

Final Report

Increasing Utilization of IPM Tools in the NYS Christmas Tree Industry

Contract number C200728
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Abstract:

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 also 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. The long-term objective of this project was to increase the use of available IPM tools by Christmas tree growers in NYS based on current NYS Christmas tree growers' use of IPM and knowledge gained while working with them to expand their level of adoption. Using knowledge gained from 10 growers and at 4 on-farm Open Houses, we created a plan for the development of educational materials and how to extend them to continue the expansion of IPM and the production of quality trees by NYS growers in the future. As before, we found that most growers use some IPM tools but all could increase the level of IPM they use. We have a better idea of which areas are likely to be productive and some educational methods to encourage them. We also see some preliminary indications that increasing IPM is reducing pesticide use for Christmas tree farmers.

Project Summary

1. Background and motivation

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. We have also seen an increase in the use of IPM techniques, and the need for information on them, based on interactions with growers through the Christmas Tree Farmers' Association of NY (CTFANY) educational programs and other grower programs, such as the annual Hudson Valley Christmas Tree Twilight meeting sponsored by the local Cooperative Extension offices.

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 also 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.

2) Project objective

The long-term objective of this project was to increase the use of available IPM tools by Christmas tree growers in NYS based on current NYS Christmas tree growers' use of IPM and knowledge gained while working with them to expand their level of adoption. Using knowledge gained from 12 growers and at on-farm Open Houses, we created a plan for the development of educational materials and how to extend them to continue the expansion of IPM and the production of quality trees by NYS growers in the future.

Project Approach

Activities and Tasks

1. Identification of Cornell Cooperative Extension Educators interested in participating in the project.

Seven educators had indicated an interest in the project at the time the grant was written:

Stephanie Mallozzi Radin
Walt Nelson
Crystal Stewart
Alexis Alvey
Laurel Gailor

Chuck Schmitt
Nora Catlin

Dutchess County
Monroe County
Fulton/Montgomery Counties
Suffolk County
Warren County

Bret Chedzoy
Carl Albers

Roger Ort
Stephanie Mehlenbacker

Schuyler County
Steuben County

During the project, several changes in personnel occurred as noted above, because of retirements or changes in job status. All counties remained active in the project with the exception of Warren County.

2. Identification of growers to participate in the project.

We had intended to have one grower per educator but additional growers were interested, so we had a final total of 12 grower participants. These growers are diverse in region, size of operation, years in business, educational and employment background, and previous use of integrated pest management in their operations.

Dutchess County	Steve Able, Abel Tree Farm, Verbank NY Glenn Wade, Plains View Farm, Lagrangeville NY
Fulton County	Pete Goderie, Goderie's Tree Farm, Johnstown NY
Monroe County	Dave Woodward, Woody Acres, Penfield NY Pete Danish, Morgan Hill Christmas Tree Farm, Scottsville NY
Onondaga County	Rob Brown, Three B's Tree Farm, Jordan NY
Ontario County	Dick Darling, Darling's Tree Farm, Clifton Springs NY
Saratoga County	Garth Ellms, Ellms Christmas Trees, Ballston Spa NY
Schuyler County	Bill Mourey, Buttonwood Tree Farm, Reading NY Joe Stevenson, West Hill Tree Farms, Montour NY
Steuben County	Andy Murphy, Stephens Tree Farm, Andover NY
Suffolk County	Lee Itzler, Elwood Pumpkin and Christmas Tree Farm, Huntington, NY

3. Creation of survey and scouting/training materials

Personnel of the NYS IPM program had already created the Elements for Christmas Tree Integrated Pest Management in New York State. Elements of IPM are lists of procedures that could be used by growers who use IPM to produce their crops. They are specific to a production system and are intended to cover a broad range of activities that can be adapted by each grower to fit their own situation. In some cases, for example vegetable crops, point values are assigned to each activity and the totals are used to determine whether a grower's crops qualify as 'grown with IPM'. In the case of Christmas trees, there is no

official use of the Elements, but they can be used as a grower self-evaluation or education tool.

We used the Elements for Christmas Tree IPM as a baseline and final survey to gather information about the project growers in specific and as a group representing the Christmas tree growers of NY, and to evaluate change in practice over the course of the grant.

