

Scouting for the Balsam Twig Aphid

by Jill Sidebottom, North Carolina State University



Sampling for BTA

just isn't enough BTA damage to worry about. Those years a grower could skip the twig aphid treatment and save a little money. But more importantly, we may be losing some of our organophosphate pesticides such as Di-Syston 15 G and Lorsban due to the Food Quality Protection Act. If some of these materials are taken from the market (those decisions should be made later this year), it will be a lot harder to apply a pesticide in the timeframe required for twig aphid control. Growers will need to pick and choose which fields really require treatment.

What will scouting for twig aphids involve? The first thing is a knowledge of the spider mite population in a field. Twig aphids aren't the only pest that our organophosphates control. They also control mites. If there aren't any twig aphids in a field, but there are spider mites, treatment is still necessary. That was a common situation this spring. The dry weather during the fall of 1999 allowed the build-up of spider mites. Even though we've had above average rainfall in April, we are still seeing spider mite problems. Therefore, even if a grower had a field with low twig aphid numbers, the spider mites would require a pesticide application. Therefore, a grower should scout in the fall or winter to determine if there are spider mite eggs waiting to hatch. In fields that do have mites, skip twig aphid scouting and go ahead and treat.

If spider mites aren't a problem, then twig aphids can be assessed by the third week in April – after tax day on April 15. Some years if hatch is early, this assessment can be made a little earlier. Scout twig aphids by placing something white into the canopy of the tree and beating the foliage vigorously several times over it. I use a white sheet of paper that has been laminated so that it doesn't get wet. I place the laminated paper on a clipboard so that it has a solid backing. Look for aphids that fall onto the sheet. You'll need a hand lens as the youngest aphids are very small.

I examine 15 to 20 trees per block of up to 2 acres in size. Keep track of the total number of aphids found on each tree sampled. Also take note of any predators found. This early in the season, treatments are necessary in trees nearing market if a

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The balsam twig aphid (BTA) is a common pest of Fraser fir in western North Carolina, found in almost every field. It causes needle curl, reducing the quality of the tree if the damage is extensive. Because of the ability of this pest to quickly mature and cause damage, recommendations have always been to treat for this pest the year of sale and year before sale to protect your marketable crop.

Our recommendations will be changing over the next few years. A new scouting protocol and treatment threshold are being developed for this pest. Several County Extension Agents and I have been scouting for the twig aphid extensively in 1999 and again this year. By 2001, we should have some solid recommendations.

Why the change? There are several reasons. First of all, the BTA is not a problem every year. There are natural cycles in pest numbers resulting in some years where there

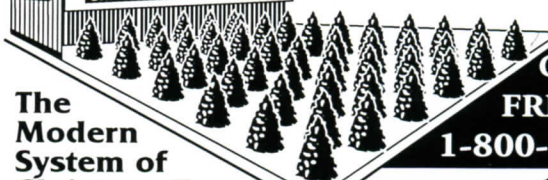
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total of only 3 or 4 aphids are found in the 15 trees examined. If only one or two aphids are found, come back in 7-10 days to scout again before the trees break bud. The aphids will have started to reproduce by then, and the numbers will start to build-up.

Twig aphid numbers are like a roller coaster. The numbers start out low. This represents the overwintering egg populations. Slowly these numbers build as the aphids mature and start laying live young. Like climbing in a roller coaster, the numbers get pretty high pretty quickly – in 2 or 3 weeks. And like a roller coaster, numbers will drop quickly even without pesticide application. In as little as 10 days, the numbers can be reduced by as much as 90% by predators feeding. Unfortunately, predators usually come in too late to prevent damage.

The population of twig aphids at bud break determine how much damage the trees will suffer. But it is the population in June that will determine the number of eggs for the following growing season. This can be greatly impacted by predator activity. It can also be impacted by past pesticide use.

Trees treated in June with Dimethoate for rosette bud mite control seldom need to be treated for the BTA the following spring. That's because the June treatment kills the BTA before it lays its eggs for the following year. Also, trees treated in mid-February or later for the balsam woolly adelgid with either Lindane or Asana will often not need further treatments for BTA. That's because the Lindane and Asana last long enough on the tree to kill the aphids that hatch out.

This method of scouting can also be used to determine if a pesticide application has worked. Sometimes because of applica-

tion conditions, treatments with Di-Syston or other pesticides applied with a mistblower don't work well. Scouting this way can help determine if a second treatment is necessary. We are also going to try this method of scouting to determine the presence of Cinara aphids, the big brown to black aphids that get in people's homes on harvested Christmas trees.

I want to give special thanks to the growers who have let us use their Christmas trees to see if we can scout for twig aphids. Some of them risked getting damage. It's only through the interest of growers and the hard work of Extension Agents that improvements to IPM are made. Be sure to look for training on twig aphid scouting this fall and winter. And next spring, make the commitment to try these new techniques.

Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical. For assistance, contact an agent of the North Carolina Cooperative Extension Service in your county.

Learn more about cultural practices at the NCCTA summer meeting and farm tour. See page 15.



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