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Spider Mites

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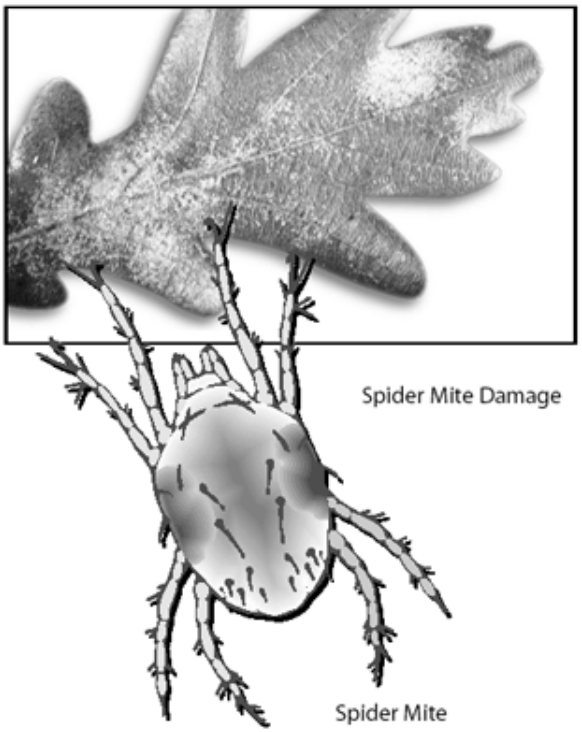
Spider mites (Family Tetranychidae, Order Acari) are not insects; they are closely related to spiders, harvestmen (daddy longlegs), and ticks. Unlike insects, which have six legs and three body parts, spider mites have eight legs and a one-part body. They also lack wings, antennae, and compound eyes. Individual spider mites are almost microscopic, yet when they occur in large numbers, they can cause serious damage. Dozens of species attack shade trees, shrubs, and herbaceous plants.



Life History: The two-spotted spider mite overwinters as an adult in the soil; the honeylocust mite overwinters as an adult in bark crevices on the trunk and branches. Most other common species on trees and shrubs overwinter as tiny round eggs on leaves or bark. These eggs hatch in March or April. First-stage larvae have only six legs, but after molting, they become eight-legged nymphs. Both larvae and nymphs resemble the adults. Development time from egg to adult varies from five to 21 days depending on the species of mite and the weather. Many generations occur each year. Under optimal conditions, populations can build up very rapidly. Spider mites on conifers and broad-leaved evergreens are cool-weather pests. They feed heavily and reproduce quickly in spring and fall. Activity is low during the hot part of summer, although damage is often at a maximum and becomes easier to see when other plants are green and growing normally. Spider mites on honeylocust, linden, elm, willow, and oak are destructive in the summer. The two-spotted mite thrives whenever conditions are favorable for plant growth.

Damage: Spider mites have a pair of needle-like structures called stylets, which are used to rupture leaf cells. A feeding spider mite pushes its mouth into the torn tissue and draws up cell sap. Small patches of cells are killed, resulting in a stippling or fine flecking on the upper surface of leaves, giving the leaves a "sandblasted" appearance. On heavily infested plants, the foliage will become bronzed, bleached, yellow, or gray. Untreated, such plants lose vigor, become progressively thinner, and may eventually die.

Recognition: Spider mite damage to foliage is similar on all host plants: fine stippling which progresses to an overall bronzing of the leaves. Eggshells and cast skins are usually visible on the underside of damaged leaves when viewed with a hand lens. Mites can be observed by shaking infested leaves over a

white piece of paper. The mites are about the size of the period at the end of this sentence.

Major Pest Species: *Spruce Mite*. This serious pest is found only on conifers, hemlock, arborvitae, spruce, fir, juniper, and, occasionally, pine. A fine webbing, which collects dust and dirt, is produced on the foliage where it feeds. Infested plants lose their color and the foliage becomes thin, because severely damaged needles drop prematurely. Treat twice, one week apart, in early May, and repeat in late September if necessary. See Spruce Spider Mites, Virginia Cooperative Extension publication 444-235.
Southern Red Mite. This species is common and serious. It attacks broad-leaved evergreens. Japanese holly, azalea, and camellia are especially susceptible hosts, but laurel, rhododendron, other hollies, boxwood, and other shrubs also are damaged. Infested shrubs lose their color and drop their leaves prematurely, often in a very short time period. Treat in late April, with a repeat application about one week later.
Boxwood Mite. Found only on boxwood, this mite is a pest of both European and American boxwood varieties. Japanese boxwood is less susceptible. Leaves of infested plants appear to be pin pricked or scratched with tiny white or yellow marks. This mite is active only in the spring. Treat in early May and make a repeat application in about one week.
Two-Spotted Spider Mite. More than 180 host plants have been recorded for this species. Phlox, hollyhock, primrose, violet, rose, and other flowers are attacked, as are many garden vegetables, brambles, fruit trees, houseplants, and most greenhouse plants. When mites are numerous, fine webbing is often visible where the leaves join the stems. With magnification, two dark spots can be seen through the otherwise pale green bodies of these mites; thus, the name two-spotted spider mite. Treat where and when mites are found; repeat applications may be necessary.
Other common spider mites are the European red mite, clover mite, hickory spider mite, linden spider mite, elm spider mite, honeylocust spider mite, willow spider mite, oak red mite, and the maple spider mite.

Control: Certain lady beetles, thrips, and predaceous mites provide some degree of natural control for spider mite populations, but usually only after mite infestations have become destructive. Natural enemies help keep mites at low levels when conditions are unfavorable for the mites. Most insecticides are not effective on mites and some, especially carbaryl (Sevin), result in increased mite damage by killing their natural enemies. During the winter or early spring control can be obtained with a dormant oil application in most cases. During the summer or growing season use a miticide or insecticidal soap as suggested in Virginia Pest Management Guides, available through your local Extension agent. Always read the label before applying any pesticide.