

## What's Best for Pests? by Kathy Nunes

Gardens have awakened from their winter slumber, and insects and weeds have awakened too! Before you grab a product to eradicate them, think it through and come up with a plan that's least harmful to the environment and your health. Encouraging good bugs to destroy and repel bad bugs is one element of IPM (Integrated Pest Management). In simple terms, IPM is the practice of using multiple methods to manage pests with environmentally sound approaches.

**Biological control:** Use these safe measures before resorting to pesticides that can damage nature's self defenses. There are three types of beneficial organisms that can naturally attack a bad pest population. **Predators** are the natural enemies of many pests. You can help attract them to your garden by planting their favorite herbs, perennials, annuals and crop plants. **Parasites** are organisms that are actually good at killing target pests. They destroy the host by entering and pupating inside of it. Then, there are good **Pathogens**—bacteria, fungi, nematodes, protozoa, and viruses that can infect and kill the unwanted pest. For more details and photos to identify good and bad pests, go to <http://www.ipm.ucdavis.edu/>.

**Pesticide use:** Can't get a handle on pest damage? There may be times of heavy pest infestation that need more drastic measures. A pesticide is a broad term for any material (natural, organic, or synthetic) used to control, prevent, kill, suppress, or repel pests. The term pesticide includes insecticides (insect killers), herbicides (weed or plant controls), fungicides (fungus destroyers), rodenticides (rodent killers), miticides, (mite control) and molluscicides (snail and slug killers).

Consider pesticides to be a last resort and choose the least toxic product. "Broad spectrum" pesticides are more dangerous, as they do not target a specific organism. They can also kill nature's good assailants used for biological control. Pesticides even kill organisms needed for plant health, such as pollinators like honey bees. "Selective" pesticides are safer as they kill only a few closely related organisms.



### Pesticide hazards:

- Follow label directions exactly. If applying more than the rate directed on the label, plant injury may occur. Your health may also be impaired and the pesticide may contribute to soil, air or water pollution.
- Carefully consider the signal words on the label: Danger (Category I), Warning (Category II), and Caution (Category III). Although they are a good indicator of the toxicity, they do not give an indication of potential for causing chronic problems (e.g., cancer, reproductive problems or other long-term health effects).
- If pesticide "overspray" lands on sidewalks or driveways, it is easily transported by rainwater or lawn irrigation into storm drains and into our creeks and watersheds.
- Don't apply pesticides just prior to rainfall. This will increase leaching, which flushes pollutants through the soil by rain or irrigation.
- Be careful when using herbicides for weed control and don't apply in windy conditions. If not used properly, herbicides will also kill desirable garden plants.

Prevention: Yes, an ounce of prevention is worth a pound of cure! The easiest way to avoid insect damage in your garden is to discourage them from coming in the first place. A healthy garden is the best defense:

- Pull out weak plants and dispose of them away from the garden area.
- Build healthy, organic soil. Use compost, clean mulch and top dressing with natural fertilizers to develop strong, vigorous plants.
- Clear garden area of debris and weeds which are breeding places for insects.
- Keep foliage dry for most of the day by watering early. Wet foliage encourages insect and fungal damage to your plants.
- Disinfect - clean your tools before moving on to other garden areas. This will reduce the chance of spreading a disease.
- Interplant and rotate crops.
- Don't clean pest control equipment in a location where rinse water could flow into gutters, storm drains, or open waterways.
- Only apply the rate listed on a pesticide label.
- Never use pesticides labeled for "outdoor use only" indoors. Do not use pesticides labeled for use on ornamental plants on plants that will be eaten.
- Try easy actions like using a strong stream of water from a hose to knock pests off plants; use barriers and traps.
- Keep in mind that damaging pests cannot be entirely eliminated.

Finally, dispose of the product properly! The only legal way to dispose of pesticides is to take them to your local household hazardous waste disposal facility.



*Kathy Nunes will complete her initial certification period as a Master Gardener this year and reminds herself that she can tolerate some imperfections while letting nature take its course.*