

# REDUCING PESTICIDES

it's perfectly natural.



## INTEGRATED PEST MANAGEMENT

### What is Integrated Pest Management?

IPM is an approach to deal with insect and disease pests through a combination of strategies: cultural, natural, physical, biological and chemical. IPM is an effective, economical and *environmentally friendly* method of controlling pests (and some diseases). It does not eliminate pesticides, but rather, limits and controls their use. IPM focuses first on prevention and then on control.

### Prevention First

Invariably, prevention is less invasive than treatments that might be required after a weed or insect population or a disease has become established. Key factors are:

- Plant Health—plants in good health are less susceptible to insect and disease pests. Understand the requirements of each plant to maximize its health and vigour.
- Monitoring—the earlier pests are detected, the wider the choice of measures to address them. Recognizing and assessing pests is critical to choosing effective treatment.

### Natural Control Strategies

Foster natural pest control by encouraging predators such as ladybugs, lacewings, bats and birds by providing habitat, water sources and nesting material.

### Cultural Pest Management

Meet Cultural Needs of Plants	Choose plants that are appropriate for the environment you have to offer—hardiness, soil type and fertility, water, sun/shade, space, pollution tolerance and competition with other plants or with pets.
	Favour plant varieties that have been cultivated for pest resistance and plant vigour.
	Keep your grass thick and healthy by using a mulching mower, leaving the clippings in place. Cut your grass to no less than 2” tall. In fall, keep the lawn clear of leaves. These should be raked onto perennial beds where they will be broken down by worms to increase the humus content and fertility of your soil.
	Rotate vegetable crops to reduce the chances of diseases and pests re-infecting the following years’ vegetables and to prevent a lack of nutrients for one type of plant.
	Follow good irrigation practices – in general, water less frequently and to a greater depth. Avoid watering late in the day, which promotes mildew. Watering at ground level using soaker hoses uses less water and prevents mildew and leaf rot.
	Trim by hand around tree trunks to prevent injury from power trimmers.
	Do not add diseased plant material to your compost.



This fact sheet has been prepared by the Toronto Master Gardeners



Alleviate Environmental Stressors	Water young trees in dry periods, in keeping with good irrigation practices. Protect newly planted trees by mulching around the base (keep mulch from touching the tree trunk) and wrapping the trunk with burlap—young bark it is susceptible to broad changes in temperature on winter and spring days. Give your evergreens a good soaking as late in the fall as possible to protect against winter burn, which is caused by inadequate moisture stored in the foliage.
Mitigate Human Activity Stressors	Aerate your lawn after it has endured a lot of foot traffic. Aerate, fertilize and water liberally trees and shrubs affected by severe pruning or construction activity.
Companion planting	Interplant crops and vegetables with other plants such as nasturtiums, marigolds, parsley and garlic to repel or prevent pest infestations.

### Physical Pest Management

Removing Weeds	Pull weeds by hand—a variety of hand tools are available for this purpose. A few days after rain or watering is best. Weeds with taproots will re-grow foliage; however, each successive removal will reduce the energy stored in the root and eventually kill it. Weeds often are homes to insect pests and provide root competition to your plants.
Removing Diseases	Manage contained infestations by picking off and disposing of affected leaves, or by pruning and disinfecting. Sometimes, the best method to protect other plants is to remove the infected plant completely.
Removing Insects	Hand-pick insects that are large enough—beetles, weevils and caterpillars. Remove tent caterpillar nests at night or on overcast days when they will be at home. Use traps to reduce many pests. Snails and slugs collect under mulch and debris; kill them by squashing or drowning. Trap earwigs in short sections of hose and collect in the morning, drowning them in a bucket of water with a few drops of dish soap.
Water	Apply a forceful spray of water to control aphids and mites. Although they can climb back on, their mouth parts will have been damaged and they will be unable to feed.
Barrier	Sticky insect barriers can prevent insects such as caterpillars from climbing fruit trees.

### Biological Pest Management

Creating biological diversity and using naturally derived materials will provide habitat for beneficial parasites, pathogens and predators, which will keep pest populations in check.

Specific biological pest control treatments include:

- *Bacillus thuringiensis* (Bt) – spray on plant foliage to infect insects. Lasts only a few days, so repeated sprays may be needed. Will control caterpillars. Bt var. *tenebrionis*, controls beetle larvae, and Bt var. *israelensis*, mosquitoes.
- Parasitic nematodes – attack beetles in lawn and weevils at the base of evergreens and strawberry plants. Use plenty of water so the nematodes will soak down into the root zone where the pests are feeding.

### Chemical Pest Management

Organic pest control products such as insecticidal soaps, horticultural and dormant oils, horticultural vinegar, sulphur and lime-sulphur solutions should be used as final alternatives.