

Christmas Tree Scouting Report #1 – 3/25/09

Weekly newsletter compiled by Sarah Pickel, PA Department of Agriculture

Welcome to another season of the Pennsylvania Christmas Tree Scouting Report. The reports of the 2009 season will include scouting information from the following individuals: Tim Abbey of Penn State's York County Cooperative Extension; Jay Bagley of the PA Department of Agriculture; Steve Derstine of JC Hill Tree Farm, Schuylkill County; Jim Fogarty and Kyle Halabura of Halabura Tree Farm, Schuylkill County; Galen May of Pine View Haven Farm, Franklin County; Darrel Mills of Tree of Life Service, Lancaster County; Karen Najda of the PA Department of Agriculture; Susan Newhart of Arcadia Trees, Susquehanna County; Mel Nye of American Green Corporation, Schuylkill County; Eric Rosenbaum of Rosenbaum's Farm, Berks County; Brian Schildt of Penn State University; Paul Shealer of Evergreen Acres, Schuylkill County and also Penn State's Carbon County Cooperative Extension.; and Cathy Thomas of the PA Department of Agriculture.

First, there are two resources that should be helpful to you this growing season. The Penn State University-sponsored pest forecasting network known as Pennsylvania Pest Information Platform for Extension and Educators," or PA-PIPE for short, is a website which provides Pennsylvania climate information such as accumulated growing degree days (GDD) and soil temperature, and also crop pest models. This information can signal growers to begin looking for certain tree pests. This website can be found at the following link: <http://pa-pipe.zedxinc.com/cgi-bin/index.cgi>. (Once there, click on the Map tab and browse the categories available on the far left.) Also, the *2009 Insecticides and Miticides for Christmas Tree Pests* sheet is now available on the Christmas tree website: <http://ctrees.cas.psu.edu>. (Simply select the link of the same name on the far left of the home page.) This is a listing of the chemicals registered for Pennsylvania broken down by pest.

The PA-PIPE climate information can be very helpful, but it is still beneficial to maintain temperature information on your own farm, as temperatures can vary even within townships. As of yesterday, in New Ringgold, Schuylkill County, there were 5 GDD and in Elizabethtown, Lancaster County, there were 13 GDD. If you have questions about how to calculate growing degree days, the following fact sheet from Cornell University is very helpful:

http://www.ccenassau.org/hort/fact_sheets/e100_growing_degree_days.pdf.

The GDD range for the emergence of adult White Pine Weevils is 7-58. The adult stage of this wood-boring pest (Fig. 1) is the stage that is susceptible to chemical control. The weevils emerge as daily average temperatures approach 50°F and move to the tops of host trees (Pines, Spruces, Douglas fir) to feed and lay eggs. Egg-laying will begin approximately 2 weeks after the adults emerge. Once the eggs are laid in the tree leaders, there will be no stopping the damage for this season. The time to spray for the weevils is within 7-10 days from the time weevils are first found in emergence traps or seen on the leaders of the trees. As of yesterday, growers monitoring emergence traps in Lancaster, Schuylkill and York counties have not found any weevils. If you would like more information on trapping for white pine weevil, visit: <http://ctrees.cas.psu.edu/pdfs/whitepinewvtraps.pdf>.



Figure 1 – White pine weevil adult
(Photo by Steven Katovich)

In York County this week, Eriophyid mites (Fig. 2) were found hatched from their eggs on Norway spruce. Referred to as rust mites on spruces and sheath mites on pines, this triangular-shaped peach-colored or clear mite is very tiny and only visible with a strong hand lens (15x or greater). These mites cause a discoloration of the needles which can cause Norway spruce to look rusty. On Colorado blue spruce, the mite often causes the blue color to fade. These mites can be treated with now with oil, as long as temperatures are above freezing. If treating with a miticide, growers may want to wait until more mites have hatched from the eggs. Not all miticides are effective on these mites so reference the *2009 Insecticides and Miticides for Christmas Tree Pests* sheet to select an appropriate miticides.



Figure 2 – Eriophyid mites (Photo by Sandy Gardosik)

Nymphs of Eastern spruce gall adelgid (Fig. 3) were beginning to wax over this week in York County. Once these nymphs are completely covered in wax, control with an insecticide or horticultural oil is less effective on this pest of Norway spruce. When covered in wax, these nymphs mature and lay eggs, which will hatch and then form galls. Apply your insecticide or horticultural oil now while the wax is still light, as long as temperatures are above freezing. The same goes for Cooley spruce gall adelgids, pest of Douglas fir and Colorado blue spruce. Growers should be scouting their trees to see if these adelgids are also beginning to wax over.



