PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT

2011, Report 1: March 23, 2011

Weekly newsletter compiled by Sarah Pickel, PA Department of Agriculture.

This is the first report of the 2011 growing season. Reports will be published weekly through the end of June and will include scouting data and life cycle information on various pests of economic concern for Christmas tree growers in the state of Pennsylvania. It will also include growing degree day (GDD) recordings from several locations across the state. Observations from several growers, extension educators, nursery inspectors and scouting professionals will be included each week. Thanks to Jay Bagley (PDA), Susan Newhart (Arcadia Trees), Scott Rebert (PDA), Brian Schildt (PDA) and Cathy Thomas (PDA) for contributing this week.

Before moving into the scouting information, I would like to stress the point that anyone who is involved with pest scouting for a farm should be using a hand lens (Fig. 1). A hand lens allows growers to closely examine damaged plant tissue for signs of the actual pests. The pictures in the scouting reports are often greatly magnified. In the field, many key characteristics which are important for pest identification are not visible to the naked eye. One recommended style of hand lens is a doublet lens with 10x – 16x magnification. There are many suppliers on the web, such as www.gemplers.com or www.greatlakesipm.com.

Figure 1: 16x hand lens (Cathy Thomas, PDA)

Growing degree day accumulations as of March 22 are 13.5 in Elizabethtown, Lancaster County, 16 in New Cumberland, York County and 0 in Susquehanna County. Growing degree days (GDD) are a measurement of heat accumulations during a 24 hour period. Insect activities throughout the season (such as emerging from overwintering sites, laying eggs, nymphs hatching, etc.) correspond to a range of GDD. If you are interested in tracking GDD for your farm, use a minimum/maximum thermometer to record daily high and low temperatures. To calculate GDD, use the following formula:

$$\frac{\text{Low Temp.} + \text{High Temp.}}{2} - 50°\text{F} = \text{Total GDD}$$

Add positive results to form an accumulated total, but ignore any negative results. For more info on GDD tracking, visit this Penn State University website: http://ento.psu.edu/extension/christmas-trees/growing-degree-days.

White pine weevil adults (Fig. 2) will emerge from their overwintering sites when GDD totals are 7 – 58. In Elizabethtown, Lancaster County, weevils were found in Teddars traps (Fig. 3) on Monday, March 21 and in New Cumberland, York County, weevils were found in traps on Monday and also on Tuesday, March 22. White pine weevils are tiny, long-snouted beetles with speckled brown, red-brown and white wing covers. They emerge from their overwintering site at the base of a host tree (pines, spruces, and occasionally Douglas fir) and begin to feed on the leaders of those hosts for about 2 weeks. They will mate during that time and after the 2 weeks will lay eggs in the tree leaders. It's important to time insecticide sprays to target the adults before eggs are laid in the leaders. When weevils are found, growers can spray the upper 1/3 of the tree with an appropriate insecticide. The adult weevils can be found through scouting and trapping. To

Figure 2: white pine weevil (Sarah Pickel, PDA)

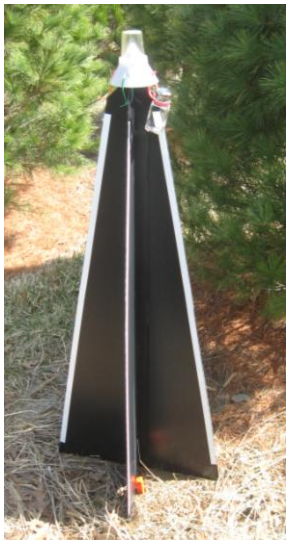

Figure 3: Teddars trap (Sarah Pickel, PDA)

scout for this pest, examine potential host trees close to an area that has had damage from this pest previously. Look for sap bubbles on the leaders of trees. Trapping can be done with pyramid-shaped Teddars traps baited with turpentine and denatured alcohol. See the article *Revised Teddar Trap Plan*s on the Penn State Christmas Tree Website (http://ento.psu.edu/extension/christmas-trees) for more information.

Two weeks ago in southern Northumberland County, a few Eriophyid mites (Fig. 4) were found feeding. This early season pest thrives in the cooler parts of the growing season. These mites are very tiny, so a hand lens is a must to see them. Even with a hand lens, viewing can be difficult. They are triangular in shape and a pale peach in color. They can be found on many conifer species. The rust mite species group can be found on spruce, fir and hemlocks, and cause foliage to appear rusted or gray. The sheath mite species group can be found on pines and give foliage a yellowed and sometimes stunted appearance. If the population is heavy, consider treating with a miticide. Carefully check the label, as not all miticides are effective against eriophyid mites.

Figure 4: Eriophyid mites (Sandy Gardosik, PDA)

Also in Northumberland, about half of the overwintering nymphs of eastern spruce gall adelgid (Fig. 5) were found to be partially waxed over. These tiny, black, sucking insects can be found tucked along the twig scales near the end of Norway spruce twigs. While uncovered, they are susceptible to insecticide sprays, but once they are completely covered over with waxy strands, they will be protected from insecticides. When they are covered over, they will lay eggs. The eggs will hatch around bud break and will and start to feed at the base of the buds and form a gall. The best time to treat for these insects is in the fall, after the overwintering nymphs have settled for the winter.

Figure 5: Eastern spruce gall adelgid nymphs (Rayanne Lehman, PDA)

In York County, Cooley spruce gall adelgids are just beginning to form wax around the perimeter of their bodies. These insects can be found on Colorado blue spruce, where they will form a gall like the eastern spruce gall on Norway spruce, or they can be found on Douglas fir, where the damage is completely different. On Douglas fir, the nymphs are found on the needles, not the twigs. They remain on the needles after they've covered over with wax and will cause the needles to kink and yellow. While the nymphs are uncovered, they can be killed with insecticides, but once they are covered over with wax, they are protected from these sprays. As with eastern spruce gall adelgid, the best time to manage this pest is in the fall.

Figure 3: Cooley spruce gall adelgid nymph (Sarah Pickel, PDA)

For growers interested in getting more information about these and other Christmas tree pests, there is a new resource available. The PA IPM Program team, along with a number of Pennsylvania's Christmas tree experts developed an Integrated Pest Management manual for Christmas trees. It was published in December 2010 by Penn State University College of Agriculture publications. For information on how to purchase this manual, call 814-865-6713, fax 814-863-5560 or e-mail AgPubsDist@psu.edu and ask about publication item # AGRS-117.

A list of Pennsylvania's registered miticides and insecticides is available at the Penn State Christmas tree Website, http://ento.psu.edu/extension/christmas-trees, entitled *2011 Insecticides and Miticides for Christmas Tree Pests*.

The next scouting report will be available March 30, 2010.