

Hemlock Rust Mite

Nalepella tsugifolia Keifer

Acari: Tetranychidae

Sidebottom, J. R. 1995. Rust mites in Christmas trees. Christmas Tree Notes. Raleigh, NC: *N.C. Agricultural Extension Service, North Carolina State University*; 2 p.

(http://www.ces.ncsu.edu/nreos/forest/xmas/ctn_034.html)

Objective: To develop a scouting program for *N. tsugifolia* that aids in control decision-making for Christmas tree plantations.

Abstract: The hemlock rust mite, *Nalepella tsugifolia* Keifer, is a frequent springtime problem on hemlock, *Tsuga* spp., eastern white pine, *Pinus strobus* L., and Fraser fir, *Abies fraseri* L., grown in the foothills of western North Carolina. Heavy feeding causes premature needle loss. Infested needles have a dusty, rust-colored appearance that reduces the aesthetic quality of ornamental and Christmas trees.

A survey method was developed to determine if *N. tsugifolia* populations were high enough to warrant control measures. If 80% of all shoots sampled and at least eight mites are present on a single needle, then control measures were warranted. The action threshold can be modified depending on the grower's costs and tree values.

Sampling Procedure: To scout for *N. tsugifolia*, select 24-49 trees per hectare, concentrating on trees that were damaged the previous year. If no previous damage is evident, then choose trees at random. On white pine, sample needle cluster on the upper third of the tree in the southeast aspect where *N. tsugifolia* is found most often. Mites are usually concentrated near the follicle. In Fraser fir, examine shoots of current growth in the upper whorls and some from the lower ones. Scan both the upper and lower surfaces of the needles with a hand lens. If the buds have opened recently, then examine both the new and previous year's growth.

Generally, if 80% of the shoots are infested and if there are at least eight mites present on a single shoot, then control is warranted.

Notes: Populations can increase quickly during favorable weather conditions. Therefore, scout weekly during critical periods in the spring. If the action threshold is not reached by early June, then sampling may be discontinued. Continue sampling for *N. tsugifolia* when activity resumes in the fall.