Spider Mites

O & T Guide [O-#08]

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Spider mites are very common and often very numerous, nearly microscopic pests of orchard trees, field crops, nursery and landscape plants, especially in hot, dry weather.

Metamorphosis: None
Mouth Parts: Paired, piercing
Pest Stages: Larvae, nymphs, adults

Typical Life Cycle: Eggs hatch in 3-5 days during the highest summer temperatures. Females develop from fertilized eggs while males develop from unfertilized eggs. → Six-legged Larvae hatch and begin feeding, molting in about a week to the First 8-legged Nymph stage. Feeding continues for a week when it molts to the second 8-legged Nymph which continues feeding and developing for another week. →Adults have patterns of plates on their bodies that distinguish them from immatures; in most species, plate patterns distinguish the sexes, also. Development time from egg to egg may require about 3-4 weeks, more or less, depending upon temperature. Live host plants are always required for food. All life stages are likely to be found together.

Description of Life Stages:

Egg: spherical, barely visible to the naked eye but still about ½ the length of the female's body, white or various pale colors, depending on species

Immatures: Both nymph stages are 8-legged, resembling small scale adults. All three stages have two fused body regions that, together, are round in larvae to oval in nymphs. Most immatures are off-white to yellowish and are slow moving.

Adult: Adults are larger (to about 1.5mm long), oval, 8-legged and slow moving. Many species have 1-2 pairs of darker blotches on either side of the body. Plates on the adult's body indicate the maturity and sex of the individual. Adults and immatures spin fine silk, camouflaging the infestations and allowing dispersal. Adults of many species are off white; others are pale orange, yellow or greenish.

Two-spotted spider mite, *Tetranychus urticae*. Note the fine silk filaments that suspend the mite over its plant host. Photo: David Cappaert, , www.forestryimages.org

Habitat and Hosts: Some widely distributed species such as two-spotted spider mites, have hundreds of known

hosts, numerous generations annually and are active year long in greenhouses. Others, such as spruce spider mite, are more restricted in distribution and hosts, but still have several generations annually. Spruce spider mites are most damaging and most numerous on their conifer hosts in cooler weather of spring and fall.

Damage: Most spider mites feed on foliage or fruits of their hosts; their minute paired piercing mouth parts puncture individual plant cells, causing their death and discoloration. Damaged vegetation may appear dry, dull green, bronze or reddish. Distorted growth or loss of foliage, buds, flowers, fruit and even entire young plants is common. Spider mites usually can be found wherever plants are stressed or crowded, indoors or out.

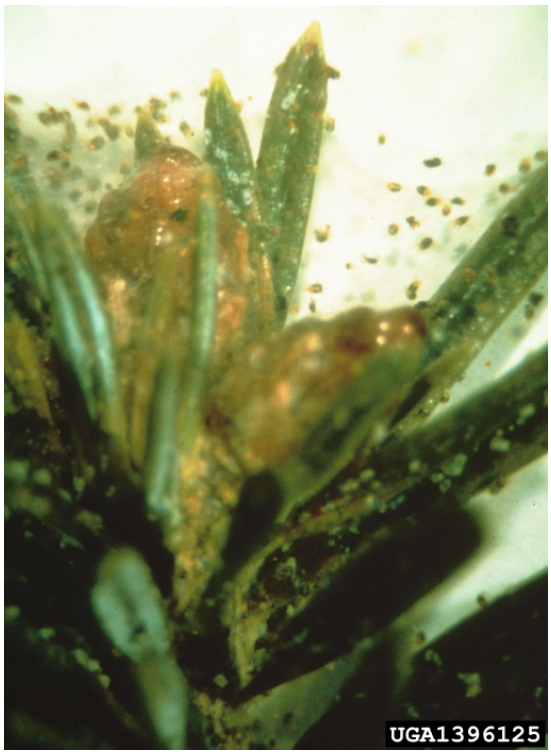
IPM Notes: Since they are quite small and often occur on the undersides of host foliage, magnification may be needed to confirm presence of spider mites, particularly in low level infestations. Under outbreak conditions, spider mites may mass on the upper parts of host plants where silk webbing may be especially visible. Handling infested plants can cause intense itching.

Spider mite populations are favored by hot, dry growing conditions and plants under stress. They are also favored by dust accumulations on foliage. Alternatively, spider mite populations are suppressed at least temporarily by rain or by forcefully washing foliage with water.

Because spider mites have such short generation times and are so prolific, insecticides (or acaricides) should be used infrequently and very judiciously to prevent development of pesticide resistance and resurgence. Insecticidal soap mixed with horticultural oil may be an effective control against mite eggs and newly hatched nymphs. Some of these materials are tolerated by the spider mites but are very hazardous to the tiny natural enemies of spider mites including other predatory mite species, lady beetles and their larvae, green lacewing larvae, and a variety of predatory bugs.

Dormant oils are sometimes used on fruit trees or deciduous shade trees in the winter to control overwintering stages of pests such as spider mites. These oils coat the eggs or free-living stages of these pests, killing by contact or asphyxiation.

Spider mite damage on a broadleaf host plant. Note the dry and “sanded” appearance of the foliage, evidence of individual plant cell deaths caused by spider mite feeding. Photo: Clemson University - USDA Cooperative Extension Slide Series, , www.forestryimages.org



Severe infestation of spruce spider mite, *Oligonychus ununguis*, on a spruce twig. Note the mites on the webbing. Photo: USDA Forest Service - Northeastern Area Archives, USDA Forest Service, www.forestryimages.org