

PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

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Weekly newsletter compiled by Sarah Pickel, PA Department of Agriculture.

This week's report includes scouting information from: Jim Fogarty (Halabura Tree Farm), Karen Najda (PDA), Susan Newhart (Arcadia Trees), Linda Signarovitz (scouting consultant), Brian Schildt (PDA), and Cathy Thomas (PDA).

Growing Degree Day totals as of Tuesday, May 25th, were 592 in Elizabethtown, Lancaster County and 575 in New Cumberland, Cumberland County. As of Monday, May 24th, there were 301 GDD in Montrose, Susquehanna County. Regional GDD totals collected last Thursday, May 20th in Northwest PA were as follows: 356 GDD in Clarion County, 302 in Crawford County, 337 GDD in the Millcreek area of Erie County, 275 in the Waterford area of Erie County, and 415 GDD in Mercer County. [Northwest data courtesy of Ruth Benner, Extension Educator – Penn State Cooperative Extension, Erie County.]

In Dauphin, Schuylkill, and York Counties this week, Bagworm larvae, or caterpillars, began to emerge from the overwintering bags. These larvae were easily spotted by the silk threads by which they exited the bags. Bagworm can be found on all conifers, but Arborvitae, Colorado blue spruce, Douglas-fir, and Eastern white pine seem to be favorite hosts. The young larvae will move to the new foliage and begin to feed, causing brown, patchy areas on the needles. [Fig. 1] During this time, they will use the needle tissue to start constructing the protective bags that cover their bodies. As the larvae mature, they will consume whole needles and may heavily damage the new foliage. For insecticides to be most effective, larvae should be targeted when they are still small. Growers can select a traditional insecticide or a *Bacillus thuringiensis* (Bt) product, which will preserve beneficial insects. The 2010 *Insecticides and Miticides Update for PA Christmas Tree Pests* can be found at the site:

<http://ento.psu.edu/extension/christmas-trees/scouting-reports>.

The early crawlers of Pine Needle Scale were found this week in Dauphin and Schuylkill Counties on Eastern white pine. The



Figure 1: Young Bagworm larvae and damage [Sandy Gardosik, PDA]



Figure 2: Pine needle scale adults and crawlers [Rayanne Lehman, PDA]

white, oblong shaped scale covers can be found on the needles of pines and occasionally other conifers. The reddish-brown oval crawlers will be found lined up on the needles, moving away from the mother scales. [Fig. 2] Observing pine needle scale populations in Dauphin and Schuylkill Counties has shown that the majority of female scales still have eggs underneath with no sign of crawlers yet. Growers should wait to apply an insecticide or horticultural oil until a larger number of crawlers are out on

the needles. Because the crawler emergence is staggered, a second application should follow one week later.

On Fraser fir in Dauphin, Schuylkill and York Counties, eggs of *Cryptomeria* scale were found under a few of the mature female scale coverings. *Cryptomeria* scale crawlers will typically hatch 10 to 14 days after the eggs are laid. Like many other pest occurrences this year, this emergence will be somewhat earlier-than-usual. Growers who typically wait for the 2nd or 3rd week of June to begin looking for crawlers could be too late if they wait that long this year. The most common hosts of *Cryptomeria* scale are the true firs, but Douglas-fir, spruce and pine are also hosts of this pest (although less commonly pine). The scale will be on the lower branches of the tree, close to the trunk. This pest is an armored scale pest, which means it is covered



Figure 3: Female scale, uncovered, with eggs and covered scale [Sandy Gardosik, PDA]

with a protective covering, and feeds on plant juices in one place on the undersides of the needles. To locate the population, look for yellow speckling on the upper surface of the needles, which is caused by their feeding. Using a hand lens to look at the whitish-yellow scales, growers can scrape away the scale covering with a finger nail to find the yellow, jelly bean shaped eggs underneath. [Fig. 3] Soon, the round, bright yellow crawlers will hatch from these eggs and may be

found moving on the lower surface of the needles. That will be the life stage to target with insecticide treatment.



Figure 4: Elongate hemlock scale damage [Sandy Gardosik, PDA]

A larger number of Elongate Hemlock Scale crawlers were found in Schuylkill County this week. Growers who have been waiting to apply their first insecticide application in the twelve week schedule should begin at this time. This armored scale pest will also be found at the base of susceptible trees, near the interior of the tree, however Elongate scale has a different appearance than Cryptomeria. Female scales have a brown, oblong scale covering, and males have a white, floccid covering. The chlorotic damage to the surface of the needles is similar to the damage caused by Cryptomeria scale. [Fig. 4]

At this point in the season, growers may have already applied their 3rd fungicide spray for the prevention of Rhabdocline needle cast on Douglas-fir, but it is important that growers who also have Swiss needle cast do not forget to apply a 4th fungicide spray. Although Rhabdocline sporulation has ended in some areas (black fruiting bodies reported in Schuylkill County), research has proven that Swiss needle cast has a longer sporulation time. Without a 4th fungicide application, the new growth may still potentially be infected.



Figure 5: Swiss needle cast of Douglas-fir [Tracey Olson, PDA]

Swiss needle cast infection can be identified by the brown needle tips and the two rows of black, powdery fruiting bodies on the lower surface of the needles. [Fig. 5]

As of yesterday, Spruce Needle Rust was still sporulating in Schuylkill County. This means the disease is still capable of infecting the new growth of Colorado blue spruce, Serbian spruce or White spruce until that new growth has hardened off. Some literature suggests weekly intervals for fungicide applications, so growers may need to consider making additional fungicide applications if the conditions are appropriate.

Lastly, many growers may be seeing the symptoms of frost damage this year. There had been several cold temperature days this spring that could have damaged the new growth of several conifer species. The typical symptom of frost damage is dieback, or wilting and browning of the new buds. [Fig. 6]

Newer growers may not recognize this type of damage and may suspect pest damage.



Figure 6: Frost damage on Douglas-fir [Rayanne Lehman, PDA]

The next scouting report will be available June 2, 2010.