

Bug Off! Here are some tried-and-true tips for ridding your garden of 10 of the most common invading insects. And you won't need to resort to chemical combat. By Lee Reich/Photograph by Tim Robberts

Its hours are numbered. That hungry, fat green caterpillar munching away on my tomato plant doesn't have a chance. The assassin—a parasitic wasp—has already stowed its munition on the caterpillar's back: tiny rice-grain-like eggs that will hatch into larvae that kill the tomato hornworm before it can mature and multiply. All I have to do is sit back and watch the drama unfold. That's because if I were so foolish as to spray the plant with an insecticide or squish the caterpillar, those wasps wouldn't grow up and return annually to keep the hornworms in check.

As long as you know when to take this laissez-faire approach, it can be an effective means of dispatching insect pests. Almost as easy as that live-and-let-live technique is another natural pest control: ripping an infested plant out of the ground, an exercise in tough love that can also knock out a problem before it spreads. Some situations demand more direct action, such as handpicking a scourge that is sluggish or scant. Know thine enemy and you will likely discover some physical barrier or trap that will defend against a full-fledged invasion.

When nothing else can thwart a debilitating insect attack, you might need to add sprays to your arsenal—though not necessarily toxic pesticides. A spritz of plain water can sometimes suffice. Or you might need to employ one of the environmentally benign techniques touted below. You'll likely find an organic solution for virtually any problem. Here are 10 of the more common garden insect pests you might encounter along with ways to get rid of them without turning to chemical warfare.

1. Aphids Aphids are small insects that suck sap from plants, causing leaves or young shoots to curl or wrinkle and then change color, usually yellow but sometimes other hues. They exude a "honeydew" that leaves an unpleasant sticky residue on foliage or on floors and counters beneath infested houseplants.

Aphids often succumb naturally to predatory insects like lacewings and ladybugs (attracted to your garden because there are no pesticides) or to a drastic change in their environment, such as moving houseplants outdoors for summer. Every spring the first leaves—and only the first leaves—of my red currant bushes pucker and turn reddish from aphid attack. I do nothing; the insects disappear and the plants go on to grow and bear well.

I might help an aphid-infested plant along by running my fingers over some stems or leaves to crush the pests, dislodging them with a blast of water, or pruning off a stem tip, where the bugs tend to congregate. If bolder measures are needed, it's time for relatively nontoxic sprays, such as insecticidal soap or horticultural oil. Any soap has some effect, but be careful, because soaps can damage plant leaves if they're too concentrated. Insecticidal soaps are made from specific fatty acids that make them more toxic to bugs. Horticultural oils are lightweight and highly refined so that they won't harm plants while smothering insect pests. Both have a long history of being used against pests, and they are normally effective.

Some aphids enjoy a symbiotic relationship with ants: The ants protect them from their predators and, in exchange, they get to eat the aphids' sweet honeydew. For this reason, it's best to defend against both species. To protect my peach tree, I wrap masking tape around the trunk, then coat the tape with sticky Tangle-Trap (available at most garden stores), which literally stops the ants in their tracks.

2. Boxelder bugs These insects might appear more menacing to house siding than to plants. The sporty-looking orange-and-black bugs feed on boxelder as well as maple and ash trees, but they do little damage. You will likely see hordes congregating against warm house walls or moving indoors. Come fall they hunt for cozy winter homes—our homes—which they enter through cracks and other openings. On warmer winter days they are apt to move about, sometimes indoors, but mostly congregating on siding. Dealing with them is simple: Seal up openings in your home, vacuum up any bugs that get indoors, and ignore the rest.

3. Cabbageworms The winsomeness of the white butterflies flitting about my kale and broccoli plants each summer doesn't fool me—I know they're up to no good. These buggers are laying eggs that will hatch into hungry cabbageworms that can kill small plants and weaken larger ones. My primary natural control is to tolerate a certain degree of destruction (and, to my wife's chagrin, an occasional cooked caterpillar in our broccoli). When caterpillars become so numerous that seedlings are losing their foliage or more mature plants appear clearly damaged, I pick the worms off by hand. If stronger measures are needed, I spray plants with Bt (*Bacillus thuringiensis*), a biological insecticide just for caterpillars that's sold widely under such names as Thuricide and Dipel.

4. Cutworms Cutworms are particularly annoying because they don't even bother to eat a whole plant—just the stem at soil level. But that's enough to topple and kill a plant. They like their victims young, choosing only seedlings. (Once those tender stems toughen up, they seem to lose their appeal.) Fortunately, cutworms are easily fooled. I slide a wooden toothpick into the soil along the stem of transplants. The cutworm, checking out its potential dinner, mistakes the seedling for a tree and moves on. Collars made of cardboard tubes with their bottoms pushed into the soil also work well. Cutworms feed at night, but it's easy enough to unearth them during the

day. Whenever I find a vanquished plant, I dig beneath nearby soil to find and destroy the plump, curled-up caterpillar.