No scouting or training materials were created specifically for this project. CCE Educators were already well skilled in working with growers on scouting and the growers' needs were quite variable. As needed, information was collected or created and provided to the educators or growers. The Cornell Pest Management Guide for the Production of Trees and Shrubs and the Branching Out scouting newsletter were provided to each grower as part of these scouting and training materials.

4. Site visits throughout grant period

Educators visited farms throughout the grant period as needed. In many cases, the educators would assist the growers with their scouting on a regular basis during the primary growing season. PIs visited the farms once each year with the educator to discuss progress and needs of the growers.

5. On-farm Open Houses

The intent was to hold an Open House at each farm or at least in each county during the second year. In order to have more results to demonstrate, it was decided to hold the Open Houses in 2012. However, the logistics of holding 9 Open Houses in the spring and summer of 2012, so as not to compete with each other or the CTFANY summer meeting for participants, lead us to decide to hold some of the Open Houses after the grant period had ended.

In addition to the official grant supported Open Houses shown below, information gathered during the grant was provided to Christmas tree growers at other programs, as noted in the second table.

Open Houses

Location	Date	Number attending	Grant partners participating	CCE participating
Red Barn Christmas Tree Farm Brainardsville, NY	October 12	35	Rob and Cathy Jo Brown	E Lamb
Goderie's Tree	September 22	25	Pete Goderie	E Lamb

Farm, Johnstown				B Eshenaur C Schmitt
Shamrock Christmas Tree Farm Mattituck	July 10	30	Lee Itzler	E Lamb A Alvey
Abel's Trees, Verbank	June 27	35	Steve Abel Glenn Wade	E Lamb B Eshenaur S Radin

Other public events with Christmas tree IPM information presented, based on information from baseline data and grower experiences

Location	Date	Number attending	Relevant topics	Event	Grant participants
Stokoe's Christmas Tree Farm, Scottsville	September 6	40	Weed id and management Disease and insect management	NY Farm Viability grant program – B Eshenaur	B Eshenaur E Lamb
Empire Evergreens, Painted Post	July 20-21	100	Weed management IPM for new growers	Christmas Tree Farmers' Association of NY summer meeting	E Lamb
Cornell Cooperative Extension of Steuben County Bath	March 20	25	Disease and insect identification and management	Southern Tier Christmas Tree Growers annual meeting	E Lamb C Albers

Open Houses planned for 2013

March or later – with the Southern Tier Christmas Tree Growers group and cooperatively with Steuben and Schuyler County Cooperative Extension (Stephanie Mehlenbacher and Roger Ort)

June – Darling's Tree Farm, Clifton Springs NY

Late summer – Monroe County

Fall – North Country with Rob Brown hosting

6. Pre and post surveys of primary growers and Open House participants

The Elements of IPM survey was completed by each grower at the first visit with the PI and the CCE Educator. Of the 11 growers still available at the end of the grant period, 6 redid the survey as a method of evaluating change in practice. The remaining 5 will be surveyed in early 2013 when their schedules permit, either in person or by phone. The results of these surveys are described in the following section.

While the intent was to survey Open House participants, these surveys were not completed. A wider survey of Christmas tree growers will be completed during 2013 and this will include questions on participation in Open Houses and other IPM programs and what practices have been adopted as a result of the educational programs.

Significant results and conclusions

1a. Initial survey results

Values based on 12 responses unless otherwise noted in parentheses. Non-responses may be due to non-applicability of question to grower, or slight change in questionnaire during surveying

PRE-PLANT IPM CONSIDERATIONS

Activity	Percent growers responding yes
Match appropriate Christmas tree species to the site conditions, especially considering soil drainage characteristics.	75
Inspect plants upon arrival and quarantine those with signs of infection or insect infestation or poor vigor/root system.	75
Determine tree spacing to allow good air movement and to allow enough room for equipment.	100
Map areas that will be planted within the next year paying particular attention to weed species that will be difficult or impossible to control after planting	27 (11)
Plan plantings so blocks of land will be open to rotation and do intensive weed management.	27 (11)

