

Check-

- 1. What pests do you have?
- 2. Where are they coming from?
- 3. What are they eating or where do you find the pests or diseases?
- 4. What are your control choices?
- 5. Which method will control your pests while causing the least harm?
- 6. Read the pesticide label.

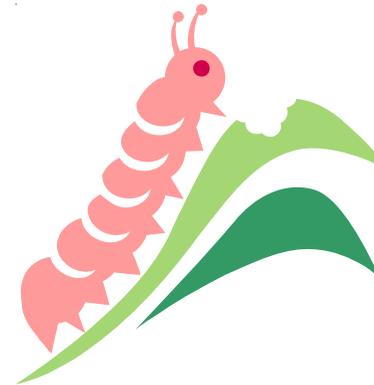
**Groundwater-
Everyone's Resource
Everyone's Responsibility**

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Check Before You Choose a Pesticide



Making Safe Decisions for Controlling Pests

Let's Get Started

- 1. What pests do you have?

It's important to know what your pest or disease problem is before you can safely and effectively control or manage it.

Capture some of the pests and take them to your local Michigan State University Extension (MSUE) office or garden store. If the pest is eating your plants or if it is a disease problem, take some part of the damaged plants or plant parts (leaves, branches, etc.) to help in the identification.

After identifying your pest, learn more about it. Does your level of damage need some control measure? Is it seasonal?

Knowing the type of pest will immediately focus your control choices. For example, an insecticide will not control a mildew (fungus) problem.

2. Where is the pest or disease coming from?

Many insect pests live some place else in their earlier stages of development. For example, many beetles have a grub form located underground.



JAPANESE BEETLE

Japanese beetle grubs feed on grass roots, then emerge as adults and feed on your flowers, fruit and shrubs. Controlling them as grubs stops damage to both your lawn and your other plants.

Plant disease organisms often are carried by wind from nearby infected plants. Getting rid of the pest or disease source may be an easy control method. Also, eliminating a few weeds early on may prevent many weeds later.

Remember- It's cheaper and easier to keep pests and diseases out than to try to control them after they have been introduced. Carefully examine plants before you put them in your yard. Look for healthy roots too!

3. What are the pests eating or where do you find the diseases?

Knowing what pests are feeding on is important. Are they eating all of your garden or

do they have favorite plants? If only a few plants, then maybe you can exclude the pests by nets or other barrier.

Where do you find the most problems? Is it at the bottom of the plant or the interior part of the plant? Are the diseased plants located in a shady or damp area? Are the weeds in only one area? Identifying the part of the plant and the site most affected may point to environmental conditions that with modification such as pruning for more air movement or altering the moisture level or selecting plants more suitable for the location may help control the problem.

See your local MSUE office for information on your pest or disease.

4. What are your control choices?

Your control is based on the type of pest (insect, weed, rodent, nematode, fungus or bacterium). After determining the pest, consider your options:

 Plant Health – Healthy, unstressed plants are less susceptible to pests and diseases. Example: using resistant or native varieties appropriate for your site and conditions.



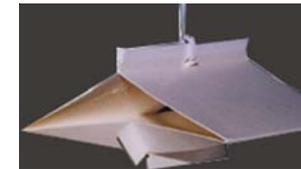
ROOT ROT

 Sanitation – Removing or reducing the number or source of the pests or disease. Example: getting rid of dead, dying or insect invaded plants, raking up diseased leaves, hand pulling or hoeing weeds, picking off snails, slugs or insects.

 Barrier – Preventing access. Example: putting sticky material around a tree trunk to prevent the upward movement of caterpillars or crawler stage of scale insects or other pests; putting cans (open at both ends) around young annuals to prevent cutworm damage.

 Natural Chemicals – Example: planting marigolds to discourage nematodes (eelworms) in the soil.

 Traps – Example: Sticky boards and traps with sex attractants can be purchased for



IPM TRAP

capturing specific insects. Some lures attract only one sex. These may be used to aid in the proper timing of a chemical application. Homemade traps for snails and slugs may be as simple as a pie pan sunk at soil level and filled with beer, or a half grapefruit partially hollowed out and turned upside down on the ground so snails and slugs can collect under it. Trap plants (more attractive to the pest) may also be used to concentrate the pest or lure it away from your crop plant.

 Crop Rotation – Rearranging where you plant your annual flowers or vegetables helps prevent pest or disease build-up in an area.

 Chemical control – Pesticides are designed to control specific pests on specific plants or locations. Over usage of a pesticide may result in it no longer being effective.

5. Control while causing least harm.

After identifying your pest, where it's coming from, what its harming and what your control choices are, choose the pest or disease control that will be least harmful to you and your family, other organisms and your water quality while still giving effective control. Generally, the more specific a control measure, the less likely it will harm other (non-target) organisms.

Ask your MSUE home horticulture agent for advice.

6. Read the label.

If you choose to use chemical control, the label will tell you where and how to use the product safely and what to do in case of pesticide poisoning.

Always read the label before buying, using or storing a pesticide. Pesticide mismanagement may harm you and your water quality.