



Spider Mites

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Introduction

Spider mites (Family Tetranychidae, Order Acari) are not insects; they are more closely related to spiders, harvestmen (daddy longlegs), and ticks. While insects have six legs and three body parts, spider mites have eight legs and a one-part body (Fig. 1). Spider mites also lack wings, antennae, and compound eyes. Individual spider mites are almost microscopic, yet they can cause serious damage when their populations build into large numbers. Dozens of species attack shade trees, shrubs, and herbaceous plants.



Figure 1. A spider mite (Eugene E. Nelson, Bugwood.org).

Life History

The twospotted 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 on leaves or bark as tiny round eggs that hatch in March or April (Fig. 2). First-stage larvae have only six legs, but they become eight-legged nymphs after molting. Both larvae and nymphs resemble the adults.



Figure 2. Spider mite eggs at the base of a conifer needle (USDA Forest Service, Intermountain Region 4, Bugwood.org).

Development time from egg to adult varies from 5-21 days depending on the species of mite and the weather. Under optimal conditions, spider mite populations can build up very rapidly and many generations can occur each year.

Spider mites on conifers and broad-leaved evergreens are cool-weather pests. They feed heavily and reproduce quickly in spring and fall. Their activity is low during the hot part of summer, although their 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 twospotted mite thrives whenever conditions are favorable for plant growth.

Damage

Spider mites have a pair of needle-like mouthparts called stylets, which are used to rupture leaf cells. A feeding spider mite pushes its mouth into the torn tissue and draws up cell contents. Small patches of cells are killed, resulting in a stippling or fine flecking on the upper surface of leaves, which gives the leaves a "sandblasted" appearance (Fig. 3). On heavily infested plants, the foliage will become

bronzed, bleached, yellow, or gray (Fig. 4). Left untreated, infested plants lose vigor, become progressively thinner, and may eventually die.



Figure 3. Spider mite damage on boxwood leaves (David L. Clement, University of Maryland, Bugwood.org).



Figure 4. Bronzing of honeylocust leaves due to honeylocust spider mite feeding (Whitney Cranshaw, Colorado State University, Bugwood.org).

Recognizing the Damage

Spider mite damage to foliage is similar on all host plants: a fine stippling that progresses to an overall bronzing of the leaves. Eggs, empty eggshells, and cast skins are often visible on the underside of damaged leaves when viewed with a hand lens. Spider mites leave a fine silk webbing on heavily infested foliage (Fig. 5). 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. Mite damage can sometimes be confused with thrips or lace bug damage. Plants with feeding damage should be examined closely to

determine if mites are the cause of the damage, or if another pest species is present.



Figure 5. Twospotted spider mites in their webbing on a host plant (David Cappaert, Bugwood.org).

Major Pest Species

Spruce Spider Mite This serious pest is found only on conifers, hemlock, arborvitae, spruce, fir, juniper, and, occasionally, pine (Fig. 6). These mites produce a fine webbing, which collects dust and dirt, on the foliage where it feeds. Infested plants lose their color and the foliage becomes thin as severely damaged needles drop prematurely. Insecticidal soap can be applied in late April or early May when plant growth has begun and mites are active. Repeat if needed in September or October. Dormant oil applied in late winter will smother overwintering eggs and will not discolor foliage developing later if applied before bud break. Also see [Spruce Spider Mite \(VCE 444-235\)](#).



Figure 6. Spruce spider mite with numerous eggs (Ward Strong, BC Ministry of Forests, Bugwood.org).

Southern Red Mite This is a common and serious pest attacking 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 to early May when damage is first seen. Repeat if needed in September or October.

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 (Fig. 3). This mite is active only in the spring. Treat in early May and repeat the application when necessary. Also see [Insect and Mite Pests of Boxwood](#).

Twospotted 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 (Fig. 5). With magnification, two dark spots can be seen through the otherwise pale bodies of these mites; thus, the name twospotted spider mite (Fig. 7). Treat when and where these mites are found; repeat applications may be necessary.



Figure 7. Twospotted spider mites with eggs on a damaged leaf (David Cappaert, Bugwood.org).

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 already become destructive. Natural enemies help keep mites at low levels when conditions are unfavorable for the mites. Predatory mites can be purchased from commercial laboratories for release on infested plants. These commercially-raised predatory mites are usually intended for control of twospotted spider mites and may not be effective against other species of pest mites. Confirmation of the pest mite species is recommended before releasing predatory mites.

Most insecticides are not effective on spider mites and some, especially carbaryl (Sevin), result in increased mite damage by killing the mites' natural enemies.

In most cases, control can be obtained with a dormant oil application in the winter or early spring, before new growth begins. During summer or the growing season, use a miticide or insecticidal soap as suggested in the [Home Grounds and Animals Pest Management Guide \(VCE 456-018\)](#). Always read the label before applying any pesticide.

Revision

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2022

444-221 (ENTO-502NP)