



Home & Garden Pest Management Guide For British Columbia

2019 Edition

Chapter 4 Integrated Pest Management



Integrated Pest Management

What is IPM?

Integrated pest management (IPM) is an easy to use, environmentally friendly way to manage pest problems. IPM uses a combination of techniques to suppress pest damage, including planning and managing sites to prevent problems, identifying pests, monitoring for pests, tolerating some pests, using a variety of techniques to manage the pests and checking to see how effective your actions were. Often, IPM programs are more effective and cost-efficient than other approaches.

The concept of IPM can be used to manage all kinds of pests, including weeds, plant diseases, insects and vertebrates. IPM programs are used in agriculture, forestry, botanic gardens and landscapes, and for household and structural pests such as carpenter ants. It is important to remember that not all insects, weeds, and other living organisms require control. Many organisms do not cause any problems and some are beneficial.

A preventative approach to pest management will help to stop many potential and established pests from becoming a problem. Preventative techniques include site planning and design to promote healthy, pest resistant plants, attracting beneficial insects and birds, excluding pests by using row covers, fencing or sealing holes in buildings, managing soil fertility, and irrigating the right amount at the right time. Chapter 5 “Prevention and Cultural Methods for Pest Management” describes these techniques in detail.

Only take action against pests when there will be significant damage, not as a routine measure. Most of the time, it is only necessary to suppress pest populations to non-damaging levels, not to eliminate them. If action is needed, choose the most appropriate combination of control measures. Control measures include prevention and cultural methods as well as biological control and pesticide use.

If using a pesticide, select the least toxic product that is registered for the use, and use it according to the label directions. Read Chapter 8 on “Using Pesticides to Manage Pests” including the information on avoiding overuse of pesticides.

The next section describes the six components of an IPM program using carpenter ant management as an example.

Components of an IPM Program

1. Prevention

When pest problems are prevented, pests are not present to do damage and no control measures are needed.

To prevent carpenter ants from becoming a problem, keep trees, vines and shrubs from touching the house or building. Plants that touch buildings attract ants and can act as “highways” the ants can use to enter the buildings. Fix all water leaks. Store wood in a dry location off the ground and away from the house or building. Carpenter ants seek out moist wood as a place to lay their eggs.

2. Identification

When a potential pest problem arises, correctly identify the pest. This is important because most control treatments are specific to particular pests. Once the pest is known, learn about the pest's behaviour and life cycle. This helps determine when to take action and what techniques to use to reduce the number of pests. For help identifying pests and plant problems contact a garden center, pest control company, master gardener, horticulture information line, or send a sample to the plant diagnostic lab. Page 2-1 provides contact information.

Carpenter ants are the most common large ant found indoors in the late winter/early spring. They are 3/5-2 cm long and predominantly black or sometimes black and red in colour. Winged ants fly in the spring; these are females looking for nesting sites.

3. Monitoring

Always monitor for pest populations, beneficial organisms and environmental conditions that cause problems. Monitoring is important because it provides the information required to make decisions about the timing and location of treatments and whether they are necessary. Monitoring programs include regular inspection for pests or signs of their presence. It is also important to monitor for natural enemies of pests as they can help to suppress pest populations. For some pests, visual inspections (insects, diseases, weeds) and/or counts of insects caught in traps are used to estimate pest populations.

When monitoring for carpenter ants, determine if the ants have a nest indoors or not. If ants are seen indoors in November - February a nest is probably present indoors. From March - October look outdoors for ants. If they carry food into the house, a nest

is inside. Next, determine, as accurately as possible, the locations of nests both indoors and out. Look for areas with a lot of ant activity, areas with moisture, "sawdust" the ants have ejected from their nests, woodpecker holes, and listen for rustling noises the ants make while in their nests.

4. Action Threshold

Next, determine how much damage is acceptable and when is the best time to control the pest. This varies with each pest. The action threshold is the level of pest population where control is needed. It will be different for each pest and crop combination. It depends on: what part of the plant is affected, the extent of the damage, the purpose of the plant in the landscape, the cost of the treatments, the impact on beneficial organisms and the users tolerance of pests or damage. The user's tolerance level depends partly on personal taste and perception, including aesthetics. For example, while some homeowners think clover lowers the quality of lawns, others appreciate its drought resistant and nitrogen fixing abilities that contribute to soil fertility.

Carpenter ant action thresholds depend on the species of carpenter ant. Some species rarely, if ever, cause damage, in which case the action threshold will be determined by acceptable nuisance levels. In most cases, plan to begin control when it is certain that a nest is indoors.

5. Management Options

One or several control methods may be coordinated into an IPM program to target a certain pest or several pests. Examples are:

1. Cultural preventative methods: resistant varieties, crop rotation, pruning methods, plant nutrition and sanitation.

2. Physical and mechanical methods: barriers, screens, traps and mulches; also flame, infra-red and hot-water weeders.
3. Biological control agents and beneficial insects: predatory and parasitic insects, beneficial nematodes and microbial controls.
4. Pesticides: includes synthetic and naturally derived pesticides, insect growth regulators and other products. Where pesticides are used, they should be chosen for compatibility with IPM practices. Information on pesticide use is in Chapter 8. Information on pesticide products available to the home gardener can be found in Appendix I.

Treatment options when managing carpenter ants: remove moisture sources; physically remove nests; vacuum ants from nests; treat ant pathways and/or nests with desiccating dust (diatomaceous earth), or slippery barriers, or appropriate insecticides. Managing carpenter ants usually requires the use of a combination of management options.

6. Evaluation

It is important to conduct follow-up monitoring or inspections to find out how successful your IPM program has been. Record what worked and what didn't, keep the records and review them to help plan pest prevention and management activities. Keeping a Gardening Journal is one option for keeping records of your pest management activities.

Evaluate how effective carpenter ant treatments were by looking for ant activity outdoors and in places where nests were found. Inspections are best done in warm weather at various times of day.

Gardening Journals

Keeping notes and records in a gardening journal can help you successfully manage your garden. Recording gardening activities assists a home gardener when choosing plant varieties for a specific spot and when to safely plant. Record keeping also provides information on which pests and diseases appeared, when they appeared, the amount of damage they caused, the pest management practices attempted and their level of success. In a garden journal, you can jot down important information on seeding dates, frost dates, fertilization and new plants added to your landscape.

There are several different kinds of formats for a gardening journal, and many are available for purchase. Some can be more extensive than others. You can choose to record information in a notebook, or explore different kinds of gardening journal templates available online.