

PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

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GDD TOTALS AS OF TUESDAY, 4/24/12:

LOCATION	GDD TOTAL
Elizabethtown, Lancaster County	268.5
Hallstead, Susquehanna County	164
New Cumberland, York County	307.5
New Ringgold, Schuylkill County	234

BUD BREAK

This week in Lancaster, Schuylkill and York Counties, buds of Colorado blue spruce were breaking at varied rates. In some locations, bud break was as high as 90% and as low as 5%. For growers who have had spruce needle rust on their farms, tracking blue spruce bud break is very important. More on spruce needle rust further in the report.

In Lancaster and northern York Counties this week, Canaan firs were beginning to break bud. Trees in these areas were still at less than 10% bud break. For growers with balsam twig aphid issues, the start of Canaan, Fraser and other true fir bud break signals the close of the control window for this pest. The aphid nymphs will crawl inside the opening buds and will be protected for the short period of time it takes to damage the new needles.

Also, Eastern white and Scotch pine candles are elongating in York and Lancaster Counties

DOUGLAS-FIR NEEDLE MIDGE

Last Thursday, in New Cumberland, York County, the eggs of Douglas-fir needle midge were found in

the expanding buds of Douglas-fir. This means adults have already emerged, mated and laid the eggs, which do not appear to be vulnerable to insecticide sprays. When the eggs mature, the larvae will burrow out the back of the egg directly into the needle. The larvae will feed inside the needles forming galls, which cause the needles to kink and yellow at the site of the galls.



Figure 1: Douglas-fir needle midge eggs inside new bud. [PDA]

For growers in northern areas where Douglas-fir bud break has not yet occurred, there is still time to prevent damage from the midge. The orange gnat-like insects will typically emerge and hover around the buds just before the buds break. One insecticide product, acephate (Orthene), allows for application before bud break. For more information on Douglas fir needle midge, visit: <http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/Douglas-fir.pdf/view>

SPRUCE NEEDLE RUST

The rusty-orange fruiting structures (telia) of spruce needle rust were swollen and releasing spores on Colorado blue spruce in Schuylkill County. These fruiting structures are found on needles with orange bands circling the needles. This disease infects the tender, new needles of Colorado blue spruce and



Figure 2: Spruce needle rust ready to release spores. [T. Olson, PDA]

Serbian spruce, so when those needles begin to emerge, it's time to make protective fungicide applications. The first spray should go on at bud and be repeated weekly until last season's infected needles drop or the new growth hardens off. This can mean between 3 and 5 applications. For more information on this disease, visit:

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

ELONGATE HEMLOCK SCALE

In Schuylkill County this week, a few crawlers of elongate hemlock scale were found moving on the undersides of fir needles. This is an early start for this hard scale pest, which normally becomes active around 360 GDD. On Canaan fir in northern York County, crawlers were not found; only eggs were found inside of the female scales. Those eggs will hatch into crawlers and could



Figure 3: Elongate hemlock scale crawlers and females.

emerge from female covers within the next two weeks. To find this pest of numerous species of conifers, look for yellow speckling and white-gray waxy film on the upper surface of needles located at the base of a tree. On the underside of the needles, growers will find brown oblong scales (female) running parallel with the needles and also smaller, white, fuzzy scales (male). Crawlers will be small, bright yellow ovals moving around the brown female scales. To get control of this pest, growers should begin an insecticide program when the first major flush of crawlers emerge, starting with one spray, followed by 2 more sprays with 4 weeks between each spray (or 3 more sprays with 3 weeks between each spray). For more information on this pest, visit:

<http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/elongate-hemlock-scale.pdf/view>.

PINE BARK ADELGID

On white pines in Lancaster and York Counties, the crawlers of Pine Bark Adelgid had emerged and



Figure 4: Pine bark adelgid crawlers [PDA]

were making their way up the newly expanding candles. At first, these crawlers may appear as black pepper specks along the bright green candles. The crawlers will soon develop a white waxy covering. This insect pest of Eastern white pine, which last season formed a white waxy coating at the base of the candles, is not typically considered a major pest. However, when the adelgids are heavy, the white wax may also be found on the main trunk of the tree and at other branch joints. In addition to being unsightly, a heavy infestation could weaken a tree, making it more susceptible to other pest invasions. If control action is necessary, the time to apply insecticides is when the black crawlers first make their way up the candles. In the fall or early spring, dormant oil may be applied to kill the overwintering females before they develop the waxy coating and lay their eggs. For more information, view this fact sheet from the PSU Woody Ornamental IPM site:

http://woodypests.cas.psu.edu/factsheets/insectfactsheets/html/Pine_BarkA.html.

WHITE PINE ISSUE

One issue some growers have been seeing on



Figure 5: White pine needle discoloration [B. Schildt, PDA]

white pines this season is a yellowing or speckling of last season's needles, with some needle drop. While many issues may cause needle discoloration

in white pines (fertility issues, air pollution, weather sensitivity, "decline," etc.), one possible cause for the damage this season could be winter freeze injury. In Sinclair and Lyon's *Diseases of Trees and Shrubs**, such injury is described to be the result of "warm weather in late winter or early spring during which the youngest needles lose cold hardiness. A sudden return to freezing temperatures normal for the season causes the injury."

If freeze injury would be the culprit causing the discoloration, the new candles should be unaffected by this damage and needle elongation should continue as normal. If needle drop persists and new growth appears unhealthy, a different issue may be the problem.

*Sinclair, W.A & H.H. Lyon. 2005. *Diseases of Trees and Shrubs*. 2nd Ed. Ithaca, NY: Cornell University Press. p. 496.

LOOKING AHEAD

Underneath the oblong white covers of pine needle scale adults on white pine in Elizabethtown, Lancaster County, crawlers have just begun to hatch from the burgundy oblong eggs. The time to treat this pest of numerous pines will be when the rusty-red crawlers emerge from underneath the female scale covers. Look for more information on this pest in the weeks to come.

For your reference, the *2011 Insecticides and Miticides for Christmas Tree Pests* can be found at the Penn State Christmas tree Website, <http://ento.psu.edu/extension/christmas-trees>.

The next scouting report will be available on Wednesday, May 2, 2012.