



# UI Extension Forestry Information Series

## The Case of the Deformed Trees *Yvonne Carree Barkley*

Over the years, we had our share of solid tree problems. In many of our still not found answers to. In *The Case of the Deformed Trees*, a particular pattern began to emerge, leading us to believe that the deformation of conifers across Idaho were related. In a UI county faculty member in south Idaho called a problem from a local nursery. Their Colorado spruce had swollen terminal buds that had died and looked like “asparagus tips”. Another landowner across the state reported spruce with “bent tips, needles yellowing”. That’s easy, we thought, it’s a cast or a watering problem, but the trees didn’t respond to treatment. In 1995, the same nursery called with a problem on pine – the candles would elongate in the spring and then turn brown. They became resin coated and crooked, with some pine browning. But there were no entry and exit holes, evidence of larvae, challenging our diagnosis of European shoot moth. Over the next few years, reports of swelling, distortion, and medusa-like growth continued to come in from all over the state. In the fall of 1999, the same symptoms were reported in several locations on Douglas fir in Whitman County, Washington. Once again, information was gathered and samples taken and examined. All of these cases had a solid diagnosis – we came up with physiological stress, winter kill, dormancy requirements not being met.

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On pine, *Eriophyid* mites initially congregate between the needles (where Steve found them), but as population increase, they will cover the entire base of the needle under the sheath. Eventually, they destroy the entire base of the needle through feeding. Little is described, or even known, of *Eriophyid* mites that parasitize other species of conifers such as Colorado blue spruce and Douglas fir, although mention of one species of *Eriophyid* mite is reported on Douglas fir in coastal California and Oregon. A newsletter from Minnesota reported the same problem on Black Hills spruce, white spruce, and Colorado blue spruce. Elsewhere in the continental U.S., they have been reported on Douglas fir, most species of true fir, hemlock, juniper, pine, and spruce.

I have suspected *Eriophyid* mites through the years, but was never able to find even one under my scope (it's not even close to 40x power). Now that we have one confirmed diagnosis – which has led us to reopen the *Case of the Deformed Trees* – we are in the process of pulling records of unidentified problems

from the past on trees across the state of Idaho. Landowners and county faculty will be contacted and asked to collect samples this summer. We are fairly confident that we will find *Eriophyid* mites on several of our unsolved mysteries.

The good news is, we have made a positive identification. The bad news is, standard treatments for mites, which is dormant oil application before bud break in the spring, doesn't seem to be a good control method. A systemic insecticide might work, but there are no products registered for use on conifers for this particular insect. A systemic insecticide trial is being developed by UI researchers and private industry to look for a new product that may control these mites on conifers.

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