



PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

WEDNESDAY, MARCH 19, 2014

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

GROWING DEGREE DAY TOTALS, 3/18/14:

LOCATION	GDD TOTAL
Indiana, Indiana Co.*	0.5
Montoursville, Lycoming Co.*	0
Mount Joy Twp, Elizabethtown (NE), Lancaster Co.	2
New Cumberland, York Co.	1

* Figure courtesy of www.weather.com.

Although spring weather is taking its time showing up this year, the time to think about spring scouting activity is definitely here! This first scouting report of the 2014 Christmas tree growing season is your reminder that insects and mites will be active in your tree fields soon enough, so it's time to be ready for them. This weekly scouting report will be published through the end of June to alert growers in Pennsylvania and the surrounding states to the current pest activity in Christmas tree fields. The majority of the scouting information is from south-central Pennsylvania, but reports will occasionally feature information from other Pennsylvania regions. Reports will also include pest life cycle information, specific growing degree day (GDD) ranges and management options, as well as collected GDD totals from several Pennsylvania locations.

Growing degree days are a measurement of heat accumulation during a 24 hour period. Insect activities (such as emerging from overwintering sites, laying eggs, nymphs hatching, etc.) correspond to various ranges of accumulated GDD. If growers are interested in tracking the GDD accumulation on their own farm, more information can be found at:

<http://extension.psu.edu/ipm/program/christmas-tree/ipm-basics/Step3.pdf/view>.

TRAPPING FOR WEEVILS

The first scouting activity I typically recommend at the start of the growing season is that any growers who have experienced past damage from conifer weevils place pyramidal emergence traps (i.e. Whalon modified Tedder's traps [Fig. 1]) in the fields where damage has been found. Due to late season snow cover in Central PA fields, the IPM scouting team just placed our traps this week, so no weevils have been found yet. These traps will draw several types of weevil pests. Weevils are beetles which feature a long snout. The most economically damaging weevil pest is the **white pine weevil**.



Figure 1: Whalon modified Teddar's trap used to trap newly emerged white pine weevils. [S. Pickel]

White pine weevil damage causes leader dieback [Fig. 2] in susceptible hosts (pines and spruces, especially Eastern white pine and Serbian Spruce; occasionally Douglas-fir). The small ($\leq 1/4$ ") brown beetle with white and rust colored spots [Fig. 3]



Figures 2 & 3: (L) Leader dieback caused by white pine weevil [S. Pickel, PDA]; (R) White pine weevil on spruce leader [S. Gardosik, PDA]

lays its eggs in the leaders of host trees, which leads to larval feeding inside of tree leaders causing them to wilt and die. These damaged tops [Fig. 2] should be removed and a new leader retrained, or the tree could be permanently stunted.

White pine weevils will emerge from overwintering sites underneath host trees when GDD totals fall in the range of 7-58 GDD, or when ground temperatures average 50°. By early March, traps should be placed within a susceptible host block, close to a previously damaged tree. Whalon modified Tedder's traps, can be ordered on-line from Great Lakes IPM (www.greatlakesipm.com) or can be constructed using instructions found here: <http://extension.psu.edu/ipm/program/christmas-tree/appendixes/insect-traps.pdf/view>. Traps should be monitored several times a week. Growers can also scout host trees to look for weevils feeding on leaders. Weevil feeding results in clear bubbles of sap, which are noticeable when scouting on sunny days.

When white pine weevils are found on a farm, an appropriate insecticide should be applied to the upper 1/3 of the trees. This application should be made less than two weeks after weevils are found in the traps. That's the time it typically takes weevils to mate and lay eggs after emergence. It may be wise for growers to apply a second application if weevils continue to be found in traps after the first application.

Other weevils that may be found in emergence traps around the same time are Pales weevils, mottled brown beetles measuring about 1/2" and Eastern pine weevils, which closely resemble white pine weevils, although are slightly larger. The **Pales weevil** causes flagging of lateral branches of Eastern white and Scotch pines (and



Figure 4: Pales weevil [R. Lehman, PDA]

occasionally other hosts) by chewing on the tender bark of last season's twigs. Pales weevils need fresh stumps of Scotch pine to complete their life cycles, so removal of Scotch pine stumps

or treatment of the stumps with a registered insecticide before the weevils can lay their eggs (7-121 GDD) can prevent a problem with this pest.

ERIOPHYID (RUST) MITES

Another important early season pest is the Eriophyid mite, or rust mite. While no rust mite activity was observed this week at scouting sites in York County, these tiny mites may soon be seen moving about on the foliage of their various hosts in Central PA. Hosts trees of this pest include spruces, firs, hemlocks and pines (called sheath mites when found on pines).

Eriophyid mites typically begin hatching from their overwintering eggs at a range of around 7-22



Figure 5: Eriophyid mite adult and eggs on spruce [S. Pickel, PDA]

GDD. These mites are very small, so a hand lens of 16X magnification or higher is necessary to scout for these. Begin by looking for foliage that has a rusty, silver or faded appearance on spruces, firs and hemlocks. On pines, symptoms are yellowed and sometimes stunted needles. The

overwintering eggs are faintly salmon colored, about the size of needle stomates, and are clustered together at the base of a needle. When they hatch, the mites are triangular and elongated in shape and peach to off-white in color. In addition to discoloration, Eriophyid feeding damage can affect tree vigor when severe.

If the mite population is heavy, consider treating with a miticide. Carefully check to make sure that Eriophyid mites (or rust & sheath mites) are mentioned on the miticide label, as not all miticides are effective against eriophyid mites. For more information, visit: <http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/eriophyid-rust-sheath-mites.pdf/view>.

HELPFUL RESOURCES

Coming soon: Look for a recently updated list of Pennsylvania's registered miticides and insecticides (*2013 Insecticides and Miticides for Christmas Tree Pests*), to be found on Penn State's Christmas Tree Website, <http://ento.psu.edu/extension/christmas-trees>.

For growers who are interested in finding information on scouting techniques, the PA IPM Program publication, *Integrated Pest Management for Christmas Tree Production: A Guide for Pennsylvania Growers* is available for free download as a PDF at <http://pubs.cas.psu.edu/FreePubs/pdfs/agrs117.pdf>. This publication may be purchased by calling the PSU College of Ag Publications office at 814-865-6713, faxing them at 814-863-5560 or sending an e-mail to AgPubsDist@psu.edu and asking about publication item # AGRS-117.

The next scouting report will be available March 26, 2014.