



# PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

## FRIDAY, MAY 5, 2017

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 and Cathy Thomas (PDA).

### GROWING DEGREE DAY TOTALS FROM 5/4/17:

LOCATION	GDD TOTAL
Elizabethtown, Lancaster Co.	368.5
Indiana, Indiana Co.	318
Montoursville, Lycoming Co.	282
New Cumberland, York Co.	424.5
New Ringgold, Schuylkill Co.	339

\* Figures courtesy of [www.accuweather.com](http://www.accuweather.com).

### BUD BREAK

Douglas-firs in the south-central and southeastern areas of Pennsylvania are in full swing of bud break, so growers in these areas should have begun at least the first round of fungicide application for the prevention of needle cast diseases.

Spruces are at varying stages of bud break. About 75% or more of Colorado blue spruce in York County locations had broken bud, while in Schuylkill County, blue spruce are only at about 10% (or less) bud break. Serbian spruce in Schuylkill County are breaking on some of the lower branches, and that is only on a small percentage of trees.

About 75% or more of Fraser firs in York County have broken bud, while in parts of Dauphin County 50% or less of Frasers have broken bud. In Schuylkill County, 10% or less of Frasers have buds breaking.

### ELONGATE HEMLOCK SCALE

In Dauphin and Schuylkill Counties, the first few crawlers of Elongate Hemlock Scale were seen moving around on the needles of Fraser fir. This armored scale is a pest of Douglas-fir, hemlock, true firs and occasionally spruce. The scale can be

found on the lower, interior branches. Look for symptoms of yellow spotting on the upper surface of needles, as well as white-gray wax flocking on some needles. Brown, oblong female scales and shorter, white, waxy male scales will be lined up along the underside of spotted needles. Tiny, bright yellow, oval shaped crawlers will be found moving around these adult scales. At this stage, it is still early to begin with insecticide



Female elongate hemlock scales with yellow crawlers [S. Pickel, PDA]

applications. A greater number of crawlers should be exposed on the needles before controls are applied.

Instead of having distinctly timed generations, this scale has generations that are staggered throughout the growing season. Because of this, a long-term control strategy is necessary. When more than just the first few scale crawlers are seen moving around, growers should think about applying an insecticide. If following the standard control application recommended by Penn State research, growers can either make 3 insecticide applications with 4 weeks between each application, or 4 applications with 3 weeks between each application (trials suggest Dimethoate). Another option that some growers have found to be effective (although no official trials have been conducted) is a single application of the systemic chemical spirotetramat (Movento, Kontos).

## ***THRIPS ON TRUE FIRS***

In Chester and Dauphin Counties, a species of thrips, a small (<1mm long), slender insect, has been found in the new buds of true firs and was causing damage. They were found on Nordmann firs and Fraser firs. The feeding appears to be causing a distortion of the new needles and even browning. Damage noted on these trees from the previous season was stunting, browning and even casting of needles. The small, yellow insects can be seen in the buds and on the foliage with the aid of a hand lens. The thrips can be dislodged and detected by tapping foliage over a white plate or clipboard.

*Thrips in Nordmann fir bud (above), thrips damage to Nordmann fir (below) [Nancy Gregory, University of Delaware]*



As PDA tries to determine more about the nature of this potential emerging pest, it would be helpful to know of other



*Damage to Fraser fir [Sven-Erik Spichiger, PDA]*

populations of this insect. Have you seen damage similar to that shown in the pictures at left on your farm? If so, we would be interested in seeing pictures of this damage. The Department appreciates your help in this matter. Emails can be sent to [c-sapickel@pa.gov](mailto:c-sapickel@pa.gov).

## ***NEEDLE CASTS OF DOUGLAS-FIR***

In order to prevent spores of both Rhabdocline and Swiss needle cast from infecting the new growth of Douglas-fir, their only host, the new needles should be coated with a fungicide before the spores land on the needle surfaces. In damp or wet weather, spores are released from last year's fruiting bodies and can begin growing when they land on the needle surface. A recommended timing for fungicide application involves a 1<sup>st</sup> application of chlorothalonil at the start of bud break. One week after the 1<sup>st</sup>, a 2<sup>nd</sup> application should follow. Traditionally, the 3<sup>rd</sup> application would be made 2 weeks after the 2<sup>nd</sup> and then a 4<sup>th</sup> application could be made 3 weeks after the 3<sup>rd</sup>. A newer spray program suggested for those who have had difficulty controlling Swiss needle cast is to shorten the intervals between the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> only 7-10 days between each application, and also, to possibly add a 5<sup>th</sup> spray.

## ***SPRUCE NEEDLE DISEASES***

When spruce buds are open, growers who have found either spruce needle rust (a fungus affecting Serbian and Colorado blue spruce) or needle cast (Stigmata affects Serbian and Colorado blue spruces, while Rhizosphaera can affect Colorado blue spruce or Engelmann spruce) should be considering making fungicide applications to protect the new growth of those spruce.

Spruce needle rust is visible to the naked eye as yellow-orange bands on last season's needles which span the whole needle. The orange portion of this band swells and breaks the needle surface to release its infectious spores. The infested needles will be cast after the rust lesions have dried up (usually when the new growth hardens off). The disease is more prevalent in Eastern PA, but has also been found in Central Pa. The first fungicide application should be made at the start of bud break, and further applications should be repeated weekly until the needles have hardened

off or until the diseased needles have dropped off the trees. For more information, visit: <http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/spruce-needle-rust.pdf/view>.

Both Stigmina and Rhizosphaera needle casts also should be managed with fungicide applications. Needles infested with needle cast have tiny, black fruiting bodies on the undersides of the needles, lined up with the stomates. (These fruiting bodies are smooth for Rhizosphaera and fuzzy for Stigmina.) Infested needles will turn brown and be cast. The lower interior needles are the first to be affected. Fungicide application for needle cast 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>.

### ***BALSAM TWIG APHID***

With the on-set of true fir bud break, the window to control balsam twig aphid and avoid damage is closing. The aphids will move into the buds as they open and begin to feed on the new needles, causing the twisting. For growers in areas not yet experiencing bud break, check the cones before making insecticide applications. They are protected from insecticide sprays in the scales of the cones. Where aphid infestations are heavy, growers may want to consider removing cones in those fields before making an insecticide application.

### ***ADDITIONAL RESOURCE***

More information on Christmas tree pests and production is available at the PSU Department of Entomology's Christmas tree site: <http://ento.psu.edu/extension/christmas-trees>.

The next scouting report will be available Friday, May 12, 2017.