

# Gardening Basics

## Spider Mites

Intensive damage is often done to your plants before you know spider mites have invaded the garden. Spider mites thrive in hot dry conditions. Often gardeners mistake the tiny white or yellow spots that give leaves a stippled or mottled appearance with nutritional deficiencies, plant diseases, or water stress. As feeding becomes more severe, plants look bronzed, with curled leaves that may drop. Browning branch damage, often noticed on junipers in our area, is often mistaken for water deficiency during our long, hot summers. Infested plants may have webbing covering the leaves or stems.

### ID and Lifecycle

Spider mites are arachnids, not insects. They have eight legs and depending upon the species, their colors range from red and brown to



*Two-spotted spider mite damage, (Tetranychus urticae) Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org (CC BY 3.0 US)*



*Spider mites, (Tetranychus sp.) adults  
 O.P. Sharma, Bugwood.org (CC BY-NC 3.0 US)*

yellow and green and appear as black specks on the back of leaves. If you cannot visibly see any spider mites, try viewing with a hand lens or shaking the affected leaf or branch over a plain white sheet of paper; you may observe small spots (spider mites) moving about on your paper.

Adults lay clear to yellowish spherical eggs on the undersides of the host plant's leaves and buds. There are five stages as they progress from egg to adult. Soon after emerging from the last nymphal stage, adult males and females mate. Depending upon the temperature, spider mites go from egg to breeding adult in five to twenty days. Multiple generations may exist on plants at the same time.

As populations increase and heavily infested plants decline, a cottony webbing appears. These thread strands aid the dispersal as the wind blows the mites to new branches or plants. Two-spotted spider mites may overwinter outdoors as adults. They may continue to breed in mild winters or indoors on host plants and the eggs may be in litter and under bark. Many generations can occur per year.

### Plant Damage

Spider mites have sucking mouth parts and feed on the inner tissues of leaves. Sucking insects will often attack leaves along the midrib and veins on the underside of leaves, where the leaf's main xylem and phloem (vascular tissue) conduct the plant's absorption of water and minerals. Symptoms include a stippled pattern of yellowish, gray, or whitish dots on the leaf surface. This causes the leaf to become dull, turn yellow or gray, and eventually brown and fall off. The plant may even die.

Damage often begins on the lower leaves and moves up to newer foliage. As infestations increase and the plant becomes more distressed, mites may move to the upper portion of the plant where they are picked up by the wind and dispersed. Mites attack a wide range of plants, including ornamentals, vegetables, fruits, and even houseplants.

## Management and Controls

Stress-free, healthy plants with adequate water and space for air movement are the best preventive measures. Too much nitrogen can produce heavy foliage which hinders wind flow through and between garden plants, thus encouraging disease and inviting pests with a place to hide.

### Cultural Controls

- Check your plants frequently to identify the presence of spider mites in the early stages.
- Before treating your plants, turn the leaves over and look at the back. The foliage of heavily infested plants can be cut off and thrown away if beyond repair.
- Debris should be put in the garbage and not in the compost bin or used as mulch.
- Avoid broad-spectrum pesticides in your garden when possible. These will kill off natural predators and frequently cause mite outbreaks.
- Try knocking spider mites off the plant using a high-pressure water spray: spray upward from beneath the plant foliage. It can also help to wash the dust from trees, plants, and paths.
- Encourage natural enemies including small lady beetles, predatory mites, minute pirate bugs, and big-eyed bugs like green lacewing larvae.



Two-spotted spider mite, (*Tetranychus urticae*)  
David Cappaert, Bugwood.org  
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### Chemical Controls

A pest-free garden is an impossible goal. A healthy garden can withstand a few garden pests. Avoid the overuse of pesticides — many critters are now resistant to certain chemicals. Choose less-toxic insecticides to avoid also killing beneficial insects, thus leaving trees or shrubs unprotected by natural predators.

- Commercial insecticidal soaps (not homemade, as these can burn and damage plants) or horticultural oils made from either petroleum, vegetable, or neem oil may be effective.
  - These must directly contact the mites to kill them, as they do not have any residual effect. Repeat applications may be needed.
  - Don't use soaps or oils on water-stressed plants or when temperatures exceed 90°F.
  - These materials may injure some plants, so check labels and test them out on a portion of the foliage several days before applying to the whole plant.
- Use pesticides wisely and according to label directions.
  - Apply pesticides only to plants listed on the label as some formulations can cause damage.
  - Mix carefully according to directions and apply only the recommended strength of solution.
  - Systemic pesticides make plant tissues and fluids toxic to the feeding spider mites. Use with caution as these can discourage or kill the natural predators and pollinators.
  - Non-systemic pesticides must directly contact the mites and may require repeated applications.

## Resources

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