

Title of project: Increasing Utilization of Integrated Pest Management Tools in the NYS Christmas Tree Industry

Project leaders: Elizabeth M. Lamb, Brian C. Eshenaur

Cooperators:

Stephanie Mallozzi	Dutchess County
Walt Nelson	Monroe County
Chuck Schmitt	Fulton/Montgomery Counties
Alexis Alvey	Suffolk County
Laurel Gailor	Warren County
Bret Chedzoy	Schuyler County
Carl Albers	Steuben County

Abstract: The approximately 700 NYS Christmas tree growers would benefit from implementing more Integrated Pest Management practices in a sustainable production system on their farms. The objective of this project is to assist them in increasing their use of IPM tools by demonstrating those practices on 9 Christmas tree farms. Working with growers and Cornell Cooperative Extension Educators, we will identify those pest management practices beneficial to each farm, trial them on-farm, and work with the farmers to determine which can be successfully implemented. In order to reach a broader audience, the IPM tools will be demonstrated through on-farm Open Houses with the growers and Educators available for discussion. Data and experiences from this project will be used to create an education plan for continued increase in use of IPM tools on NYS Christmas tree farms.

Justification: Integrated pest management (IPM) combines information on pest presence and identification with the available methods of control to determine the most effective, economical, and environmentally appropriate method of managing pests in a crop. IPM is considered a best management practice and is part of a sustainable production system.

Most NYS Christmas tree growers use some aspects of Integrated Pest Management (IPM) in their production, but in a 2007 survey over 50% of the 155 respondents said they would like additional training in IPM practices and pest identification. Demonstration of practices on-farm combined with a comparison of current and improved practices is one of the best ways to expand use of IPM to a wider audience of Christmas tree growers. On-farm projects provide a way of collecting real world data on potential economic and environmental benefits of improving pest management through the increased use of IPM tools.

Objectives: The objective of this project is to increase the use of available IPM tools by Christmas tree growers in NYS. To meet that objective we will 1) develop and evaluate growers' implementation of improved IPM on 9 NYS Christmas tree farms, 2) based on this experience, extend science based information on IPM to a wider group of NYS Christmas tree growers through on-farm Open Houses and industry presentations, and 3) create an education plan based on real-world experiences and data to continue the increase in use of IPM tools in the NYS Christmas tree industry.

Procedures:

Task/Project Activity	Personnel Responsible	Timeframe
Year 1		
Create scouting forms and scouting training for CCE Educators	Lamb, Eshenaur	Jan/Feb 2010
Identify growers	CCE Educators	Jan/Feb 2010
Visit sites and meet with growers and CCE Educators to introduce project	Lamb, Eshenaur	Jan/Feb 2010
Collect baseline information during season	CCE Educators	Mar – Oct 2010
Visit sites once during season	Lamb, Eshenaur	Mar – Oct 2010
Create plan for improved IPM with Educators for each farm Scouting training if necessary	Lamb, Eshenaur CCE Educators	Oct/Nov 2010
Year 2		
Meet with Educators and growers to discuss improved IPM plan	Lamb, Eshenaur	Jan/Feb 2011
Scout, keep records, implement improved IPM plan with growers, collect information	CCE Educators	Mar – Oct 2011
Visit sites once during season	Lamb, Eshenaur	Mar – Oct 2011
Plan, advertise and hold Open Houses at farms Create pre and post-tests to evaluate IPM adoption and intent to adopt improvements	Lamb, Eshenaur CCE Educators	Apr - Aug 2011
Evaluate plan for improved IPM with Educators for each farm, document successes	Lamb, Eshenaur CCE Educators	Oct/Nov 2011
Year 3		
Meet with Educators and growers to discuss improved IPM plan and practices growers intend to adopt	Lamb, Eshenaur	Jan/Feb 2012
Collect information from growers on pest management activities	CCE Educators	Mar – Oct 2012
Visit sites once during season	Lamb, Eshenaur	Mar – Oct 2012
Survey 2011 Open House attendees to determine level of adoption of IPM practices based on attendance	Lamb, Eshenaur	Mar - Oct 2012
Evaluate growers' improved IPM with Educators for each farm, document successes	Lamb, Eshenaur CCE Educators	Oct/Nov 2012
Create education plan for continuing training in increasing utilization of IPM tools on Christmas tree farms	Lamb, Eshenaur CCE Educators	Oct – Dec 2012