Figure 3 – Eastern spruce gall adelgid nymphs (Photo by Rayanne Lehman)

This is also a good time for growers to scout for Rhabdocline needle cast and Swiss needle cast. The article which follows this report, from Tracey Olson, Plant Pathologist for the PA Department of Agriculture, is a very helpful resource on these two diseases of Douglas fir.

The next scouting report will be available Wednesday, April 1st.

Rhabdocline and Swiss needle casts of Douglas fir

Now is a great time to inspect and scout for these two diseases. Douglas fir needle casts are common in PA, even in the landscape. Inspecting or scouting a large nursery can be a daunting task and looking for these, as well as other conifer pests can be time consuming. Trees that tend to remain wet for longer periods (shaded sites, densely planted, larger trees, northern slope, along a windbreak row, etc.) are most likely the first trees in a nursery to become infected and show symptoms of needle cast. Therefore, concentrate your scouting efforts for these diseases in these areas.

Distinguishing these two needle casts is somewhat easy. Rhabdocline and Swiss needle cast (SNC) can, and frequently do, occur in the same plantation, on the same tree, and even on the same needle. Determining which needle cast is present, or if both are present, is key to controlling these diseases.

Rhabdocline Needle cast

A Rhabdocline infected tree in March looks scorched. Current year needles are noticeably spotted, or mottled. The lesions are a brown-red-orange color. Examining the undersides of these infected needles will reveal nothing at this time (March). At budbreak, which typically occurs around the end of April through the first weeks of May, the lesions will be a bright orange color. The fruiting structures on the undersides will then be noticeably swollen like a blister, and split open. It is at this point that the fungicide regimen should start.

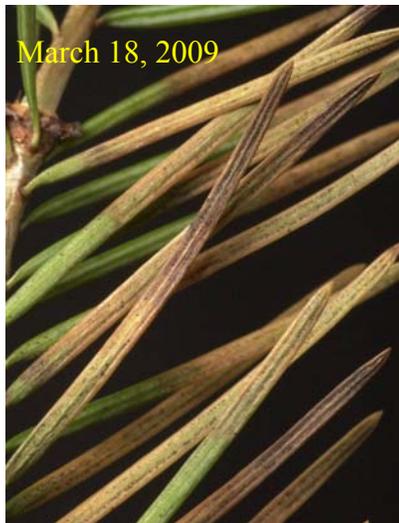


Swiss Needle cast

A Swiss needle cast infected tree looks as if it is suffering from drought or heat stress. Typically, current year needles look healthy except in severe cases of infection. Second and third year needles are most likely to exhibit symptoms of dieback of needle tips. Examining the undersides of these needles in March with a hand lens should reveal rows of small black fruiting structures on either side of the midrib giving it a “dirty” look as if soil or dust has accumulated on the needle.



These structures may occur on all ages of needles, even on needles that appear healthy, so it is important to examine many needles on a tree, not just current year symptomatic needles. Fruiting structures found on older needles that are attached to the tree are still capable of releasing spores.



Management

Fungicides used to control needle casts are protectants, and in order to be effective they need to be in place to protect the newly expanding foliage during the active period of spore release. It is not difficult to determine when *Rhabdocline* fruiting structures are mature and when spores are being released. During budbreak the structure will swell and the epidermis of the needle will split, exposing an orange mass of spores. The timing of spore release for SNC is not as easy to determine because there is no obvious visible change to the fruiting bodies. The most current spray recommendations for the control of SNC are based on those given for *Rhabdocline*. Sprays for SNC should begin between the second and third sprays for *Rhabdocline* or when new shoots are 1 ½ inches long. It is recommended that an additional fourth spray (applied three weeks after the third spray) be added to this program if SNC is present. Effectiveness of this program

for control of Rhabdocline can be determined the following winter by scouting for symptomatic current year needles. However, determining efficacy for SNC is not as easy since infected needles may remain attached, appear healthy, and serve as a source of spores for subsequent years. It should be assumed that fruiting structures on any needle of a tree might indicate a potential disease situation.

Recommendations for Rhabdocline and Swiss Needle Cast:

- All fungicides are protectants.
- Timing of first application is critical. Carefully scout symptomatic trees in spring for budbreak and fungus sporulation.
- Four fungicide applications * (Bravo - the most commonly used)
 - #1 - when 1st trees in plantation break bud.
 - #2 - one week after first application.
 - #3 - two weeks after second application.

(4th application necessary only if spring is prolonged by cool, wet weather, or Swiss needle cast is detected.)

#4 - three weeks after the third application.

Rhabdocline needle cast on left and center.

Swiss needle cast on right.

Photo taken on March 18, 2009 in Dauphin County, PA.

