



Spruce Spider Mite

Authored by Eric Day, Lab Manager, and Theresa A. Dellinger, Diagnostician, Insect ID Lab; and Alejandro Del-Pozo, Assistant Professor and Extension Specialist, Department of Entomology, Virginia Tech

Introduction

Spider mites (Family Tetranychidae; Order Acari) are not insects; they are more closely related to spiders, harvestmen (also called “daddy longlegs”), and ticks. The spruce spider mite, *Oligonychus unguis* (Jacobi) (Fig. 1), lives in all areas of Virginia and is widely distributed throughout the temperate regions of the United States and Canada. This mite attacks spruce, arborvitae, juniper, hemlock, pine, Douglas fir, Fraser fir, and larch, among other conifers.



Figure 1. Spruce spider mite beside numerous eggs (Ward Strong, BC Ministry of Forests, Bugwood.org).

Life History

Overwintering eggs are laid on the undersides of twigs and needles (Fig. 2). Egg hatch occurs in mid-April and several generations of mites may occur before hot summer weather halts mite activity in late June. Mite activity resumes in late September and continues until winter weather arrives in November. One generation may take as few as 10-14 days, and 5-8 generations occur annually. Mites can disperse on wind currents, by adults crawling from tree to tree, and by transport on nursery stock.

Spruce spider mites are cool-weather pests. They feed heavily and reproduce quickly during spring and fall. Their activity is low during the heat of summer, although that is when their damage is easily

observed compared to other nearby healthy plants that are green and growing normally. While spruce spider mites are less active during the summer, hot, dry weather predisposes trees to attack by the mites when cooler weather returns.



Figure 2. Spruce spider mite eggs at the base of conifer needles (USDA Forest Service, Intermountain Region 4, Bugwood.org).

Damage

Spruce 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 the cell contents. Small patches of cells are killed, resulting in a stippling or fine flecking on the upper surface of the needles (Fig. 1). Feeding damage increases in intensity until heavily infested plants lose their color. The foliage thins and becomes sparse as severely damaged needles drop prematurely (Fig. 3). Damage is most severe in lower crowns of large trees. Seedlings and small trees may die, and heavy infestations of this mite may kill even large trees.

Spruce spider mites spin a webbing of fine silk around twigs and needles that becomes more abundant as the season progresses (Fig. 4).



Figure 3. Needles damaged by spruce spider mite (USDA Forest Service, Northeastern Area, Bugwood.org).

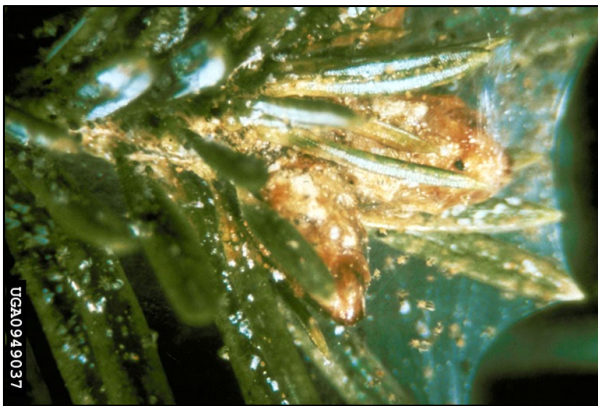


Figure 4. Spruce spider mites and their webbing on a twig (USDA Forest Service, Intermountain Region 4, Bugwood.org).

Cultural Control

Maintaining healthy, vigorous plants is an important preventive measure for keeping populations of all spider mites low. Predacious mites, lady beetles, thrips, and true bugs aid in controlling spruce spider mites. Avoid growing conifers near hot pavement, sidewalks, or brick walls that retain heat.

Chemical Control

Backyard Plantings Dormant oil applied in late winter will smother overwintering eggs and will not discolor foliage developing later if applied before bud break. Dormant oil may damage tender new growth if applied in late spring. Dormant oil is also sold as horticultural oil and superior oil. There are other versions as well, but all share petroleum oil as

the active ingredient. Use insecticidal soap in late April or early May when plant growth has begun and mites are active. Repeat if needed in September or October. Thoroughly wet all foliage and stems with a full coverage spray.

Commercial Plantings Spray with a miticide in early May and/or early fall when high spider mite populations are likely. Consult the most recent [Horticultural and Forest Crops Pest Management Guide \(VCE 456-017\)](#) for specific compounds and formulations, and scouting techniques for spruce spider mites in field plantings. Read the label of the selected miticide carefully before application. Misuse of pesticides will kill the natural enemies of the mites, resulting in dramatic and costly increases in mite populations.

References

- Johnson, W.T., and Lyon, H.H. 1988. *Insects That Feed on Trees and Shrubs*. 556 pp. Cornell University Press. Ithaca, NY.
- Marshall, V.G. 1986. Spruce spider mite in British Columbia. Canadian Forest Service, Forest Pest Leaflet No. 33.
- Weidhaas, J.A. 1989. Insects. pp. 123-136. In J.E. Johnson (ed.). *Christmas Tree Production Manual*. Virginia Cooperative Extension publication 420-075. Blacksburg, VA.

Revision

Theresa A. Dellinger, April 19, 2022.

Visit Virginia Cooperative Extension: ext.vt.edu

Virginia Cooperative Extension is a partnership of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and local governments. Its programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, military status, or any other basis protected by law.

2022

444-235 (ENTO-503NP)