PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

WEDNESDAY, MAY 21, 2014

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

GROWING DEGREE DAY TOTALS, 5/20/14:

LOCATION	GDD TOTAL
Indiana, Indiana Co.*	255.5
Montoursville, Lycoming Co.*	277
Mount Joy Twp, Elizabethtown (NE), Lancaster Co.	350.5
New Cumberland, York Co.	303
New Ringgold, Schuylkill Co.	369.5

** Figure courtesy of www.weather.com.*

ELONGATE HEMLOCK SCALE

Last week in Schuylkill County and yesterday in southern York County, the first signs of elongate hemlock scale crawler emergence were observed. Eggs were found inside the brown, oblong female scales, and some of those eggs had hatched into crawlers. A few of those crawlers had moved out onto the needles among the adult female and male scales. (Males are shorter than female scales and white.)

Figure 1: Elongate hemlock scales (male and female) on Fraser fir. [S. Pickel, PDA]

Figure 2: Elongate hemlock scale damage [C. Thomas, PDA]

Elongate hemlock scale can be a serious pest for a number of conifer species, including hemlocks, true firs, Douglas-fir and occasionally spruce. The scales feed on the underside of the needles and cause a yellow speckling very similar to the damage caused by Cryptomeria scale. The scale population will build from the base of the tree and move upwards and outwards.

Control can be challenging because the two (or possibly more) generations of this pest are staggered throughout the growing season. There are a few control options available for this pest. Research out of Connecticut shows that a systemic trunk spray of the chemical dinotefuran (Safari) prior to bud break can provide control throughout the season. Another control method is to begin insecticide applications when a flush of crawlers can be found moving on the needles. Some growers have found success with a single application of the chemical spirotetramat (product names Movento or Kontos). Penn State research supports a series of multiple applications (3 sprays with 4 weeks between, or 4 sprays with 3 weeks between).

SPRUCE DISEASES

Serbian and Blue spruces continue to break bud across the state. In Schuylkill County, bud break ranges from 10-20 percent, with the bud sheath still on most buds (although larger trees may be 100%). In York County, nearly 100% of blue spruce have broken bud, and Serbian spruce are not far behind. These two spruce species are both hosts for spruce needle rust, as well as for Stigmina needle cast.

The symptom of spruce needle rust is yellow and orange colored bands which wrap around last season's needles. In Schuylkill County, these lesions or fruiting bodies have swelled and broken needle surfaces to releasing spores (sporulate) which will infect the new growth. The old infected needles will cast when sporulation ends. Although the disease is much more prevalent in the eastern part of the state, it is a good idea for growers to

Figure 3: Sporulating spruce needle rust [Paul E. Hennon, USDA Forest Service, Bugwood.org]

recognize the symptom in case it would have moved into your area. Fungicide applications should begin at bud break and can be made weekly after this first application, continuing until the new needles harden off. Applications or the old infected needles are cast. For more information on this disease, visit: http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/spruce-needle-rust.pdf/view.

Stigmina needle cast can be found across much of the state. Symptoms of this include browning needles beginning at the base of the tree and moving upward. Tiny black fruiting bodies of the disease are found on the underside of the needle, pushing through the stomates. The symptoms are nearly indistinguishable from Rhizosphaera needle cast (which affects only Colorado blue spruce and Englemann spruce). Rhizosphaera fruiting bodies are smooth and round, while with Stigmina, fruiting bodies are fuzzy or hairy. The fruiting bodies will release spores, which will infect the new growth. Fungicide application for both diseases should begin at bud break and continue at 2-3 week intervals (or a shorter time span if the season is rainy) for at least 3 applications. For more info on Rhizosphaera needle cast, visit: http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/rhizosphaera-needle-cast.pdf/view.

Pine Bark Adelgid

Figure 4: Pine bark adelgid nymphs waxing over [S. Pickel, PDA]

In northern York County, this week, the nymphs of pine bark adelgid were found to be covered over with their white, waxy coating. Some of these adelgid have now matured to the point that they have begun to lay the eggs of the next generation underneath the coatings. When this occurs, it is actually too late to get control of the population at this point in the season. Growers should observe the adelgids on the candles and determine if the majority of nymphs have waxed over before making an insecticide application. For more information on this pest, visit: http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/shoot-and-branch-injury/pine-bark-adelgid.jpg/view.

Looking Forward

In the next week or so, growers could begin to see activity with two common pests: bagworm and pine needle scale. Bags of bagworm in York County this week had only eggs inside, but very soon, those eggs should be darkening in color and hatching into larvae. When those larvae exit the bags, they will begin to feed on the new needles of host trees (any conifer). The best time to achieve control is when the larvae are still small.

The pine needle scale is a white, oblong scale pest of Eastern white pine and Scotch pine. There are currently only eggs under scale covers in Cumberland County, but in the near future, the eggs will hatch into crawlers that can move out along the needles. The crawlers are the vulnerable stage that can be controlled with horticultural oil or an insecticide. More information will be written about these two pests in the coming weeks.

Helpful Resources

A list of Pennsylvania's registered miticides and insecticides (*2013 Insecticides and Miticides for Christmas Tree Pests*) can be be found on Penn State's Christmas Tree Website, http://ento.psu.edu/extension/christmas-trees.

The PA IPM Program publication, *Integrated Pest Management for Christmas Tree Production: A Guide for Pennsylvania Growers* is available as a free PDF download at http://pubs.cas.psu.edu/FreePubs/pdfs/agrs117.pdf. To purchase this publication (# AGRS-117), call the PSU College of Ag Publications office at 814-865-6713, fax them at 814-863-5560, or send an e-mail to AgPubsDist@psu.edu.

The next scouting report will be available May 28, 2014.