



PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

FRIDAY, MARCH 17, 2017

Weekly newsletter compiled by Sarah Pickel, PA
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GROWING DEGREE DAY TOTALS FROM 3/16/17:

LOCATION	GDD TOTAL
Elizabethtown, Lancaster Co.	47
Indiana, Indiana Co.	40
Montoursville, Lycoming Co.	20.5
New Cumberland, York Co.	68
New Ringgold, Schuylkill Co.	25.5

* Figures courtesy of www.accuweather.com.

At a time when some tree farms have well over a foot of snow on the fields, it may not seem like the time to be thinking about trapping and scouting for insect pests. However, as temperatures will rise in the next week or two, insect activity in Christmas tree fields will in fact resume. This first scouting report of the 2017 growing season is just a reminder for growers to start thinking about the pests that are soon to come.

TRACKING OF GROWING DEGREE DAYS

Insect/mite development is triggered by daily heat accumulations. This accumulation can be tracked



Max/Min Thermometer station [PDA]

by recording average daily air temperatures and using a calculation to compare them to a standard base temperature (50°F). The calculation converts the temperatures into a numerical unit called **Growing Degree Days** (GDD). Insect life stage events such as egg laying, hatching, adult emergence, etc.,

will take place within specific GDD ranges. By tracking the accumulation of GDD, growers can

determine about when a pest will be present/vulnerable. For example, the fairly common conifer pests evergreen bagworms will typically hatch from their eggs as larvae within a range of 650-750 GDD. The GDD ranges for the common mid-Atlantic Christmas tree pests will be shared in the weekly scouting reports when those pests are mentioned (along with current pest activity, life cycle details and management options).

In the chart at the top of this report, the GDD total for a few Pennsylvania locations will be shared each week. If growers would like a GDD total more specific to their farm location, they have a few options.

- 1) Calculate the GDDs yourself using temperatures collected on your farm with a min/max thermometer. Instructions can be found here: <http://extension.psu.edu/pests/ipm/agriculture/christmas-tree/ipm-basics/Step3.pdf>.
- 2) Use an online site or smartphone app for tracking GDD to your zip code. Two free examples are <http://www.greencastonline.com/growing-degree-days/home> and <https://play.google.com/store/apps/details?id=com.farmcentric.GrowingDegreeDays&hl=en>.

Typically, GDD tracking begins on March 1st, however 2017 saw some early warm temperatures in February. Therefore, the locations tracked in the report all began accumulating GDD before March 1st. If any conifer insect activity had begun during the stretches of warm weather, the cold temperatures of March have likely pressed pause on that activity. Growers should be prepared for those pests to quickly become active as the spring weather warms again.

WHITE PINE WEEVIL MONITORING

The first conifer pest that typically becomes active in the spring is the white pine weevil. This destructive beetle is approximately ¼ inch long

and is brown with white and rust colored spots. It spends the winter as an adult in the needle debris at the base of host trees, which are various species of Christmas trees.

Adults will become active and emerge from overwintering sites as temperatures warm. The GDD range during which this activity will typically begin is 7-58 GDD, or when soil temperatures reach 50°F. For all our GDD tracking locations, we have at least entered this range. Although it is possible that weevils may have emerged during the warmest days, the cold temperatures and snow would have sent the weevils back into the protective needle debris on the ground. As soil and air temperatures warm in the next week or two, and snow melts, these pests should become active again.



White pine weevil adult [S. Pickel, PDA]

When the weevils first emerge, they move to the leaders of host trees (pine, spruce and Douglas-fir especially). At first they will feed by making holes in the bark. After about a week or more of feeding at the tops of the trees, the weevils will mate. When eggs are ready, the female make holes in the bark tissue of the leader to lay her eggs. These eggs hatch into larvae inside the leader which will feed on the vascular tissue of the bark and cause the leader to wilt and die.



White pine weevil trap [S. Pickel, PDA]

If growers have had damage from white pine weevil on their farms before and would like to determine if or when the weevils will emerge on their farms, trapping is the best way to determine this. Pyramidal traps sold as Whalon Modified Tedder's traps are available for online purchase from Great Lakes IPM, Inc.

(www.greatlakesipm.com). I would recommend that growers put out traps soon (as snow melt allows). These traps need to be baited with separate vials of denatured alcohol and turpentine to be effective. Place traps in susceptible blocks, and next to a tree which was damaged last season, if possible. Traps should be checked several times a week.

If weevils are caught in the trap, it's recommended to make an insecticide application to the top third of the trees very soon after weevils are found. If weevils continue to be found in traps several days after the first application, growers may want to consider making a second application 7-10 days after the first.

For more information on white pine weevil visit: <http://extension.psu.edu/pests/ipm/agriculture/christmas-tree/pest-fact-sheets/shoot-and-branch-injury/white-pine-weevil.jpg>.

ERIOPHYID MITES

In the next week, growers could be seeing eriophyid mite activity on their trees. These tiny mites are also called rust mites when found on spruces, firs and hemlocks, and sheath mites when found on pines. The damage they cause is a fading or rusting of the foliage color.

Salmon colored to off-white overwintering eggs will be clustered together on the undersides of needles very close to the needle bases. Already hatched eggs will be transparent. The very tiny, oblong mites can hatch in a GDD range of 7-22 and will be off-white to peach in color. A hand lens is necessary to see both eggs and mites. Scout for the mites on twigs with off-color foliage. If mites are found on 80% of the twigs sampled, then a control action may be necessary. When the majority of eggs have hatched and there is no risk of freezing temperatures, growers can apply a horticultural oil



Rust mites on Norway spruce [S. Pickel, PDA]

(prior to bud break) or a miticide with rust mites listed on the label. For more information on this pest, visit:

<http://extension.psu.edu/pests/ipm/agriculture/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/eriophyid-rust-sheath-mites.pdf>.

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, March 24, 2017.