



PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

FRIDAY, MAY 20, 2016

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

GROWING DEGREE DAY TOTALS, 5/18/16:

LOCATION	GDD TOTAL
Indiana, Indiana Co.	299
Montoursville, Lycoming Co.	260.5
Elizabethtown, Lancaster Co.	350
New Cumberland, York Co.	383.5
New Ringgold, Schuylkill Co.	341.5

* Figures courtesy of www.weather.com.

BAGWORM

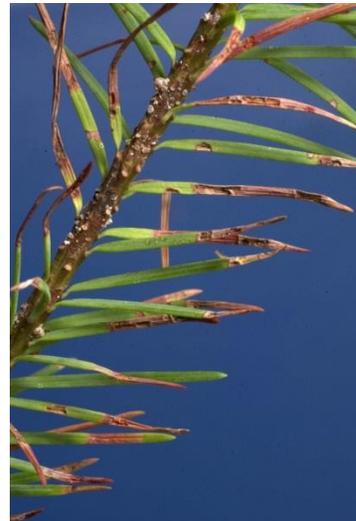
On Wednesday this week, tiny, recently emerged evergreen bagworm larvae (or caterpillars) were found feeding on the new foliage of Scotch pine this in York County.



Young bagworm on Scotch pine [S. Pickel, PDA]

There were still some larvae found inside the casings, which resemble pine cones. In Schuylkill County, only eggs were found inside numerous casings on Arborvitae. Bagworms are a pest of all conifers. The larvae emerge from the cases on fine strands of silk, which allows them to sail to nearby buds. Look for these silks as a sign of larval emergence. As soon as the larvae land on the new foliage, they begin feeding on the new needles and shoots. They also start constructing their protective casings from silk and bits of needle and bark. As the larvae grow, they will continue to expand their casings.

When the larvae are small, they will only be able to eat chunks out of the needles, giving them a tattered appearance. As they increase in size,



Early bagworm damage [PDA]

however, they will be able to eat entire needles. If there are enough bagworms present and if they are left unchecked, they can strip a tree of its needles. The larvae can continue to feed and grow throughout the summer. When feeding stops, the male larvae pupate and then exit their casings as moths in

late August/early September. The males fly to fertilize the females in their casings. The females then lay eggs, which will remain inside the casings to emerge as the next generation the following spring.

To control a bagworm infestation, growers could use either an insecticidal soap, *Bt* or insecticide application. For a small, isolated infestation, growers can spot spray individual infested trees. For a heavier, more widespread infestation, they can pray entire blocks of trees. The microbial insecticide *Bacillus thuringiensis* (*Bt*) is safer on beneficial insects as it specifically targets caterpillars, but it is only effective while the larvae are still very small. (Some *Bt* trade names are Javelin and DiPel.) A broad spectrum insecticide will kill larvae of any size. If control is not achieved while the larvae are feeding, another alternative control method is to remove casings by hand before eggs



Bagworm casing [PA DCNR - Forestry, Bugwood.org]

hatch in the spring. This may be difficult in large nurseries.

ELONGATE HEMLOCK SCALE

In Dauphin and Schuylkill Counties this week, elongate hemlock scale crawlers continue to be seen moving on foliage of fir hosts. As the name suggests, elongate hemlock scale is a pest of hemlock, but also of true firs, Douglas-fir and in some cases, spruce. An infestation is typically found on lower limbs of the tree, beginning near the trunk. The scales are attached to the undersides of the needles and feed on plant juices. The feeding damage shows up



Elongate hemlock scale damage [S. Pickel, PDA]

as yellow speckling on the upper surface of the needles. Another symptom to look for is a waxy, flocked appearance of the needles. This arises from the waxy residue that the male scales are protected with. Males are short and white, while the female scales are oblong, smooth coated and brown-amber in color. Scattered among these males and females are the tiny, lemon yellow colored crawlers (or first stage nymphs).

Because the life cycle of elongate hemlock scale is staggered throughout the growing season, rather than taking place in distinctly timed generations, a long term control strategy is necessary. Beginning at the start of scale activity, which is when crawlers are seen moving around, growers should think about applying an insecticide. If following the standard control application recommended by Penn State



Female EHS and crawler (circled) [C. Thomas, PDA]

research, growers can either make 3 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).

PITCH TWIG MOTH

An uncommon pest that growers may come across



Above: Pitch twig moth blister; Below: Larva inside blister [S. Pickel, PDA]



on twigs of Scotch pine and other hard pines is the pitch twig moth. There are a few species of pitch twig moths in the genus *Petrova* found in the Northeast (*P. albicapitana* – Northern pitch twig moth and *P. comstockiana* – Pitch twig moth [also known as *Retina comstockiana*]). These moths cause a round blister on pine twigs, either in a branch junction or near the end of the branch. Inside this blister a larva will be found tunneling inside the branch. In its two year life cycle, the first year larvae will form the blisters near the new growth. They leave those blisters the second year and move to branch junctions to form another blister. They will pupate inside this blister and exit as moths. Mating and egg-laying will occur and the cycle begins again.

This will not kill the tree, but can cause flagging of branches. Since the larvae spend their lives inside the blisters, there are not chemical controls. Growers who may notice this damage can prune out blisters or crush them to kill the larvae inside.

ERIOPHYID MITES

Because temperatures have continued to be cool this spring, growers may still be seeing Eriophyid mites, or rust mites, moving on foliage of susceptible hosts. These may be found on many conifers, but especially spruce, true fir, hemlocks and pine (sheath mites when on pine). These cool season mites were found moving on Concolor firs this week in York



Eriophyid mites on fir [S. Gardosik, PDA]

County and on hemlocks in Schuylkill County. A hand lens is absolutely necessary to scout for these tiny, pale colored mites. If control actions need to be taken, make sure the miticide or insecticide used has rust mites or eriophyid mites listed on the label, because not all miticides are effective on these mites.

ENCOURAGING BENEFICIAL INSECTS

At this point of the season, many beneficial insects are also present in the field. These can include numerous species of lady beetles, lacewings, hoverflies, checkered beetles, spiders, and many more. Because these insects play a role in keeping many pests in check, growers should be trying to consider pest management strategies that can conserve these helpful insects. Consider allowing hedgerows of flowering plants that will serve as habitat for lady beetles and other beneficials. Also,



Multi-colored Asian lady beetle [S. Pickel, PDA]

when making chemical decisions, if possible, growers should choose insecticide options which target specific pests groups over broad spectrum choices.

ADDITIONAL RESOURCE

For a list of control options for insect and mite pests, the most recently updated list of Insecticides & Miticides for PA Christmas Tree Pests can be found at the following link:
<http://ento.psu.edu/extension/christmas-trees/publications/2013%20Christmas%20Tree%20Insecticides-Miticides.pdf>.

The next scouting report will be available Thursday, May 26, 2016.