



## Spruce spider mite

*Oligonychus ununguis*

Order Acari, Family Tetranychidae; spider mites

Native pest

**Host plants:** Blue spruce, Norway, and white spruce are preferred, but arborvitae, cedar, cryptomeria, dawn redwood, Douglas-fir, hemlock, juniper, larch, and pine, are also susceptible.

**Description:** Adult mites are approximately 0.5 mm long with eight legs. They are dark green when young but turn darker green as they mature. Protonymphs are smaller and lighter. Eggs are reddish-orange and oval to circular.

**Life history:** This is a cold tolerant spider mite not active in hot summer temperatures. Eggs hatch in April and May. Feeding damage may be first observed after feeding started. Activity eases in summer with the arrival of 90 degree F temperatures and resumes with cooler weather in fall. There are several generations a year.

**Overwintering:** Eggs on bark and needles.

**Damage symptoms:** Mite feeding causes color changes in needles, giving them first a mottled appearance, then turning needles yellow and finally bronze. Damaged needles may drop prematurely. Severe infestations can cause loss of foliage, twig dieback, even branch dieback. Host trees may be killed, if extremely heavy infestations occur when they are stressed.

**Monitoring:** Eggs hatch when PJM rhododendron blooms in mid April (Herms). Look for fine stippling turning into bronzing of needles beginning in June. To confirm mite presence, hold a sheet of white paper under a branch and tap the branch to dislodge mites. Use a hand lens to monitor branches for mites and for overwintering eggs. Look also for natural enemies.

**Chemical control:** Spraying is not recommended unless mites are numerous, and natural enemies are not present. Use dormant oil sprays, if populations were heavy in the fall. If natural enemies are present in the growing season and mite populations are large, use summer oil or insecticidal soap. During the growing season, long-lasting, new miticides (clofentazine, bifenazate, hexygon) are available for commercial use that are less toxic to beneficials. Applications of 2% oil or a steady stream of water are still good options for homeowners. Pyrethroid miticides can be helpful rescue treatments late in the season.

**Biological control:** Natural predators of mites include minute pirate bugs, lacewings, predatory mites, lady beetles, the rove beetle *Oligata oviformis*, and predaceous midges.

**Plant mortality risk:** Medium

**Biorational pesticides:** abamectin, bifenazate, clofentazine, hexythiazox, horticultural oil, insecticidal soap

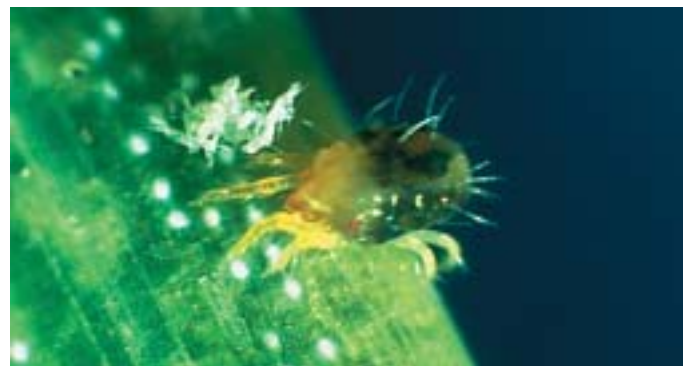


Damage to blue spruce in June caused by spruce spider mite; note discoloration on the older needles. (234)

Photo: Cliff Sadof



Damage to dwarf Alberta spruce caused by spruce spider mite. (232) Photo: John Davidson



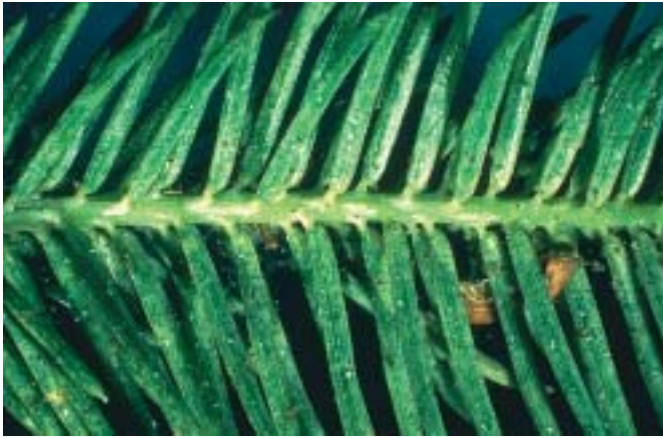
Spruce spider mite adult. (235)

Photo: John Davidson



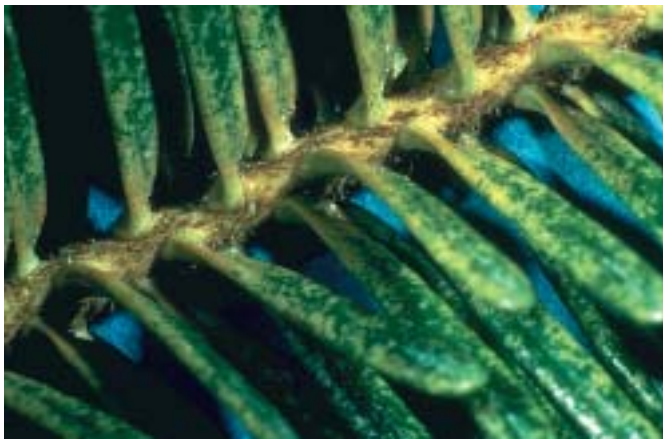
## Spruce spider mite (continued)

**Conventional pesticides:** bifenthrin, chlorpyrifos (nursery only), deltamethrin, dicofol, fenpropathrin, fenbutatin oxide, lambda-cyhalothrin, pyridaben



Stippling damage, white shed skins, and spruce spider mites on spruce not protected by an oil spray when mites began to build up. (233)

Photo: John Davidson



Close-up of stippling damaged caused by the spruce spider mite. (234)

Photo: John Davidson



Spruce protected by horticultural oil which killed spruce spider mites and prevented damage. (238)

Photo: John Davidson



Overwintering spruce spider mite eggs on hemlock. (236)

Photo: John Davidson



Beating technique for sampling spruce spider mites on dwarf conifers in a nursery. (237)

Photo: Charles Cornell