Results to date:

The primary activity for 2011 was “Scout, keep records, implement improved IPM plant with growers, collect information”, which was carried out by the CCE educators, for the most part. This is the basis for improvement on all the farms so it is extremely important. I have attached the reports from the CCE educators and those who worked with growers throughout the year (some are from phone interviews) for more detail.

As we continue with this project, it is evident that the growers started at different levels of IPM and react differently to suggestions for improvement. However, it is clear that in all

cases there is a good rapport between the CCE educators and the growers and that they see value in the project.

Christmas Tree IPM Grant Progress Report
November 2011

Chuck Schmitt
CCE Albany County (farm is in Fulton County)

I personally scouted the Goderie Tree Farm (Fulton Co.) in April, May, June, July and September of 2011. Each visit required 3 to 3.5 hours. After each visit I communicated with the owners about what I found and how they should respond. They were very helpful and accommodating providing a Gator for my use. This allowed me to cover many more fields that I would have otherwise. I looked at a minimum of 50 trees of the major tree species present on the farm at each visit. I was able to point out areas where pests such as needle cast fungi, spider mites and rust cropped up. We also discussed weed control and timing strategies to gain better control of problem weeds. This farm does a good job with controlling vegetation; the biggest challenge is controlling goldenrod.

I did not do a soil test this season, but plan to send some samples in for nutrient analysis in 2012. This is a very clean well run operation that tends to catch problems early and address them appropriately. They have also regularly expressed their appreciation for my help and the support of NYS IPM program in making this program possible.

Stephanie D. Radin
CCE Dutchess County

Two growers participated in the IPM demonstration/scouting education program; Steve Abel of Abel's Christmas Trees, Verbank and Glen Wade of Pleasant View Farm, Pleasant Valley. Scouting began in April with scouting for white pine weevil and assessment of how trees survived the harsh winter, which consisted of record snowfall, low temperatures and ice storms. Soil samples were taken at the end of May and sent to Agro-One, the soils lab affiliated with Cornell as well as Penn State's soil test lab to do a comparison of the results. There was some variation in pH results between the two labs. Penn State's fertilizer recommendations were more comprehensive than Agro-One. Both growers do not fertilize their trees. Scouting was done approximately every two weeks utilizing the scouting forms in the IPM Field Guide. The primary problems this year were Swiss needlecast and elongate hemlock scale. The growers kept a calendar and will compare next year's data to this year's data to see if a pattern emerges.

Elizabeth Lamb**NYS IPM (Farm is in Onondaga County and grower has another farm in St Lawrence County)**

I visited the Jordan farm in July. Weed management was a major topic of discussion, primarily the biological activity of herbicides and what to expect from them. We had had earlier phone discussions and samples/photos sent because of an outbreak of fir fern rust, which other growers in the region also had. I was very happy to hear Rob and Cathy Jo say that they wanted to know what it was before they treated it, as other growers in the region responded to the outbreak with inappropriate spray applications. Rob also indicated that they wanted to upgrade their pesticide reports to include information on the success or failure of pesticide treatments. In both cases, he initiated the comments, which leads me to believe that he is showing, and acting on, an increased understanding of IPM practices.

Brian Eshenaur**NYS IPM (Farm is in Ontario County)**

I made 4 visits to the farm over the growing season for scouting and trouble-shooting. A problem with mites was discovered and discussed. Also, we discussed root issues, including Phytophthora root rot and the effect of environmental stresses such as excess rain and drought.

The grower did plant several test plots of clover as a cover crop between the tree rows, which we will evaluate in the spring. Soil tests will be taken in the spring, as well as an early scouting for mites to emphasize early control.

In my opinion, the grower shows an increased awareness of IPM and what changes he could make to improve his pest management.

