

Mites on Landscape Plants

Includes: *Tetranychus spp.* (two spotted spider mite and relatives), *Panonychus ulmi* (European red mite), *Oligonychus ununguis* (spruce spider mite), *Eurytetranychus buxi* (boxwood mite) and *Byrobia rubrioculus* (brown mite)

Host/Site

A variety of species of spider mites and other mites can be pests on ornamental landscape trees and shrubs such as arborvitae, azalea, bamboo, boxwood, cotoneaster, fir, flowering fruits (apricot, cherry, crabapple, and peach), fuschia, golden chain, hawthorne, juniper, linden, mountain ash, pine, rose, skimmia, spruce, and yew.

Identification/appearance

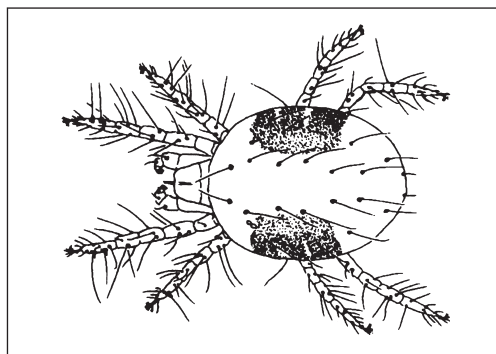
Most mites are very small, and a hand lens can be helpful for identification. Mites have eight legs (except as very young larvae, when they have only six) and are arachnids rather than insects. They do not have wings. Colors can include white, yellow, green, reddish, or black. Several mites in the family Tetranychidae can be distinguished by prominent spots on either side of the body. Mites are often found on the undersides of leaves. Associated symptoms can include yellowing or bronzing of leaves (especially on fruit trees) or needles, stippling or streaking of upper leaf surfaces (boxwood and peach), or presence of webbing (e.g. on cotoneaster and bamboo). Gall mites cause distorted, twisted, or blistered growth.

Life Cycle

Most spider mites undergo a life cycle with five stages: egg, larva, protonymph, deutonymph, adult. There are many overlapping generations per year, and in warm weather a generation can take place in a week or less. In warm areas, reproduction can be continuous. In colder areas and on plants that drop their leaves, pests can as eggs on host plants or as adults in ground litter and begin feeding and laying eggs when the weather warms up.



Example of probable mite damage



Tetranychus Urticae or the two-spotted spider mite

Spider mites are favored by hot, dry conditions. Plants under drought stress are especially susceptible, as are plants adjacent to dusty roads. Female mites will leave and disperse to other plants as foliage quality deteriorates. Populations usually peak and then decline in late summer.

Natural Enemies

There are many types of predatory mites that attack pest mites. Most are members of the family *Phytoseiidae*. Predatory mites move and reproduce rapidly, enabling them to keep pest levels low. If destroyed by broad spectrum insecticides, however, predatory mites can take time to rebuild and pest populations can soar in the interim. Predatory mites are abundant in the upper layers of soil and in moss, humus, and animal manures, as well as on leaf surfaces and in aquatic systems. Predatory mites are generally fast moving. Some types of predatory mites can also be purchased. When examined with a hand lens, predatory mites look much alike, with a glassy or shiny white-gray to yellow body, though some may appear red. In managing pest mites, it is important to protect predatory mites as much as possible. A number of insects such as lacewing larvae also prey on mites.

Although some predators can be purchased and released, often the best strategy is to create conditions favorable for naturally occurring predators, such as avoiding dusty conditions and the use of broad spectrum pesticide sprays.

(continued/over)



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Monitoring

A hand lens is useful for monitoring. Look at the undersides of plant leaves to check for mites and associated damage, such as stippling, yellowing, or spotting (white or yellow). Tapping a small branch tip firmly against a sheet of white cardboard will dislodge mites, which are more visible on the paper.

Action Threshold

Action thresholds will vary depending on the variety and value of the plant, its susceptibility to mite damage, and the aesthetic standard required in the landscape. Because so many kinds of plants suffer mite damage, it is difficult to give hard and fast rules.

Cultural/Physical Controls

The primary physical control for mites is a strong water spray. Spray the undersides of affected leaves at least three times—3 days in a row or every other day.

Some plants are so frequently damaged by mites that the most practical strategy may be to remove them and substitute less susceptible varieties such as the following:

For	Substitute
Cotoneaster horizontalis	<i>Cotoneaster dammeri</i> ; <i>C. microphyllus</i> ; Prostrate rosemary
Skimmia japonica	<i>Sarcococca ruscifolia</i> ; <i>Mabonia repens</i> ; <i>Mabonia nervosa</i> ; <i>Gaultheria shallon</i> (salal); <i>Kalmia latifolia</i> (mountain laurel); <i>Viburnum davidii</i> ; Japanese Holly; <i>Paxistima myrsinites</i> (Oregon Boxwood)
Spruce, juniper (depends on size wanted)	<i>Taxus brevifolia</i> (western yew); <i>Tsuga heterophylla</i> (western hemlock); <i>Tsuga mertensiana</i> (mountain hemlock); <i>Pinus contorta</i> (shore pine); <i>Pinus mugo</i> (mugo pine); Yew; Lawson Cypress; Leland Cypress
bamboo (for an evergreen hedge or screen)	larger ornamental grasses; taller euonymus; hollies; <i>Ligustrum</i> (Privet); <i>Miscanthus spp.</i> ; Nandina
hawthorn	disease resistant crabapples e.g. Malus 'Evereste' <i>Cornus kousa</i> (Kousa dogwood); <i>Franklinia alatamaha</i> (Franklin tree); <i>Syrax japonica</i> (Japanese Snowbell); Mountain Ashes

Damage from mites becomes noticeable in most cases due to other stresses, in particular drought. Be sure adequate water is supplied to the landscape. Some plants may prefer overhead irrigation to increase humidity. Low soil organic matter can also cause stress, especially in combination with poor watering. Add compost and fertilize appropriately.

Biological Controls

Although predatory mites can be purchased and released, in most cases they are present naturally and the primary action is to protect them by avoiding broad-spectrum chemicals.

Chemical Controls

The least-toxic chemical controls widely available for mite control include insecticidal soap and horticultural oil. Insecticidal soap can be used on most mite infestations of ornamental plants. Repeat applications may be necessary. It may be less effective in cases where webbing is present unless a pressure spray can be used to penetrate the protective webbing.

Horticultural oil can be used on mites that overwinter as eggs on fruit trees during dormant or delayed-dormant season, typically February-April. (Note: the two spotted spider mite overwinters off the host, so dormant spray is not effective for it.) Summer horticultural oils have been proven to be effective against mites without much effect upon populations of predatory mites. Read the label carefully to avoid phytotoxicity.

The peach silver mite can be controlled with wettable sulfur.

Broad-spectrum insecticides should be avoided if possible for mites because they can kill beneficial predatory mites, possibly leading to a resurgence of the pest. Spider mites may be resistant to some pesticides. Spider mites exposed to carbaryl in the laboratory have been shown to reproduce more rapidly than untreated populations.