

CLIMATE SOLUTIONS

How to keep pests from destroying your garden

Some pests reproduce much faster in hotter conditions.



By [Allyson Chiu](#)

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While you might welcome the recent pattern of [milder winters](#) followed by the [earlier arrival of spring](#), the greater number of warm days could spell trouble for your garden.

Many common plant pests and pathogens are [thriving as temperatures rise because of climate change](#), said Matt Kasson, an associate professor of mycology and plant pathology at West Virginia University. At the same time, unseasonable and, in some cases, extreme weather can stress plants that haven't adapted to the changing climate, leaving them more vulnerable.

"The scales basically tip in favor of the pathogens and pests in these situations," Kasson said. For example, a longer growing season means more time for plant pathogens, such as fungi, to develop infectious spores. Some garden pests, such as spider mites, also reproduce faster in hotter conditions.

"When we think about disease, we need three things for it to occur: We need a susceptible host, a virulent pathogen and a favorable environment," he added. "At least two of those things — a susceptible host and the virulent pathogen — are pretty much ever present on the landscape. It's really the slight changes in the environment that allow for the pathogen to really proliferate on that host."



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Here's what might attack your garden and what you can do.

How to tell if your plants are under siege

Keep an eye out for signs that your plants may be in trouble. Do you see any insects frequently hanging around? Is there mold covering leaves or other plant parts? Are you noticing worrisome symptoms, including blight or stunting? Are leaves yellowing, browning or wilting?

To help figure out what could be harming your plants, Kasson recommended using online resources, such as the

to help figure out what could be harming your plants, Kasson recommended using online resources, such as the [iNaturalist app](#) or social media gardening groups, where you can upload photos and potentially get help identifying the problem. [Local plant disease clinics](#) can also diagnose plant damage.

Here are some common garden pests to look out for:

- **Aphids**: These insects are tiny — about two to four millimeters long — with pear-shaped bodies. They can be green, black, red, yellow, brown or gray. Signs of severe aphid feeding include twisted and curled leaves, yellowed leaves, stunted or dead shoots and poor plant growth.
- **Spider mites**: The two-spotted spider mite is the most common species. They have eight legs and are about the size of a grain of sand or a period drawn with a pencil. You might have a spider mite problem if you notice the following: pale or unusually yellow leaves; stippling, or when leaves have tiny white or yellow spots on them; leaves developing a bronze or brownish color; dusty, gritty feeling leaves; or fine webbing similar to spiderwebs showing up on new plant growth and between leaves.
- **Squash bugs**: Usually dark gray to dark brown, these flat large insects are about 5/8 inches long. They typically attack squash and pumpkins, but they can also go after other plants in the cucurbit family, such as cucumbers. Signs of feeding include yellow spots on leaves that eventually turn brown and, in severe cases, wilting.
- **Hornworms**: These large caterpillars have a hornlike tail and love tomatoes. They munch on leaves and can completely defoliate plants, and they can chew holes in fruit.

Invisible pests

What's attacking your plants may also be lurking out of sight in the soil. Milder winter temperatures often lead to wetter soils, Kasson said. Typically when soil is frozen during winter, plants are dormant and there's often less microbial activity, he said. But the warmer weather means more winter rain that can saturate soil.

This wet soil favors pathogens that can attack and invade the roots of dormant perennial plants, creating the opportunity for more disease.

Here are some common problems related to invaders hiding in your soil:

- **Water molds**: Pythium and phytophthora are two types of molds that are ubiquitous in soil. They create root and crown rot, resulting in yellowing, stunting or wilting of parts of the plant that are aboveground. Affected roots are soft and mushy and could appear to be soaked with water, glassy and dark brown.
- **Southern blight**: Caused by a fungus that lives in soil, on plants including weeds, and in plant debris, this disease initially causes a water-soaked appearance on lower leaves or water-soaked spots on lower stems. Infected plants yellow and wilt, often within days of infection, particularly when the weather is moist and warm. It can also cause rot.
- **Verticillium wilt**: A soil-borne fungal disease that can affect many fruit, vegetable and ornamental

plants. It infects plants through the roots, causing dieback and making leaves yellow and wilt.

How to protect your plants

After you identify a problem, it can be helpful to reach out to extension programs at nearby universities. These experts can provide resources for how to deal with pests and diseases, including guidance on integrated pest management. If you need pesticides and fungicides, they can also help with questions about how much you should be using.

But in some cases, if you're facing a virulent pest, you may need to cut your losses and get rid of the infected plant, said John Salte, lead horticulturist at Smithsonian Gardens. Though he noted that you might make an exception for particularly valuable plant specimens.

Removing afflicted plants can help protect their healthy neighbors. "Those pests can spread to another plant nearby that is an alternative host for the pest," Salte said.

To safeguard your plants, it's critical to be proactive, he and other experts said. Here's what you can do to help avoid problems:

Pick a good spot. Check your soil fertility before you plant. You should also make sure you're putting plants in the right place. For example, plants that typically grow better in cooler northern areas shouldn't be planted in the hottest part of your yard, Salte said.

Because stressed plants aren't as resilient against pests and diseases, set your plants up to be as healthy as possible.

"The pest will actually pick the plant that's stressed; they can sense whatever's going on," Salte said. "They're going to attack that one first."

Give your plants some space. Crowding can contribute to pest and disease outbreaks, Kasson said. Managing weeds can also help because it increases air flow and reduces humidity around your plants, making it harder for pests and pathogens to thrive.

Taking an integrated approach to protecting your garden is key, he said.

"These small, subtle changes we make in trying to kind of optimize conditions in our gardens could have profound effects on the outcome," he said.