesticides Indoors: Pesticides to be used indoors must be labelled for indoor use. Dispensers should be able to advise customers of the following precautions for using indoor pesticides:

- Remove pets (including birds) and children's toys from the area and cover fish tanks before using pesticides on floors or furniture.
- Remove all food, dishes, and utensils before kitchen cabinets are treated for household insects.
- Do not try to fill a room with aerosol mist or mist from a spray applicator. The insecticides are intended to kill the insects when they come in contact with the sprayed surfaces.
- Use a trigger pump sprayer ("squirt-gun") or hand-held aerosol applicator for indoor treatments, rather than a compressed-air sprayer. An inexperienced person can easily apply too much pesticide using a compressed-air sprayer.

Spraying Pesticides Outdoors: Dispensers should be able to advise customers of the following precautions for spraying outdoors:

- Pesticides must not be allowed to drift onto neighbouring properties. To prevent drift, customers should spray when there is minimal wind. Early in the morning or later in the evening are often the stillest.

- Before spraying nearby areas, remove children's toys, lawn furniture, pets, and cover fish ponds.

Using Herbicides: Customers should know that systemic herbicides, those absorbed into a plant and move through it to the roots, only work when weeds are actively growing. Applying these herbicides when weeds aren't growing not only doesn't work, but is a waste of time and money, and needlessly burdens the environment.

Using Insecticides: Tips for insecticide use:

- Never spray fruit trees while they are in bloom or other plants in flower as such treatments can harm foraging honeybees.
- Know the life cycle of insect pests (especially those that are hard to see during the day). This will help the customer know when to spray for best effect. For example, spraying trees for tent caterpillars or rhododendrons for black vine weevils will only work for the few weeks of the year that these stages of the insects are present on the plant.

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Safety

Pesticides on Food Plants: A few key precautions for treating edible plants are:

- Before treating edible plants, make sure the product label states that it can be used on the specific plants to be treated.
- Do not harvest crops until the minimum number of days have elapsed after the pesticide application (see days-to-harvest on the pesticide label).

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Disposal

Disposing of Unwanted Pesticides: Any liquid ready-to-use products and any Domestic products that do not have a "skull-and-crossbones" poison symbol on the label can be disposed of in the household garbage. Pesticides that carry the poison symbol, such as rodent baits and certain concentrates, must be disposed of in household hazardous waste collection depots located throughout the province (for locations, contact [Product Care](#)).

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STUDY QUESTIONS

Answers are provided [here](#).

1. What are two common misconceptions customers have about pesticide use?

2. Why are "all-purpose" pesticide products, containing mixtures of pesticides, generally not recommended?
3. List three advantages of using ready-to-use pesticide products over concentrate products.
4. What are the advantages of using spot-treatments over broadcast treatment?
5. What should be removed from areas where pesticides are going to be used indoors? What type of pesticide application equipment should be recommended to customers planning to spray indoors?
6. Why should someone thinking of spraying an insecticide know the life cycle of the target pest?

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