

Eliminate plant pests with water and herbal solutions — not pesticides

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You've coddled your seedlings, nourished your soil and provided a cozy habitat for beneficial birds and insects. Yet by midsummer, an explosion of aphids, Japanese beetles or some other insect pest threatens to destroy not only your serenity but also your garden's beauty and bounty.

The good news is: You can stop these insect invaders without turning to dangerous pesticides. We rely on several common-sense strategies and time-tested herbal repellents that almost always do the trick.

The strategies for staying ahead of garden pests are fairly simple. First, be aware of the life in your garden. Look for insects and mites and observe their activity daily, or as often as possible. Scout for common pests, but keep in mind that some insects, such as ladybugs, lacewings and praying mantises, are beneficial predators that can help control pests. If you have trouble identifying what you're seeing, contact your county extension agent, who can help. The Penn State IPM (Integrated Pest Management) Program for home gardens (paipm.cas.psu.edu/385.htm) has photos and information on 25 common garden pests.

Damaged leaves are a good indication that a plant is infested with some insect pest. If you look a bit closer, you'll probably see eggs, larvae and/or adult insects. Check the bottom of leaves, where pests (especially spider mites) often congregate. Also examine stem junctions, where mealybugs hide their egg masses. Aphids are especially fond of the tender tips of plants, and ants even will carry them there

to keep the population growing!

Now that you've determined that a pest has taken up residence among your plants, you can take actions to stop it. Begin with the least toxic, least expensive and most convenient method first: a strong spray of water.

You'll need an adjustable nozzle turned to the fan setting. This will allow you to direct a wedge of water over a large plant surface. Adjust the pressure so the water will wash away pests without damaging the plant. Spray the entire plant, side to side and top to bottom — as well as the top and bottom of leaves — until the plant is completely clean.

The best time to spray water (or any control product) is in the cool of the day when plants are not in direct sunlight. In direct sun, water droplets act as tiny magnifiers, concentrating light on plant tissues and causing them to burn.

Plant-feeding pests also are less energetic and easier to target in early morning and evening.

Besides using these water baths to stop pests, we also use a homemade garlic-chile-soap spray, neem oil and horticultural oil, alternating among them monthly, if necessary, to keep pests off balance.

For instance, after we spot an infestation, we first blast the plant with plain water, then follow with garlic-chile-soap spray every three to five days until the pest is gone. A single spray rarely removes all of the tiny pest eggs, which are attached to leaves with strong webbing. Also, rain washes off the soap spray, so you may need to respray every few days.

If the pest still is present after a month or so, we switch to a neem oil solution, applied according to package directions. And if neither the garlic-chile-soap nor the neem

oil sprays do the trick after two months, we use horticultural oil spray the third month.

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Garlic and chile insecticidal soap spray

Makes about 3 cups concentrate

10-12 large cloves of garlic
4-6 hot chile peppers, dried or fresh
2 generous cups of water
1 tablespoon liquid castile soap (like Dr. Bronner's or Shaklee Basic H) or any biodegradable liquid dish-washing soap

Optional:

10 drops cinnamon, vetiver or eucalyptus essential oil

Instructions: Put garlic, chiles and water into a blender and puree contents until foamy.

Let mixture stand at least two hours or overnight. When mixture settles, you will have a coral-colored liquid with sediment at bottom.

Pour through a strainer lined with fine cheesecloth (or through a coffee filter or jelly bag) to remove particles that could block the sprayer valve.

Pour concentrate into a jar with plastic lid (not metal), add soap, stir and label.

Store in a cool, dark place until needed, as long as a few months. For a 1-quart or 1-liter spray bottle, use 2 tablespoons concentrate and fill the rest of the bottle with water.

Spray plants late in the day, so hot sun can't burn the plants. Cover the top and bottom of leaves. Reapply as often as needed, but allow several days between applications.