PRE-GROWING SEASON IPM CONSIDERATIONS

Activity	Percent growers responding yes
Calibrate pesticide application equipment	54 (11)
Inspect and clean pesticide storage and mixing areas	91 (11)
Maintain an inventory of pesticides	72 (11)
Ensure all personal protective equipment is clean and stored properly	72 (11)
Remove trees with (chronic/severe/untreatable) pest problems that are likely to infect/infest other trees	100

CROP MANAGEMENT

Activity	Percent growers responding yes
Keep complete records of soil test results and fertilizer frequency	41
Use soil analysis, to determine appropriate fertilizer programs	27 (11)
Record dates of budding, and significant weather events	8
Use growing degree days in your pest management	27 (11)
Test water source(s) used for irrigation and pesticide spray mixtures for pH level and alkalinity	8
Adjust tree species grown as pest pressures dictate	92

GENERAL PEST MANAGEMENT

Activity	Percent growers responding yes
Develop a plan for pest management based on time of season, pest thresholds, and available management options	75
Scout regularly for insect, and disease problems, using a plan that covers all tree species and planting areas.	67
When scouting, inspect trees thoroughly, including the interior needles and lower branches.	83
Identify all insect, weed and disease problems	66

Maintain scouting and pest control records in order to predict pest problems	8
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IN-SEASON INSECT MANAGEMENT

Activity	Percent growers responding yes
When possible, remove infested plant parts prior to insect emergence. Examples: Removing white pine weevil blighted shoots before mid-July and removing galled tips containing the spruce gall adelgids before the galls open in late July	72 (11)
Choose insecticide products carefully so beneficial insects are not killed when pests are being controlled, if at all possible	60 (10)
Use insecticides only when pest populations reach potential to damage crop	70 (10)

IN SEASON DISEASE MANAGEMENT

Activity	Percent growers responding yes
Maintain adequate spacing between plants for good air circulation	92
Remove individual trees severely damaged by diseases such as needlecasts	100
If records indicate there is a potential for disease development, apply fungicides at the appropriate time and frequency based on environmental conditions	100 (9)

IN SEASON WEED MANAGEMENT

Activity	Percent growers responding yes
Scout fields for weeds, and identify weed species, especially those that are difficult to control	58
Use groundcover management techniques that will reduce soil erosion, nutrient runoff and herbicide use	66
Control weeds in vacant fields and land bordering production area to reduce weed, and disease movement into Christmas trees	64 (11)
Clean equipment before moving to a new location to prevent movement of weed seeds or vegetative portions to new field	36 (11)

Use mowing and/or effective herbicides at the recommended time of year for dominant or difficult to control weeds	100
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NUISANCE WILDLIFE MANAGEMENT

Activity	Percent growers responding yes
Practice good groundcover management since moles, rabbits, and groundhogs are more problematic where vegetation is thick	77 (9)
Follow all wildlife management laws, get appropriate permits	100 (9)
Use control measures other than pesticide baits for groundhogs, mice, moles, rabbits, and voles	63 (8)
If deer pressure is high enough consider fencing options	30 (3)

GROWER IPM EDUCATION

Activity	Percent growers responding yes
Train employees in IPM practices	81 (11)
Learn to recognize beneficial insects and/or predators/parasitoids that naturally control pests and protect these natural enemies of tree pests	25
Have a current year's copy of Pest Management Guide for Commercial Production and Maintenance of Trees and Shrubs	67
Attend one or more university extension programs or industry conferences per year	92

SUPPLEMENTAL QUESTIONS

	Percent growers responding yes
If you come upon a problem you don't recognize do you identify the pest?	100
How?	100% said Cornell Cooperative Extension
Do you have a map(s) with – soil drainage patterns, particular weeds, tree species, etc.	25

What IPM project would you like to work on with us?

This question was included to help us better tailor the work the educator would do with the grower to the situation. Growers were allowed to make as many suggestions as they wished.

	Percent requesting
Scouting	42
Soil testing and fertility	33
Record keeping	33
Weed id and management	25
Insect and disease id and management	25
Groundcover management	17
Mapping	17
Sprayer calibration	8
Use of growing degree days (GDD) to schedule pesticide applications	8
Pesticide schedule management	8
Assessment of planting stock	8

1b. Discussion

The 12 growers included in the grant may be considered a random sample of NYS Christmas tree growers, although they may have self selected for an interest in, or understanding of, IPM.