5. Japanese beetles If only a small regiment of these metallic, blue-green bugs descends on your trees, leaving their calling card of skeletonized leaves, you might be able to drive them out with hand-to-hand combat. I keep a covered jar full of soapy water in the garden precisely for this purpose. In the cool of the morning, while the beetles are still sluggish, I knock them into the liquid (soap prevents them from shaking off the water and flying away). The sooner patrols begin, the better, because the mere presence of beetles attracts more beetles.

Milky spore, a naturally occurring bacterium, and parasitic nematodes are two treatments (available at garden stores or by mail-order) that can serve as allies against larger infestations. Both target the plump white Japanese beetle grubs, which hatch from eggs the adults lay in soil toward the end of summer. Still, you might want to recruit the neighbors and put up a united front because effectiveness is limited if the adult beetles can stage multiple attacks by flying from one yard to the next.

6. Mites Mites are so tiny that you won't likely see them before they've left their calling card, marked by the presence of slight bronzing and fine webbing on foliage. Some types of mites, like spider mites, thrive best in dry, dusty conditions, so my first line of attack is to give infested plants a good squirt of water. I've never had to turn to anything stronger, but if water doesn't do the trick, try insecticidal soap, horticultural oil, or sulfur. Sulfur is a naturally mined mineral, which is not to say that it's totally nontoxic. It is low in toxicity, though. Sulfur hurts some sensitive plants, so follow the label instructions explicitly as far as timing, concentration, and the types of plants that can safely be treated.

7. Scale insects Scale insects will also weaken or kill your plants. These aphid relatives settle down in one spot to feed, remaining in place beneath a protective scale, and like aphids, suck sap and exude a sticky honeydew. The insects look like small brown bumps on leaves or stems that could be mistaken for bark lenticels. But flick one off and you'll see bark tissue, rather than green tissue, beneath.

If their numbers are few, scale insects can be easily disposed of by rubbing them off the plant; once dislodged, they won't start feeding again. The problem is that "few" too easily becomes "many." For larger infestations, go at them with a cotton swab or old toothbrush dipped in alcohol. Various natural sprays are also effective, including insecticidal soaps, horticultural oil, and Ced-o-flora Green, which is categorized by the EPA as a "minimum risk" treatment, a special class of pesticides that are not subject to federal registration because their ingredients, both active and inert, are demonstrably safe for the intended use. These sprays must be applied repeatedly and regularly to catch the pest while it's still crawling around looking for a place to settle down and form its proactive scale covering. **8.**

Slugs Biting into a slug that once stowed away on a lettuce leaf and wound up in my salad has made me especially wary of this pest. (These slimy suckers are not to my taste, despite being relatives of escargot.) They work at night, chewing holes in foliage and leaving silvery, gooey trails in their wake. A number of natural controls can be employed for slugs, including handpicking them at night with tweezers. If you prefer a less intimate approach, try sprinkling them with salt—causing death by dehydration—but use a light touch because salt can be bad for plants and soil, too.

Beer, poured into shallow, ground-level containers, has long been a favorite way to trap and kill slugs. Sprinkling wood ashes, lime, crushed eggshells, and other dry or sharp materials over the soil also deters slugs because the gastropods are apt to avoid slithering over such caustic or jagged things. Iron sulfate (sold as Escar-Go! at stores or via mail-order) is another relatively nontoxic deterrent, as are barriers made of copper tape, foil, or screening. It also helps to clean up old plant debris, where slugs might find shelter.

While I don't like the taste of slugs, my chickens and ducks apparently do. They patrol the gardens' borders daily for those gooey morsels I find so revolting.

9. Tent caterpillars I remember, as a young boy, being awed by tent caterpillars, their wigwam webbing, upon close inspection, seething with wriggly life. A few different caterpillars create that characteristic lacework, but they all eat leaves and they can all be treated the same way. One natural control beloved by boys everywhere: Poke a stick or broom into the caterpillar's lair and rotate it to wind out the nest. (You choose your method for destroying the captured worms.) Other methods include pruning off infested branches, very carefully torching the tents in place, and spraying early in the season (while the caterpillars are still small) with Bt. Or you can do nothing. Unless trees are already weakened, they usually bounce back from leaf loss, and birds—especially scarlet tanagers and red-eyed vireos—tend to clean up the caterpillars.

10. Tomato hornworm Not everyone's yard is blessed with parasitic wasps to keep tomato hornworms in check. Then again, not everyone's tomatoes are threatened by hornworms. Bt is effective against this menace, too. Even easier, when populations are sufficiently low, is to just pluck them off. Look closely, because the worms' velvety green skin is hard to discern among the tomato leaves. Remember, though, if you see "rice grains" on a caterpillar's back, leave it be—nature will soon take its course.

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