

The 2007 Pest Management Survey

Jill R. Sidebottom,
Mountain Conifer IPM Specialist

Introduction

Last issue I reported on results from a pest management survey I conducted earlier this year of practices growers used in 2006. Farm size, farm equipment, seedlings set and seedling source, disease losses, animal damage and how growers access extension were all discussed. In this issue I will be sharing changes in insect and ground cover management and pesticide use.

Final Count

There were a few people who turned in surveys after the first article was written. The final count was 352 completed surveys representing 22,249.8 acres of Christmas trees.

Bugs still bugging us.

It's no surprise. Growers still have problems controlling insects and mites in their trees. But, fewer people are having problems with pests. When asked which pests you are having a harder time controlling than you were five years ago, most people marked they were having fewer problems (Table 1). The only pest reported as being harder to control was *Cinara* aphids, and in fact in 2006, *Cinara* aphids were a worse problem than they have ever been region-wide.

Table 1. Responses to the question, "Are you having more trouble managing the following pests than you were five years ago?" in the 2001 and 2007 Pest Management Surveys.

Responses	2001 Pest Management Survey	2007 Pest Management Survey
Balsam woolly adelgid	59.4%	31.6%
Balsam twig aphid	47.8%	20.5%
Spruce spider mite	42.0%	10.3%
Hemlock rust mite	38.2%	16.8%
Root aphids	9.6%	4.6%
<i>Cinara</i> aphid	6.5%	18.8%
Grubs	5.8%	2.6%
Haven't observed any additional pest pressure in pests in the past five years	19.1%	29.6%

Insecticide use down!!!

Insecticide use is actually way down – less than half what it was in 2001! This is based on the average pounds of active ingredient used per acre (ai/A) averaged over all farms and size classes of trees. For 2000, that value was estimated as 4.15 pounds ai/A. In 2006 it was estimated at just 2.09 pounds.

What caused this big change was a reduction in the use of both lindane and Di-Syston in the last six years (Table 2). These materials have a lot of active ingredient in them. In 2000 use was estimated at 3.0 lbs ai/A for lindane and 4.3 lbs ai/A for Di-Syston. Materials that have replaced these two materials include Dimethoate (which is now used on the most acreage), Thionex and Talstar (Table 2). These have somewhat lower amounts of active ingredient. For instance, if Talstar is used at 40 ounces per acre, it would result in just 0.2 lbs ai/A. The total number of insecticide treatments has also dropped somewhat by 12%.

Table 2. Percentage of Christmas tree acreage treated with insecticides and miticides used to control pests in 1994, 2000 and 2006.

PRODUCT	1994 Pesticide Use	2000 Pesticide Use	2006 Pesticide Use
Dimethoate	2.34%	21.2%	34.8%
Di-Syston 15 G	64.6%	49.6%	31.9%
Asana XL	11.8%	16.6%	13.3%
Thiodan	---	2.2%	11.9%
Talstar	---	0.3%	6.3%
Lorsban	5.8%	8.4%	4.6%
Sevin	0.2%	0.04%	4.0%
Metasystox-R	---	0.05%	3.5%
Savey	---	5.4%	3.0%
Diazinon	2.2%	1.0%	2.0%
Lindane	21.7%	23.8%	1.9%
Horticultural oil	3.0%	0.1%	1.3%
Sanmite/Nexter	---	---	1.0%
Morestan	14.3%	3.0%	---

FIRST PIONEER INSURANCE AGENCY, INC.

NATIONAL CHRISTMAS TREE ASSOCIATION WORKERS' COMP PROGRAM

- * Competitive Rates
- * Fully Insured Workers' Compensation Program



Visit our website

WWW.PIONEERINSURANCE.COM



FIRST PIONEER INSURANCE AGENCY, INC.

PO Box 941, Southern Pines, NC 28388

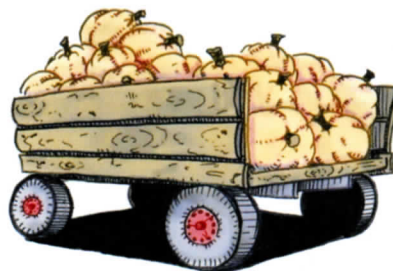
Phone (800) 547-1495 Fax (910) 944-6088

Email: agency@pioneerinsurance.com www.pioneerinsurance.com

OFFERING A LIABILITY PROGRAM FOR CHOOSE & CUT AND RETAIL LOTS

Optional Coverage for **Pumpkins**

U-Pick and Corn Mazes



Call for a Quote

Available in Most States

**NORTH CAROLINA
FRASER FIR**
The Perfect Christmas Tree

One big increase in insecticide use, however, was an increase in the number of growers treating for *Cinara* aphids. *Cinara* aphids were particularly bad in 2006 and this was reflected in survey results. In 2000, only 3.0% of growers reported treating for *Cinara* aphids while in 2006, 12.5% of growers did with 1,282 acres reported receiving treatments. These applications were made as early as August 10 with the most used material being dimethoate, followed by Thionex and then Talstar. Of these, 5.4% said they treat preventatively regardless if they find pests in their trees or not.