The responses in the survey are those given by the growers. Often there are nuances that come out during the survey that are difficult to include in table format, in part because of the complexity of some of the Element statements. For ease of presentation, 'sort of' as an answer was included as a 'No' answer as it usually indicated that the grower followed part of but not all of the practice. Therefore, the percentages may be somewhat conservative. Using the Elements as a survey has given us good background for improving the Elements as a teaching tool, an unexpected benefit.

However, there are some clear results.

1. All Christmas tree growers use some practices that are consistent with IPM but all growers could increase their use of IPM.

- The concept of spacing for air movement and equipment usage is well understood
- Most growers remove trees seriously damaged by insects or disease to reduce spread
- In general, insecticides, fungicides and herbicides are used appropriately, although there are improvements to be made.
- Disease management IPM activities are more common than insect and weed management IPM activities
- Changing to tree species with fewer pest problems is very common

- Growers will ask for assistance in identifying a new pest

Some activities are rarely done for reasons other than IPM

- Planning new plantings for rotation is often limited by the lack of available land
- Deer fencing is often too expensive to consider as an option

There are some clear indications of the need for additional education

- Identification and understanding of beneficial insects
- Methods for making mapping of farms easier
- Calibration of pesticide equipment
- Methods for making record keeping easier
- Methods for planning pesticide timing, including using growing degree days
- The importance of cleaning equipment to prevent moving weed seeds and diseases or insects

The growers' suggested projects give us a good indication of where they feel they need additional information and/or assistance. We thought scouting might be the primary request because of the time needed to do scouting and its perceived difficulty. We were impressed that growers already had good ideas as to what aspects of IPM could be improved on their farms.

2a. Final survey results

The same survey questions were used for the final survey. Initial and final results were compared for each of the 6 growers for which we had both surveys at the end of the grant period. Very rarely did results change from a Yes answer to a No answer, which is to be expected. Results are tabulated here as growers who showed a change from not using a procedure at the beginning of the project to using it at the end of the project.

Changes in survey results based on final survey

(Activities are listed in the same order as the Elements in the initial survey above. If an activity is not listed, there was no change in the number of growers answering Yes)

Activity	Increase in number of growers using this procedure
Match appropriate Christmas tree species to the site conditions, especially considering soil drainage characteristics.	1
Map areas that will be planted within the next year paying particular attention to weed species that will be difficult or impossible to control after planting	3
Plan plantings so blocks of land will be open to rotation and do	1

intensive weed management	
Calibrate pesticide application equipment	1
Maintain an inventory of pesticides	1
Ensure all personal protective equipment is clean and stored properly	3
Keep complete records of soil test results and fertilizer frequency	2
Use soil analysis, to determine appropriate fertilizer programs	3
Record dates of budding, and significant weather event	2
Use growing degree days in your pest management	2
Adjust tree species grown as pest pressures dictate	1
Scout regularly for insect, and disease problems, using a plan that covers all tree species and planting areas.	1
When scouting, inspect trees thoroughly, including the interior needles and lower branches.	2
Identify all insect, weed and disease problems	2
Maintain scouting and pest control records in order to predict pest problems	2
When possible, remove infested plant parts prior to insect emergence. Examples: Removing white pine weevil blighted shoots before mid-July and removing galled tips containing the spruce gall adelgids before the galls open in late July	1
Choose insecticide products carefully so beneficial insects are not killed when pests are being controlled, if at all possible	1
Use insecticides only when pest populations reach potential to damage crop	2
Scout fields for weeds, and identify weed species, especially those that are difficult to control	2
Use groundcover management techniques that will reduce soil erosion, nutrient runoff and herbicide use	1
Control weeds in vacant fields and land bordering production area to reduce weed, and disease movement into Christmas trees	3
Clean equipment before moving to a new location to prevent movement of weed seeds or vegetative portions to new field	1
Train employees in IPM practices	1

Learn to recognize beneficial insects and/or predators/parasitoids that naturally control pests and protect these natural enemies of tree pests	1
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2b. Discussion

Responses were not always what we expected based on the activities emphasized by the educators. For example, cleaning of personal protective equipment was not a specific request by any grower, yet 3 more growers included that in the final survey. On the other hand, scouting was specifically requested as a project goal by 4 growers, and actively done or discussed by all the educators, yet only 1 additional grower included it for diseases and insects and 2 for weeds.

