



PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

THURSDAY, MAY 28, 2015

Weekly newsletter compiled by Sarah Pickel, PA Department of Agriculture. This week's scouting data contributors: Jim Fogarty (Halabura Tree Farm), Sandy Gardosik (PDA), Karen Najda (PDA), Sarah Pickel, Brian Schildt (PDA), and Cathy Thomas (PDA).

GROWING DEGREE DAY TOTALS, 5/27/15:

LOCATION	GDD TOTAL
Indiana, Indiana Co.*	476.5
Montoursville, Lycoming Co.*	507.5
Mount Joy Twp, Elizabethtown (NE), Lancaster Co.	634.5
New Cumberland, York Co.	599.5
New Ringgold, Schuylkill Co.	630.5

* Figure courtesy of www.weather.com.

BAGWORM

Inside bagworm cases yesterday in Schuylkill County, there were larvae inside that had not yet emerged. These will likely emerge soon. However, in York County yesterday, very young bagworm larvae were found outside of the overwintering cases on Concolor fir. The emergence had just begun because there were still many larvae inside the case. You could still find the fine strands of silk the larvae used to exit the cases hanging from the ends of the cases. Also, several of the larvae on the needles had not even begun to build their protective cases yet. Without their cases, the larvae are tan with black heads and black on the first few segments behind the head. They are



Figures 1&2: Above - Young bagworm larvae feeding on new growth [S. Gardosik, PDA], Below - Overwintered bagworm casing [S. Pickel, PDA]

the larvae are tan with black heads and black on the first few segments behind the head. They are

tiny also – less than 1/8 in. When they begin to feed, they start to build a cone-like case, made of pieces of needles, which they carry with them.

Bagworms can be found on any conifer species. This caterpillar pest has one generation per year. The larvae, or bagworms, will feed throughout the summer and as they increase in size, they continue to build up their cases from needle pieces. When the bagworms begin to feed in the spring, they will eat parts of the needles, causing brown, ragged areas of the needles. As the bagworms grow, however, they are able to eat whole needles and are capable of stripping whole twigs of their needles. In early fall, the male bagworms will pupate and then emerge from their cases as moths. The moths will mate with the female larvae still in the cases. Those females develop eggs, which remain inside their bodies throughout the winter. In the late spring/early summer, the eggs hatch into larvae to begin the cycle all over again.

To prevent feeding damage from this pest, an insecticide can be applied when larvae are still small, but when the majority have exited the cases. In smaller populations, bagworms may be picked by hand later in the season if control is not achieved at this time.

PINE NEEDLE SCALE

This week in Dauphin and Lancaster Counties, a higher percentage of pine needle scale crawlers were found underneath the cottony white, oblong adult scale coverings. A few translucent yellow crawlers were found to have emerged and settled on the needles in a block of Eastern white pine in the Dauphin County location. These translucent yellow crawlers are the next life stage after the tiny, brick-red crawlers that first emerge. Over the next week, growers can expect



Figure 3: Adult pine needle scales and scale crawlers [PDA]

to see more of the brick-red, oval shaped crawlers emerge from underneath the scale covers to settle elsewhere along the pine needles. A small population of this armored scale pest may be tolerable on Eastern white pine. Scotch pine is another host. The scale is commonly heavier on Scotch pines.

Pine needle scale goes through two generations each year. In mid-late May, eggs that have overwintered under the adult scale will hatch into 1st stage nymphs, or crawlers, and will begin to move from under the scale covering along the needles. These crawlers settle and begin to feed and molt, developing their own covering. The next generation will of crawlers will hatch mid-late July. The best time to gain control with this pest is when the crawlers are exposed on the needles and have not yet begun to form their protective covering. This can be done soon, when 1st generation crawlers emerge or in July, when 2nd generation crawlers emerge. If growers notice a heavy infestation (with multiple scales per needle or needle bundle) they can apply an insecticide when the majority of crawlers have moved out from under the adult scale covering. Because of the staggered emergence, 1-2 applications may be necessary.

ELONGATE HEMLOCK SCALE

Small amounts of elongate hemlock scale crawlers were seen moving around on the needles of Fraser



Figure 4: Female elongate hemlock scale and crawler emerging [B. Schildt, PDA]

fir in Dauphin, Lancaster, Northumberland and Schuylkill Counties this week. Look for this armored scale pest on the undersides of lower, interior branches of Douglas-fir, hemlock, true firs and occasionally spruce. They'll be found on branches showing symptoms of yellow spotting on the upper surface of the needles as well as white-gray wax flocking on some needles. Underneath the needles, tiny, bright yellow, oval shaped crawlers will be found moving around brown oblong female scales as well as shorter, white waxy male scales.

In all locations, there were still just a few crawlers found. This is still a little early to begin insecticide applications. A greater number of crawlers should be exposed on the needles before controls are applied.

Because the generations for this pest can be staggered throughout the growing season, the typical recommended control series (based on PSU research) is to make 3 applications, beginning at the start of crawlers and spaced with 4 weeks between each spray, or to make 4 applications spaced with 3 weeks between each spray. Some growers have found that a single application of the chemical spirotetramat (Movento, Kontos) has been effective.

CRYPTOMERIA SCALE

Another armored scale pest, the Cryptomeria scale, can be found on true firs, spruce and occasionally other hosts. The optimum control window for this pest is approaching. In Lancaster, Lebanon, Northumberland, Schuylkill and York County, bright yellow, jelly bean shaped eggs were found along the plump



Figure 5: Cryptomeria scale with eggs underneath covering [B. Schildt, PDA]

yellow female scales, under the white and yellow scale coverings. It typically takes about two weeks for the eggs of Cryptomeria scale to hatch. When the eggs hatch, round yellow crawlers will be found moving along the needles around the adult scales, which have a fried egg appearance. As with elongate hemlock scales, these scales will be found on the lower, interior branches of the tree. Also, the symptom for this scale is a yellow spotting of the upper needle surface. Look for the scales on the undersides of symptomatic needles.

When crawlers begin to hatch and have moved out from the scale covers along the needles, then control applications can be applied. Because emergence will be staggered, multiple applications may need to be made. Some growers have found success using a single application of the chemical spirotetramat (Movento, Kontos). If good control is

not achieved with the first application, there is a second generation in early August during which growers have a second chance to manage this pest.

ADDITIONAL RESOURCE

For a list of control options for insect and mite pests, the most recently updated list of Insecticides & Miticides for PA Christmas Tree Pests can be found at the following link:

<http://ento.psu.edu/extension/christmas-trees/publications/2013%20Christmas%20Tree%20Insecticides-Miticides.pdf>.

The next scouting report will be available Thursday, June 4, 2015.