Top pest problems

Respondents were asked to mark their number one, two and three most important pest problems. The top vote getters were balsam woolly adelgid, *Phytophthora* root rot and balsam twig aphid. Though these pests have been around a long time, they are still giving people problems.

Ground cover management more refined

Growers continue to rely more on suppressing ground covers than killing them. Roundup is still the main material used. More than half (61.8%) of all growers reported leaving more ground covers than they did five years ago. Use of Simazine and Goal and really all other herbicides have continued to decline over the last six years (Table 3).

Table 3. Percentage of Christmas tree acreage treated with herbicides used to control weeds in 1994, 2000 and 2006.

PRODUCT	1994 Pesticide Use	2000 Pesticide Use	2006 Pesticide Use
Roundup	93.7%	94.9%	92.3%
Simazine	72.2%	38.8%	16.8%
Goal	43.8%	20.7%	10.7%
Garlon	Not used	7.8%	6.3%
Stinger	22.8%	11.7%	6.1%
Vantage	23.9%	14.7%	5.8%
Crossbow	0.9%	3.1%	5.0%

Use of chemical mowing with low rates of Roundup continues to increase. Broadcast Roundup suppression was used by only 25% of growers in 2000. In 2006, 40.7% of growers reported using this practice. The average rate of Roundup applied with a backpack sprayer was 20.3 oz/acre in 2000. This had dropped to 14.1 oz/acre in 2006. This is an average of both suppression and killing rates. The percentage of people using Roundup between 4 and 12 ounces increased from 37.7% in 2000 to 52.7% in 2006.

More people are using mistblowers to apply Roundup and other herbicides as well. Mistblowers were used on 16.4% of the total Christmas tree acreage. That compares to just 7.4% in 2000.

In addition to better managing the natural ground covers, more people are sowing ground covers such as clover. In 2000, only 12.3% of growers reported sowing ground covers. In 2006, 22.5% did.

More reliance on Roundup, more applications with mistblowers and lower rates of herbicides in general has resulted in 25.9% of growers seeing a decrease in herbicide costs. With costs on about everything going up, it was encouraging to see some people saving some money.

What are the end results of all these changes? The overall usage of herbicides has declined. In 2000, the total pounds active ingredient used per acre of herbicide was estimated as 1.75 pounds ai/A. Roundup accounted for 47.5% of this value and Simazine 36.5%. In 2006 it was estimated that only 1.40 pounds ai/A of herbicides was applied on average per acre of Christmas tree. Roundup accounted for a greater share – 63.1% of this and Simazine less – 22.4%. And when asked, "Were you satisfied with your ground cover management," 80.3% of growers marked "Yes."



A Wholesale Supply Catalog for the Real Christmas Tree and Wreath Industry

- Campbell Tree Colorant & Needlebond
- Wreath Machine, Rings, Picks, Bows
- Tree Bags, Tags, Stands, Waterers
- Balers, Netting & Howey Twine
- Tree Shaker & Yule Drill System
- Preservatives, Pruners & Lots More!

1-800-242-2019

Wautoma, WI

**V
E
L
D
S
M
A
&
S
O
N
S**

www.veldsma.com
1-800-458-7919

*Year Round Products
for Year Round Profits*

Scouting

A big part of IPM and pest management is scouting. Fully 71.5% of growers reported scouting more than they did five years ago. Most did their own scouting with 84.6% saying they scout themselves, 11.7% saying a family member scouts for them, 9.1% had a Hispanic worker scouting for them, 8.3% had a designated employee and 7.4% hired someone specifically to scout. Still, people aren't always sure of what they are seeing. More than 60% of all growers thought they could recognize the major Fraser fir pests including twig aphids, woolly adelgids, and spider mites. But as the pests get smaller, fewer people feel confident identifying them. For instance only a quarter of all growers thought they could recognize a spider mite egg. And though 67% of growers could recognize an adult lady bug, only 18% could recognize the larva that is actually doing most of the feeding. Only 11% thought they could recognize a hover fly larva that is one of our most important predators. Many folks marked that they thought their scouting skills were lacking.

Pesticide safety a big concern

And what are people worried about most when it comes to pesticides? The top concern voiced by growers was pesticide safety with 41.9% of all growers surveyed marking this their number one pesticide problem. Most growers — 72.4% — apply their pesticides themselves. Only about 1/3 (28.5%) have employees that apply pesticides and 13.4% hire a contract pesticide applicator to make applications. Growers were also concerned about pesticide application and coverage, increased government regulations and the increased cost of pesticides.

Summary

With both insecticide and herbicide use down, things are looking good for the Christmas tree industry. Growers are becoming more refined in how they battle both pests and apply pesticides. Safety is on everyone's mind. Growers are learning how to scout and teaching their employees, though recognizing the smallest pests and predators are still hard for a lot of people. The biggest changes have been in how growers manage their ground covers and this has resulted in cost savings for quite a few people.

With the cost of everything going up, integrated pest management continues to be one of the best ways to cut costs, maintain reliable quality of trees and protect the natural resources we all depend on. It's encouraging to see the positive changes in the industry and to know that growers still depend on the NC Cooperative Extension to give them working solutions to their problems. 🌲