



# PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

## WEDNESDAY, APRIL 30, 2014

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

### GROWING DEGREE DAY TOTALS, 4/29/14:

LOCATION	GDD TOTAL
Indiana, Indiana Co.*	94.5
Montoursville, Lycoming Co.*	73
Mount Joy Twp, Elizabethtown (NE), Lancaster Co.	101
New Cumberland, York Co.	89.5
New Ringgold, Schuylkill Co.	116.5

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

### DOUGLAS-FIR BUD BREAK BEGINNING

Although the cold overnight temperatures seem to have held back the advancement of Douglas-fir



Figure 1: Douglas-fir buds beginning to break. [B. Schildt, PDA]

bud break in many areas, a small amount of young trees had a few buds opening in southern York County last Friday. Warm temperatures over the weekend would have helped to push this along. In Schuylkill County, a small amount of trees had buds that were swelling and lightening in color, but the majority of trees had buds that were still tight. Once more buds begin to break in Douglas-fir fields, growers should be prepared to make their fungicide applications for Rhabdocline and Swiss needle cast diseases and insecticide applications for Douglas-fir needle midge.

### SWISS AND RHABDOCLINE NEEDLE CASTS

If you read the article I sent out earlier this week on Swiss needle cast, written by grower and

former extension agent Paul Shealer, you know that this needle cast disease is a very serious issue for many growers this year. This could be for several reasons. 1) Because last spring was fairly wet and cool, there were perfect conditions for the disease to spread. 2) Because of the number of rainy days we saw, it was a challenge to make fungicide applications when they were needed. 3) Some growers may focus on treating their mature trees for Swiss needle cast, but the needle cast diseases can also be found on small newly transplanted trees.

Trees infected with Swiss needle cast may resemble trees with winter burn. Last year's growth will brown from the tips of the needles down. To determine if Swiss needle cast is present, look at the underside of the needles for the presence of black fruiting bodies lined up, pushing through the needle stomates.



Figure 2: Left - Field of trees infected with Swiss needle cast; Top right - twig with Swiss needle cast; Bottom Right - close-up of Swiss fruiting bodies [PDA]

Rhabdocline needle cast seems to be less prevalent than Swiss needle cast, but it can still be found. The symptom for this disease resembles rusty-orange paint splatches on last season's needles. As bud break



Figure 3: Rhabdocline needle cast [S. Pickel, PDA]

approaches, the splotches or lesions swell and break open when wet conditions are present. This is the signal that sporulation (or spore release) is beginning. Yesterday in York County, Rhabdochloa lesions had begun to open.

It is important that growers be ready to apply their fungicide product (chlorothalonil) when the buds begin to open. As suggested by Paul, a series of 5 sprays may be the key in controlling Swiss needle cast. Fungicide applications should begin when buds break, with repeated applications following with 7-10 days between applications.

### **DOUGLAS-FIR NEEDLE MIDGE**

As of this week, Douglas-fir needle midge adults had not yet been found in trees monitored in Lancaster and York Counties, but because bud break is beginning, they could be present in other area. A homemade emergence trap (constructed from a box with a clear jar on the side) set underneath a previously infested tree will help to determine when the adult midge have emerged from their overwintering sites in the ground. These tiny, yellow-orange fly-like insects emerge to mate and lay eggs inside the opening buds of Douglas-fir. Growers should be ready to apply an insecticide at the time of, or just prior to, midge emergence. For more information on Douglas-fir needle midge, visit:



Figure 4: Douglas-fir needle midge adult [USDA Forest Service Archive, USDA Forest Service, Bugwood.org]

<http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/Douglas-fir.pdf/view>

### **SPRUCE SPIDER MITE**

Spruce spider mites were found hatched on Fraser fir last Friday in southern York County. Approximately 50% of overwintering eggs had hatched. These round, red eggs will be found on the twig stems of firs or spruces, or on the edges of scales on arborvitae and junipers. While they can be found on any conifer host, they are most commonly found on spruces; Fraser, Canaan and

Balsam firs; juniper and arborvitae. Reddish-orange mite nymphs hatch first and will mature into brown and orange adult mites. Look for these on twigs of the tree that show a yellowing or tan discoloration close to the twig stems (typical symptom of mite feeding). If growers have difficulty finding mites, tapping branches over a light-colored clipboard will dislodge mites that are present. Use a hand lens to observe the dark moving specks on the surface. Control action may be necessary if >10 mites are found per branch. Growers can apply a miticide, insecticide or horticultural oil after the majority of eggs have hatched. It's best to get control of the mites before bud break to prevent mite feeding damage on the new growth. For more information on this pest, visit:



Figure 5: Spruce spider mites [S. Pickel, PDA]

<http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/spruce-spider-mite.pdf/view>.

### **PINE BARK ADELGID**

This week in York County, when examining the waxy egg clusters of pine bark adelgid, which are found at the base of Eastern white pine buds or candles (occasionally may be found on Austrian or Scotch pine), only the first few nymphs were found to have hatched (1%). In Schuylkill County, there were only eggs and no hatched eggs. After hatching, the adelgid nymphs will make



Figure 6: Pine bark adelgid on Eastern white pine [Tom Coleman, USDA Forest Service, Bugwood.org]

their way up the expanding candles and find a place to settle and build up a protective, white, waxy covering. In severe infestations, these adelgids may also be clustered along the main

trunk of hosts. For growers who have a problem with this pest, an insecticide may be applied when the majority of eggs have hatched. 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>.

### **BALSAM TWIG APHID**

Balsam twig aphid hatch continues in Lancaster County this week. Stem mothers were found on



Figure 7: Balsam twig aphid stem mother [S. Pickel, PDA]

Canaan fir. These aphids will only be found on true firs, where damage is easily recognizable as a twisting or kinking of last season's new needles. The best time to control balsam twig aphid is after the stem mothers have hatched, but before bud break occurs and aphid nymphs

have had a chance to slip inside the developing buds. Control can be achieved with one application of horticultural oil or of a traditional insecticide made after the majority of the eggs have hatched. For more information, visit:

<http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/balsam-twig-aphid.pdf/view>.

### **WHITE PINE WEEVIL**

White pine weevils continued to be active in Schuylkill County this week in untreated trees. If no control action has been taken yet, a spray made at this time may still prevent some egg laying, although the chances of finding eggs in leaders is increased as time passes. If a first insecticide application has been made, growers should continue to monitor traps for presence of weevils to determine if a second spray is necessary. For more information, visit:

<http://extension.psu.edu/pests/ipm/program/christmas-tree/pest-fact-sheets/shoot-and-branch-injury/white-pine-weevil.jpg/view>.

### **HELPFUL RESOURCES**

A list of Pennsylvania's registered miticides and insecticides (*2013 Insecticides and Miticides for Christmas Tree Pests*) can 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](mailto:AgPubsDist@psu.edu).

*The next scouting report will be available May 7, 2014.*