The number of different activities included, plus the percentage of surveyed growers adding them was greater than expected. Often with a project such as this, there is little immediate measurable change. The increases in mapping and the use of soil tests for fertility decisions are encouraging. Once the remaining surveys are completed, we will redo this table.

3a. Grower reactions to the project

A series of open-ended questions were included with the final survey in order to gauge the effects of the project.

What did you learn from the project?

		Number giving this answer
Scouting	Starting earlier	1
	More often	2
	Improved method	4
	Use for evaluating effectiveness of treatments	1
Pest identification	Insect	3
	Disease	2
	Weed	1
Less spraying		1
Soil testing		1
Liming and fertilization practices		1
Air flow for disease management		1
Ground cover management		1
Disease management		1
Link between tree species/plant health and		1

environment/location		
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What new procedures are you planning on or have already implemented on your farm?

Each farmer listed at least 1 and as many as 3 procedures.

Improved scouting
Improved weed management through timing of herbicides
Removal of insect infested trees to reduce spread
Groundcover management techniques (2 growers)
Using blocks of the same species of trees to make pest management easier and reduce amount of pesticides
Choice of tree species with fewer pest problems
Record keeping, in particular noting effect of pesticide treatments
Tagging trees with issues to keep track of them
Trialing new techniques, species and products (on a small area of the farm)

Did this project reduce unnecessary pesticide applications?

While this is not a primary goal of the project, it is a primary goal of IPM and of interest for that reason.

Yes, used more oil
Yes
Yes, sprayed only herbicides in 2012
Oh, yeah! And we changed the chemicals we are using to more appropriate ones

3b. Discussion

We would expect the initial project choice list and the ‘what did you learn’ list to be similar at least, and scouting and pest identification are high in both. The differences in the two lists support the continuing need for education mentioned previously, on topics such as record keeping, calibration, and use of GDD, for example. Specific tools for those topics need to be developed in order to see a change in practice.

We would also expect the procedures that have been implemented or those they intend to implement to mirror the differences seen in the initial and final surveys. In some cases, they did but the implemented practices list is more specific, being in the growers’ own words. The breadth of changes is encouraging, from a relatively short-term project.

While the indicated reduction in pesticide use is not quantified,, it is encouraging and suggests that in the future, we could work with these growers to measure actual changes in pesticide use.

Accomplishments

The project activities were designed to help us gain a better understanding of the current level of adoption of IPM by NYS Christmas tree growers, their specified needs for educational information and tools, and how we might work with them to increase their use of IPM. Based on the work of the educators and the growers, we have progressed a long way to understanding those 3 essential elements, as can be seen in the results discussed above. While the ultimate project goals are longer term than the grant period, these accomplishments give us a good basis for continuing to work with NYS Christmas tree growers to help them produce better trees with fewer pest issues.

Some of the other accomplishments are less tangible and more difficult to measure. One in particular is the interaction between CCE educators and PIs that was provided for by the project. While many of us work together in other areas, this project expanded the network by which we will all succeed. Also, it provided the potential for face-to-face and out-in-the-field interactions between growers and Extension that can lead to a continuing educational relationship.

Significant contributions and role of project partners

Without both the CCE educators and the participating growers – and their close cooperation, this project would not have been possible. Their activities and contributions are detailed in the previous section. We are extremely grateful to the growers for their free donation of time and experience and to the CCE Educators for their dedication to the project.

Goals and Outcomes Achieved

The long-term objective of this project is to increase the use of available IPM tools by Christmas tree growers in NYS based on current NYS Christmas tree growers' use of IPM and knowledge gained while working with them to expand their level of adoption. Using knowledge gained from 12 growers and at on-farm Open Houses, we want to create a plan for the development of educational materials and how to extend them to continue the expansion of IPM and the production of quality trees by NYS growers in the future.

