

Title of project: Improving crop management in NY greenhouses through local hands-on workshops

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Abstract: Greenhouse growers in NYS are looking for educational opportunities to learn more about managing their crops to maximize profitability. A trial hands-on workshop in Ithaca, Summer 2008, was very well received as a method to extend crop management information. However, the impact will be even greater if the workshops travel to the producers rather than vice versa. They can be adapted to local needs and scheduling and may attract growers who will never travel to the Cornell campus. It also gives us the opportunity to tie a hands-on workshop to a grower-led greenhouse tour to put the knowledge into a real world setting. A grower advisory panel will assist us with identifying facilities and greenhouses and topic areas.

By giving greenhouse growers the chance to learn crop management techniques in a local, hands-on setting, we hope to improve the profitability of their production through improved product quality and/or reduced losses or input costs. The longer term and broader benefits of extending crop management information are reduced losses of pesticides and fertilizers to the soil and water environment, improved quality of life particularly in regards to pesticide applications, and the potential for marketing a more 'sustainable' product.

Justification: Surveys of IPM adoption by, and needs assessment of, NYS greenhouse growers suggest that, even though most greenhouses use some integrated crop management practices, there is still great potential for improving the profitability of floriculture production through reducing input costs or improving crop quality (Lambooy, 2002; Lamb et al., 2007, Mattson, 2008)). The needs assessment survey indicated that pest identification (46%), insect and disease control (56-61%), and fertilizer management (48%) were major or very major challenges to growing high quality plants. Of the 394 respondents to the 2007 IPM survey, only half used new pots or disinfected old ones, a basic disease control procedure, and only a few more used sticky cards to monitor insect populations. And while the majority of respondents attend educational programs, they say they would like more information on a wide variety of crop management issues. For example, 80% of those completing the 2007 Greenhouse IPM Practices survey requested more training in disease and insect identification.

Several regions of the state (Long Island, Hudson Valley, Capital District, Western NY) have annual programs for greenhouse growers, but would benefit from the inclusion of a hands-on component. Many counties do not have Extension Educators that specifically serve the green industry. With increasing travel costs and other economic and time constraints, it is more efficient and effective to take the programs to the growers than to provide programs in a single centralized location. Therefore, a series of hour-long hands-on modules on crop management topics (disease identification, insect identification, fertilizer use, pH and salt measurement, record keeping, etc.) will be offered for workshops across the state. The 2008 IPM In-depth program in Ithaca was a trial of 3 modules; thrips identification, botrytis identification, and pH/salt content measurement of greenhouse media. Three modules with introduction and wrap-up will fit into a half-day program. On-farm and grower-led walk-throughs of local greenhouses will be organized for the afternoon so growers can see the real-life implications of what they have learned. Workshops will be scheduled depending on greenhouse production seasons. The most likely time periods are August to November and January to March.

Benefits of local delivery of information are: the ability to adapt the program to local needs, the potential for information exchange between growers in the region during and after the workshop, and timing the workshops to the local growing seasons for better attendance. Local workshops give us direct contact with growers who we have not yet worked with (over half of those attending the IPM In-depth were new to us) and a method of getting input for our programs overall.

Objectives:

There are 2 long range impacts of this project: 1) increased profitability of NYS greenhouse growers through improved quality of plant materials and/or reductions in input costs and 2) reduced soil and water impacts through appropriate use of pesticides and fertilizers

Procedures:

Performance Target 1: To improve the profitability of NYS greenhouses by providing growers with crop management tools

Milestone 1.1: 1000 growers will hear about hands-on workshops provided throughout the state

Activities:

1. Advisory committee and regional contacts assist with identifying facilities, greenhouses for associated tours, and dates of programs
2. DEC and CNLP credits applied for
3. Hands-on workshop advertised

Milestone 1.2: 80 growers will attend the hands-on workshops held throughout the state (average of 20 participants for each of 4 workshops)

Activities:

1. Advisory committee and regional contacts choose workshop modules most relevant to region.
2. Handouts and materials for modules prepared
3. Hands-on workshops held throughout state

Milestone 1.3: 20 growers who participated in hands-on workshops will use the information gained in their own operations (average of 5 for each of 4 workshops) (based on surveys after the workshops)

Activities:

1. Surveys for participants created and printed
2. Participants surveyed after each workshop by written and/or phone survey.

The In-depth programs are continuing in 2012. A phone/web survey of selected participants will be completed in Spring 2012.

Results to date:

13 IPM In-depth programs have been held around the state since 2009. In addition, there have been 3 In-depth programs held on campus.

At least 252 people have attended the programs around the state. They are primarily wholesale and retail greenhouse growers but nursery producers, landscapers, new growers, and educators also attend.

From the evaluations in 2010 and 2011 (173 respondents), 32% had attended previous IPM In-depths and 46% had attended other IPM programs. Many had made changes based on what they had learned. The most commonly listed changes were improvements in pest identification, sanitation, scouting, and the use of biocontrol. Eighty-five percent of participants indicated that they had learned information at a program that they intended to incorporate into their businesses.

Some of the comments made on the evaluations are:

Spray less

Being proactive rather than reactive

Paying more attention to potential problems

Stopped some 'self-inflicted' problems

Using information on the biology of the pest to improve control

Will be much better able to help customers identify pests and symptoms

Valuable insight into IPM topics that may be useful in answering homeowner/farm questions

Implications:

The IPM In-depth programs are encouraging the use of IPM techniques among ornamental growers in NYS. The continued interest of these producers in IPM programs suggests that they find value in them. Improvements in survey questions will let us evaluate the percentage of growers who actually implement changes based on attendance at an IPM in-depth program.