

2001 REPORT ON IPM DEMONSTRATION AND IMPLEMENTATION PLAN FOR CHRISTMAS TREE GROWERS

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Abstract: The program increased in both numbers of participants and acreage enrolled in 2001. Outside resources were acquired and distributed and new resources were developed. Pests and pest management patterns were further delineated. Analysis of economic factors is delayed until anticipated data is received. Growers were educated via one-on-one contact, newsletters, and a workshop. A rare disease was detected, successfully diagnosed and managed accordingly. A weed management demonstration trial was initiated and results were viewed and discussed at a twilight workshop. Though interest is strong in marketing Christmas tree IPM, funding constraints need to be overcome. This Christmas tree IPM demonstration and education program continues to be unique to Dutchess County and New York State. We expect this program to eventually become a blueprint for others to establish a Christmas tree IPM education program in other parts of New York State.

Background & Justification: The Christmas Tree Industry in Dutchess County is a strong and growing industry. Total value of the industry in Dutchess County is estimated to be in excess of \$5,000,000. There are approximately 30 Christmas Tree growers in Dutchess County with a total of about 500 acres. Farms vary in size from five acres to 40 acres per farm. About 25% are full time growers, and 75% are part-time growers. Approximately 50% of the growers also grow other crops (i.e. roadside vegetables, greenhouse bedding plants, nursery stock, etc.). Christmas tree growers who incorporate IPM into their everyday growing regime not only promote environmental stewardship, they also increase profitability by reducing the amount of money spent on pesticides. Dutchess County has become a suburban county. Growers are constantly faced with challenges when it comes to pest management and public perception of these practices. In 1998 several growers approached Cornell Cooperative Extension Dutchess County and requested assistance to develop an IPM program. The program was funded through the NYS IPM Program and initiated in 1999. As environmental and growing conditions differ regionally throughout New York State, growers need information that is relevant to the Hudson Valley. Much of the information and practices developed carry over to the ornamental horticulture industry, specifically the nursery and landscape contracting sector. With increased public awareness of commercial pesticide use, expanding IPM practices in Christmas Tree production

Objectives, Activities and Results:

- 1) Continue to work with growers who participated in 2000 and recruit new growers through existing relationship with Hudson Valley Christmas Tree Growers Association.

This is the third year of this program. In 2001 we had two continuing participants. In addition, one grower from year one of the program who did not participate in the second year returned to the program. We had three new growers enrolled this year. One grower who had participated since year one was dropped from the program in May due to lack of participation. A total of 31 acres were enrolled in the program. This represents a 35% increase of the acreage scouted last year (this does not include the ten acres of the grower who was dropped).

Grower participation fees remained the same in 2001. Growers were charged \$250.00 for the first five acres and an additional \$40.00 per acre beyond five acres.

- 2) Continue to acquire, adapt and fine tune materials and protocols from existing and former Christmas Tree IPM programs.

In addition to the resource packet that all growers have always received upon enrolling, we added the 2001 New England Christmas Tree Weed Management Guide.

The scout form was revised to improve data collection and analysis.

A new pest management reporting form was developed.

A scouting calendar based on the last two years of pest data collected was developed, used and tested by the scout.

- 3) Continue to determine the Key Pests and Pesticide Usage patterns of area growers in order to focus research efforts and measure impact.

Overall, weed management continues to be the most product and labor intensive area of pest management (for more details see objective number seven).

Rhabdocline needlecast of Douglas fir is the most prevalent disease problem and their inability to successfully deal with it was the primary motivation to join the project for at least three growers. Monitoring of spore stage has delineated the infection season and prevented both premature and late fungicide applications. The use of spray indicator cards has

improved grower's application techniques and resulted in more uniform coverage. A 4 tier rating system was initiated to monitor impacts on plant quality over time. Early in the season 10 trees per week were randomly selected and judged as having either high infection (virtually all needles showing symptoms), medium (spotty but readily apparent symptoms), low (symptoms detectable only with effort) or none (no symptoms detected). Data was collected weekly until actual needle casting began. Please refer to attached graphs.

Spruce spider mites and balsam twig aphids were of equal concern. A fact sheet on balsam twig aphid was written and distributed to growers as well as being used as a newsletter article (see objective 5).

- 4) Continue to gather baseline economic loss and pest management cost information to enhance impact evaluation.

One grower has instituted a tracking program to assess profitability. At the time of the writing of this report the information is not available. Baseline pest management information from new participants was collected and recorded.

- 5) Continue to educate growers through direct contact, workshops, presentations, newsletters, and other appropriate media.

New to the program this year was the establishment of a post-emergent weed management trial. The trial was set up at one of the participating farms. A workshop to demonstrate the results of the trial was held on September 19 (this workshop was originally scheduled for September 11th). Eight different herbicide applications were trialed.

One newsletter was distributed to all Dutchess County growers. In addition, a special "alert" postcard describing Sirococcus Twig Blight was mailed to all Dutchess County growers. This alert was also reported in the widely distributed Cornell newsletter, *Branching Out*. A fact sheet on Balsam Twig aphid written for the project also appeared in *Branching Out* as a feature article.

- 6) Continue to explore the usefulness of low-resolution digital imagery in the diagnostic process.

An uncommon disease not usually encountered on Christmas trees was detected by one grower. Digital images were taken along with live samples and submitted to the Cornell Disease Diagnostic Lab. The lab confirmed the County Educator's original diagnosis of Sirococcus twig blight.

7) Explore weed management alternatives.

A weed survey was developed and mailed to all Dutchess County Christmas tree growers. The survey results indicated that generally both annual and perennial weeds are a major concern. No one species or type was singled out as predominant.

Please see comments regarding weed trials under objective number five.

8) Explore the public marketing of Christmas Tree IPM participation. Develop a public relations effort that allows participating growers to publicly market their involvement in the Cornell Cooperative Extension Christmas Tree IPM program.

Participating growers agreed that signage promoting their involvement would be a valuable marketing tool for their business. Preliminary discussions as to the wording of the signs had begun. However this objective was postponed due to funding limitations.

Summary and Discussion:

Grower evaluations indicated and our data supports that weed management is the most labor and pesticide intensive pest management activity. We intend to focus more effort towards alternative weed management in the future. We hope to compliment the post emergent weed management study conducted this season with pre-emergent trials early next spring. Weed management will be one of the topics in a planned winter workshop. We also hope to investigate low toxicity alternatives for the other key pests identified in our study.

While the growers that did participate in 2001 expressed their appreciation for the program and indicated their intention to participate in 2002, new growers will be recruited next year. We intend to survey growers in early January to assess interest and promote participation in 2002. If necessary, individual site visits to growers will take place.

Extreme weather patterns in the past three seasons created challenges for pest and pest management activities. Data needs to be collected for several more seasons to accurately represent average growing conditions.

One aspect of IPM that attracted growers to the program is the public image of being environmentally responsible. Following the North Carolina State model, we intend to investigate consumer marketing of IPM in order to provide increased incentive for growers to participate

The hands-on workshops were very well received. It also provided a forum for local growers to network, discuss common issues, and exchange information. We intend to continue these and other educational efforts.

The Christmas tree IPM project has become an integral part of the commercial horticulture education program in Dutchess County and the rest of the Hudson Valley. The information garnered during this project has proven useful not only to Christmas tree growers but to landscapers, arborists, and spray services that deal with the same pest complex.