1. Activities completed (additional information in Project Approach section)

Twelve growers were identified to be part of the project. CCE educators worked with each grower to evaluate their IPM practices and incorporate new practices throughout the grant period. A comparison of initial and final IPM usage surveys indicated that all 6 of the growers for whom such information has been gathered indicated that they had learned new IPM practices and added at least one IPM practices to their production methods.

Four on-farm Open Houses were held with the assistance of the participating growers. These were in the Hudson Valley, Long Island, Johnstown and the North Country. At each, growers presented information on their IPM practices, supported by CCE educators and PIs. Information gathered from project growers was also presented at 3 additional educational programs.

Baseline and final data for these activities, and for the achievement of long-term goals are illustrated in the Project Approach section.

2. Progress toward achievement of long-term goals

The baseline data from the initial grower survey, and the information learned from growers during field visits provides the backbone of identifying IPM topics for which tools and educational materials need to be created to reach the long-term objective of this project. In addition, working with the project growers, which we expect to continue past the grant period, and through the Open Houses gives us the experience, and the sounding board, we need to ensure that these tools and materials are properly designed to be practical and adoptable by NYS Christmas tree growers and will result in the adoption of IPM practices.

3. Comparison of actual accomplishments and established goals

While there are some activities that have not yet been completed, the intended results of the project are largely fulfilled. We intend to complete the following activities to provide additional support and information for the long-term goal and to expand upon the knowledge gained during the project.

- a. Complete the final surveys for the remaining 5 growers
- b. Hold at least 4 additional Open Houses in the regions that have not yet been covered
- c. Do evaluations of knowledge gained by the participants of the 2013 Open Houses
- d. Survey NYS Christmas tree growers on their previous participation in IPM programs, knowledge gained and implementation of IPM practices in their production systems

Beneficiaries

There are approximately 700 Christmas tree farmers in New York State with at least 3 acres in trees and they farm in nearly every county in the state (Darling, Christmas Tree Farmers of New York, personal communication). The USDA Nursery Crops 2006 Summary (SP Cr 6-3(07)) states that the 129 NYS growers surveyed farmed approximately 8000 acres, and sold 245,000 trees with approximately \$7 million in gross sales.

The most direct beneficiaries of this project are the 12 growers who participated in the on-farm aspects of the project with the CCE educators. All of growers surveyed increased their use of IPM by at least 1 activity and several by as many as 3, and indicated that they learned new information, and generally reduced pesticide use. The approximately 120 growers who participated in 2012 Open Houses, the approximately 165 growers who participated in other educational programs that benefitted from information gleaned during this project, and the growers who will attend the Open Houses planned for 2013 all learned IPM tactics with potential benefits for their own operations.

As we continue to develop educational tools based on lessons learned in this grant, we will also expand the audiences that we educate and the number of NYS Christmas tree growers who benefit.

Lessons Learned

There were 2 primary lessons learned as part of this project:

1) Methods for achieving improvements in adoption of IPM

The intersection of knowledge and experience of the growers, the CCE educators, and the PI was the crux of this project. The direct contact with the field as a classroom is a very persuasive situation. This applies to teaching new techniques to the individual growers who participated in the project as well as to the on-farm Open Houses where participating growers can explain what they have learned and put in practice to other growers. “Nothing teaches like experience” should flavor as many of our teaching opportunities as possible.

2) Topics and techniques for which educational tools and materials are needed

The initial and final surveys provide a good overview of where the gaps in education are. The procedures that were adopted by the project growers indicated which others require additional support to encourage adoption.

3) Lessons from outcomes yet to be achieved

There are additional lessons to be learned from the aspects of the project that will continue after the project period. Surveys of growers who have and have not yet attended educational programs intended to promote the use of IPM will give us a better understanding of what topics and techniques can be encouraged through oral presentations alone and which require a more hands-on approach. We will evaluate some of the new educational tools developed at the Open Houses planned for 2013 to determine if they are effective and adopted.

Additional Information

Photographs of the Johnstown and Brainardsville Open Houses are included in the Quarter 12 report (October 2012).

Shamrock Tree Farm, Mattituck Open House



Abel's Trees, Verbank Open House







Goderie's Tree Farm Open House





Red Barn Christmas Trees Open House

