

IPM in the Home Landscape

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Insect, disease, and weed pests can cause much injury to landscape plants raising concern among home gardeners whose hard work may not bear fruit. Home gardeners have traditionally relied on pesticides for plant pest control, however there are concerns with the use of pesticides. Since pesticides were effective, they were often overused resulting in increased pest resistance. Natural predators were often destroyed along with the pest when pesticides were applied. Also, pest control products were often applied after damage had occurred. In recent years, concerns about increased pest resistance, rising costs, environmental safety of pesticides have led to the development of an alternative pest control strategy called *integrated pest management* (IPM). The goal of an IPM program is to use monitoring, cultural, biological, and chemical control strategies to manage pest populations and not to eradicate the pests. While an IPM program may use chemicals to control pests, the rate and frequency of application is often reduced, compared to conventional chemical control programs.

Monitoring

Traditional pest control programs have been based on the calendar year with sprays applied at certain times of the year, regardless of pest activity. In an IPM program, regular plant inspections (about every 2 weeks) are performed to keep track of changes in pest populations. In addition, insects are also monitored through the use of insect traps, such

as *pheromone traps*. A pheromone is a sex attractant emitted by the female to attract the male for matings. These traps can indicate the first occurrence of an insect in an area, and how its population is changing. Based on monitoring, pest control decisions can be made according to which pests are actually present, not on which pests are thought to be present. Regular monitoring can prevent pest problems because potentially serious infestations can be discovered while they are still minor. It is also possible to keep track of biological controls such as ladybird beetles when plants are regularly inspected.



Pheromone Trap - Photo Credit: George C. Hamilton



Cultural Control

Many pest problems in the home landscape are the result of plant stress caused by poor soil conditions, poor plant quality, or improper plant siting (wrong amount of sun, soil moisture, etc.). When plant growth conditions are poor the plant may become more susceptible to insect and disease attack. If plants are unhealthy it may be necessary to remove them from the landscape. Regular soil tests can provide useful information which the homeowner can use to prevent pest problems.

Physical Control

Numerous pest problems can be prevented with physical means. A weekly washing from the hose will remove such common pests such as aphids. Insect or disease-infected plant parts can be removed by pruning. Barriers such as burlap tree bands can also be effective. Insects such as gypsy moth caterpillars and elm leaf beetles hide under the bands during the day, where they can be more easily destroyed. Physical barriers such as mulch can be used to reduce weed levels around landscape plants. Mulch has the additional benefit of increasing soil moisture retention and moderating soil temperature.

Biological Control

There are many naturally-occurring predators and parasites of plant pests which gardeners may not be aware. Two of the most common are the ladybug

and the praying mantis. There are a variety of others which are commonly present, but are so small that they may never be seen. When the use of pesticides is limited, natural predator and parasite populations are encouraged since most pesticides will kill these beneficial organisms. The New Jersey Department of Agriculture operates a laboratory in which a host of these beneficial organisms are raised for release throughout the state.

Resistant Plant Varieties

A number of landscape plants are naturally resistant or have been bred to be resistant to insects or diseases. Use of these plants can have a positive impact in the reduction of pest problems.

Pesticides

As mentioned earlier, pesticides are part of an IPM approach, but they are used differently than in a conventional pest control program. Plant monitoring, which is an integral part of an IPM program enables the gardener to pinpoint those areas of the property where a problem is serious enough to warrant spraying. Spot spraying can represent a great savings in the amount of pesticide applied to a property as compared to a conventional program in which all plants would be sprayed. In terms of preventing pest problems, the best pesticides to use are either dormant oil or insecticidal soap. These compounds are effective against a wide range of insect pests, but are less harmful to non target organisms, such as ladybird beetles.

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