Walter Nelson**CCE Monroe County****Christmas Tree IPM 2011 Summary****Issue:**

Christmas tree growers are unsure of a reliable and cost effective protocol for IPM in their plantation.

Response:

CCE Monroe County's Christmas Tree IPM effort worked with two growers: 1) predominately Douglas fir with young blocks of blue spruce and true fir. 2) mix of Douglas fir, true fir and spruce. Both have choose and cut operations as well as wholesale clients. Initial assessment of the two participating plantations occurred at bud break. A second assessment occurred midsummer and a third late summer. Base line soil samples were taken after initial assessment, with results conveyed to grower with interpretation. Phone, email follow up on topics of significance occurred shortly after each assessment. Several additional consultations relating to pest management and cultural practices occurred during the growing season. Participants received

Pests and diseases of greater interest during the assessments:

Rhabdocline needle cast
Rhizophaera needle blight of fir
Rhizophaera needlecast of spruce
Swiss needle cast
Cooley spruce gall adelgid
Eastern spruce gall adelgid
Meadow Vole
Pales weevil
Pine Spittlebug
Pine Tortoise Scale
Spruce spider mites
White Pine Weevil

Acomplishments: 1) An infestation of spruce spider mites was recognized early and only a targeted area of the spruce planting was treated. No spruce spider mites were found in the area the rest of the growing season. 2) With correct identification of Swiss needle cast a management strategy was implemented. By first hard frost no evidence of new Swiss needle cast infections were evident.

Resources supporting the project include:

Penn State IPM scouting guide <http://pubs.cas.psu.edu/FreePubs/pdfs/agrs117.pdf>
Insects that Feed on Trees and Shrubs, Johnson, W.T. and H.H. Lyon. 1988. 2nd edition.
Diseases of Trees and Shrubs Sinclair, W.A., H.H. Lyon and W.T. Johnson. 1987. CU Press
Christmas Tree Pest Manual 2nd edition, USDA Forest Service, North Central Experiment
Station, www.na.fs.fed.us/spfo/pubs/misc/xmastree

Roger Ort
CCE Schuyler County

My work with the grant was mainly to do a soil test at both growers. Bill Mourey's test we received late in the summer and at that time we found out he had a buyer for the farm and was moving. We will try to work with the new owners to keep moving forward. We had done a monthly scouting of Bill's trees all year and found mites on a few occasions but none like the year we started. As for Joe we were only able to get out late in the year to do the soil sample and it has not been returned yet. Every time we wanted to seed the clover for the cover crop trial we were rained on and we decided to wait for spring 2012 to try again.

Carl Albers
CCE Steuben County

I collected six soil samples with cooperator Andy Murphy at different locations across his Christmas tree farm. We discussed preliminary soil fertility and liming strategies at that time; later I followed up with specific recommendations based on the Agro-One soil test results, and had further discussions during a follow up visit. I also collected two Christmas

tree samples, one from several Douglas fir trees and a second from a few Canaan firs. These were submitted to the Cornell Plant Disease Diagnostic Clinic for evaluation. Upon receipt of the results these were shared with Mr. Murphy and they were discussed in further detail during a follow up visit with Dr. Elizabeth Lamb, NYS-IPM Program. During the course of the two visits we covered soil fertility and liming options, and pest control including deer exclusion, disease and insect control, and weed management options. Mr. Murphy is relatively new to the Christmas tree business and expressed his appreciation for the assistance he has received. He is a pleasure to work with because he has implemented many of our suggestions, and is trying to adopt as many best management practices as time and money allow. Best of all it has been gratifying to see the great progress he has made in understanding pest biology, scouting and control options.

**Alexis Alvey
CCE Suffolk County**

I coordinated a visit with Lee and Andy Senesac, the weed management specialist for Suffolk County out at the farm and we discussed weed management options. In a later visit, weeds continue to be of concern, primarily because he doesn't have many other pest issues. We did see and identify some bagworms, also.

Implications:

There is need for increased programming, as well as one-on-one assistance, for Christmas tree growers to improve their level of IPM implementation. The growers in this project are all actively participating with the CCE educators in improving their pest management activities.