



# PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

## THURSDAY, JUNE 4, 2015

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

### GROWING DEGREE DAY TOTALS, 6/3/15:

LOCATION	GDD TOTAL
Indiana, Indiana Co.*	588
Montoursville, Lycoming Co.*	631
Mount Joy Twp, Elizabethtown (NE), Lancaster Co.	788.5
New Cumberland, York Co.	738.5
New Ringgold, Schuylkill Co.	800.5

\* Figure courtesy of [www.weather.com](http://www.weather.com).

### BAGWORM

This week, young bagworms had emerged from their overwintering cases in Schuylkill County. In



Figure 1: Young bagworm feeding on Concolor fir [S. Pickel, PDA]

York County, larvae that had exited last week continued to feed and grow larger in size (increasing the size of their bags as they grow). Any that were still in cases last week have since exited. In Lancaster County, at a location where last year's bags were very high, it was difficult to see if the

larvae had already emerged. If it hasn't already happened in that area, emergence very soon is likely.

Any conifer may be host to bagworms. When scouting for this pest, look for silks still attached to last year's pine-cone-like cases. Small larvae covered in brown shaggy coverings may be found feeding on the undersides of nearby needles. They may also be found close to tattered and partially brown needles (symptoms of small bagworm feeding). As the bagworm increase in size, they will

be capable of eating whole needles. When larvae are young, growers may find that they are able to control this pest using an application of a *Bacillus thuringiensis* (Bt) product, such as Javelin or Dipel. These bacterial products are specific to lepidopteran (caterpillar) pests, but are only effective on small larvae. If larger larvae are present, an application of another insecticide product may be necessary.

### PINE NEEDLE SCALE

Pine needle scale populations on Eastern white pine in northern Dauphin County were monitored this week and while there were some eggs still found under the adult covers, there were more hatched crawlers found than eggs. Also, an increased number of brick red colored crawlers were found settled along the needles. As these crawlers mature and develop their own coverings, their color will change to a translucent yellow. When they are completely covered with a white scale covering, control will be much more difficult.



Figure 2: Pine needle scale with crawlers on Eastern white pine needles [S. Pickel, PDA]

For some growers, a small population of this armored scale pest may be tolerable on Eastern white pine, while on Scotch pine is (another host) the scale can become more of a problem. If growers notice a heavy infestation (with multiple scales per needle or needle bundle), they may achieve control of this pest by applying a horticultural oil or insecticide when the crawlers are found outside of the adult coverings. Because the crawler emergence is staggered, a second application may be necessary a week to ten days after the first application.

## ***ELONGATE HEMLOCK SCALE***

In northern Dauphin, Lancaster and Schuylkill County this week, more crawlers of elongate



*Figure 3: Elongate hemlock scale female (top of photo) with an active crawler (circled) [S. Pickel, PDA]*

hemlock scale were found moving among the adult scales on Fraser fir. Some of these crawlers were beginning to settle and form their scale coverings. This pest has several hosts: hemlock, true fir, Douglas-fir, and spruces. When scouting for this scale, look for symptomatic yellow splotching on the upper surface of needles found on the lower tree branches.

Underneath these yellow speckled needles, oblong brown scales and shorter, white, fuzzy scales will be scattered along the needles. Tiny, bright yellow, oval-shaped crawlers will be found around these adult scales.

When growers notice an increase in the number of crawlers exposed on the needles, controls can be applied. The generations of this pest are staggered throughout the growing season, so 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***

In populations of Cryptomeria scale being monitored in northern Dauphin, Schuylkill and York Counties this week, it was still just the bright yellow, jelly-bean-shaped eggs being found underneath the adult scale coverings. In Lancaster County however, hatched



*Figure 4: Cryptomeria scale covering removed to show female with eggs. [S. Gardosik, PDA]*

crawlers were also found underneath the coverings. These bright yellow, flat, oval-shaped crawlers will move out from under the coverings very soon. It typically takes a period of about two weeks for Cryptomeria eggs to hatch into crawlers. The crawlers' emergence can be expected to occur within a range of 600-800 GDD (with occurrence taking place closer to 800 in recent years).

True firs and spruces seem to be the preferred hosts, although other conifer species are susceptible. Growers can scout for this pest in the same way they would for elongate hemlock scale: on the undersides of spotted needles on the lower, interior branches of the tree. To observe the eggs, scrape the white, oval shaped coverings back to reveal the eggs (or recently hatched crawlers) nestled around the plump, yellow, mother scale.)

Control can begin when the crawlers are found out along the needles. The crawlers will come out over an extended period of time, so two and sometimes 3 applications of an insecticide application may be necessary. Some growers, however, have found success with making a single application of the chemical spirotetramat (Movento, Kontos). This has not been tested by research in PA.

## ***GYPSY MOTH UPDATE***

A grower has reported seeing a large increase in Gypsy moth caterpillars in Lehigh County. The caterpillars have been causing damage to Norway spruce. Growers should be monitoring for unusual damage to their trees and looking for the dark, hairy caterpillars. Early stage caterpillars will have orange or yellow spots along the middle of their backs. Later stage caterpillars will have blue and red spots.

## ***DISEASE UPDATE***

In Schuylkill County, the needle lesions of spruce needle rust have begun to dry up, which signals the end of sporulation. These needles are also being cast from the tree. Also, in Dauphin County, the needle lesions of Rhabdochloa needle cast have turned black and are dried up. If growers are only concerned with these diseases, then the need for further fungicide applications in the areas may be over.

The end of sporulation for Rhizosphaera and Stigmata needle casts of spruce and for Swiss needle cast of Douglas-fir, however, is not really

clear. Growers have asked me if they could stop making fungicide applications and my answer is “that depends”. If the new growth has begun to harden off (twigs turn woody and needles darken and become tough), then you may not need any further applications. If the new growth is still growing and moist conditions persist, it could be that an additional fungicide would be beneficial.

***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 11, 2015.