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Spider mites – Characteristics and control

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Quick Facts

Spider mites are common around the home and are most damaging during hot, dry periods.

Mites damage plants by sucking out their juices.

Use only garden sprays containing a miticide to control mite infestations. Common insecticides do not affect mites but do kill insects that feed on mites.

Spider mites are common pest problems on almost all plants grown in Colorado. Spider mites are very small, often difficult to see with the unaided eye. Colors range from red and brown to yellow and green, depending on the species of spider mite and seasonal changes in appearance. Spider mites are classified as arachnids, which includes the spiders, ticks, daddy-long-legs and scorpions.

Spider mites feed by sucking plant juices with piercing mouth parts. Usually mites feed on the underside of the leaves, out of direct sunlight. The area surrounding the feeding site often is lightly flecked, giving the plant a speckled appearance. During heavy infestations, the foliage will take on a general discoloration (bronzing). Mite damage often is associated with premature drop of infested leaves and needles. Problems with mite injury are most common at hot, dry sites.

Webbing often is produced by spider mites during high populations and is particularly common with the two-spotted and spruce spider mites. Webbing provides some protection for the mites and their eggs from extreme temperatures and from natural enemies. (Note: Often, webbing by

spiders and cottonwood fluff is confused with spider mite webbing.)

History and Habits

Several pest species of spider mites occur in Colorado. The **two-spotted spider mite** (Figure 1) is the most widespread, being found on almost all

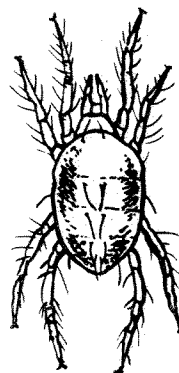


Figure 1:
Two-spotted mite.

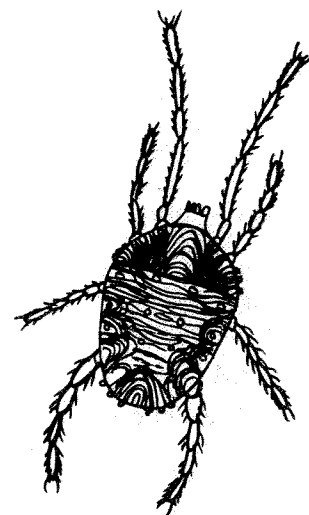


Figure 2:
Clover mite.

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plants and occurring as serious pest problems on indoor and outdoor plants (beans, raspberries and roses). **Spruce spider mites** commonly damage evergreens such as juniper and spruce. **Honeylocust spider mites** can be found throughout the state on honeylocust, particularly those planted along roads and in parking lot areas. **Clover mites** (Figure 2) occur as periodic pests of lawns and as a nuisance pest when they move into homes.

Most spider mites overwinter as the adult stage, hidden in protected areas such as in bark cracks or under debris around gardens. During this dormant stage many mites turn a bright red color, leading to their name "red spider" mites.

As temperatures warm the mites become active and begin to feed. Spider mites develop in relation to temperature; during warm periods they may become full grown in as little as a week. Full-grown females can produce over a dozen eggs per day for 1 to 2 weeks. The fast development rate and high egg production often can lead to extremely rapid increases in mite populations.

Hot, dry conditions often are associated with spider mite outbreaks for several reasons. Most mites feed more in hot weather, which accelerates their development and egg production. Dry conditions may inhibit the effectiveness of spider mites' natural enemies, which are often less adapted to harsh conditions. Finally, water-stressed plants do not tolerate mite feeding injury well.

Clover mites differ from other spider mites by being a "cool-season" species that occurs in peak numbers during spring and autumn. At high temperatures, when other spider mites become active, clover mites produce dormant eggs.

Control

Biological controls. A wide variety of organisms feed on spider mites and often provide a high level of natural control. One of the more common of these biological controls is a very small species of

black ladybird beetle, the spider mite destroyer (*Stethorus*), that feeds only on spider mites. Also important are various predator mites (*Amblyseius*, *Mesoseiulus* and others) that feed on mite eggs and young spider mites. Minute pirate bugs and predatory thrips are among the other natural mite controls.

One common reason for spider mite outbreaks in yards and gardens is the use of insecticides that destroy mite predators. Carbaryl (Sevin) is devastating to the natural controls and can greatly contribute to mite outbreaks. Malathion, an insecticide that often lists control claims for spider mites, also is damaging to spider mite biological controls and can aggravate mite problems.

Water management. Adequate watering of plants during dry conditions can limit the importance of drought stress on spider mite outbreaks. Periodic hosing of plants with a forceful jet of water can physically remove and kill many mites as well as remove the dust that collects on foliage and interferes with mite predators. Disruption of the webbing also may delay egg-laying until new webbing is produced.

Spider mite control on houseplants can be particularly frustrating. When attempting controls, treat all susceptible houseplants at the same time. Trim, bag and remove heavily infested leaves. Discard severely infested plants. Hose small plants in the sink or shower. Wipe leaves of larger plants with a soft damp cloth. Reapply these treatments at 1 to 2 week intervals until mite populations are eliminated.

Chemical controls. Chemical controls of spider mites generally involve pesticides specifically developed for spider mite control (miticides/acaricides). (See Table 1.) Few insecticides are effective for spider mite control. Regardless of the pesticide used, mite control can be difficult since resistance to pesticides is widespread, particularly among the two-spotted spider mites.

Table 1: Characteristics of common spider mite pesticides.

Common Name	Trade Names	Remarks
dicofol	Kelthane, Isotox insect killer, Red spider spray, etc.	A standard for spider mite control found in a variety of products. Some reduced activity at high temperatures.
soap	M-Pede, Safer's Insecticidal Soap, etc.	Strictly contact action with no residual effects. Best used during periods when drying is slowed. Minimal effects on most beneficial species, although predatory mites are susceptible.
sulfur	Various	Sold for control of fungus diseases, sulfur also has activity against mites. Plant injury may result during high temperatures.
acephate	Orthene, Isotox (systemic)	An insecticide with some activity against most spider mites, except resistant strains.
dimethoate	Cygon, Dimethoate (systemic)	An insecticide with some activity against most spider mites, except resistant strains. For use on a limited number of plants.
avermectin	Avid (miticide)	Highly effective, for commercial use only. Primarily for greenhouses and nurseries; landscape use questionable.
bifenthrin	Talstar	For commercial use only. Landscape uses are based on state 24C label. A pyrethroid insecticide with good activity against most spider mites.
lambda-cyhalothrin	Scimitar	For commercial use only. A pyrethroid insecticide with good activity against most spider mites.

Carefully read and follow all label instructions before purchase and use of spider mite sprays. Also note that most spider mite pesticides can only be used on landscape plants and are not for use on fruit and vegetable crops.