Northeastern IPM Center – IPM Partnership Grants – 2010 – Proposal
Project Description

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Project Title: Enhancing Delivery of IPM Education to Fruit Growers
Project Type: Minigrant

Project Summary:
Retention of information presented at IPM extension meetings is difficult due to the ephemeral nature of speaker presentations. Information retention is limited by growers' ability to scribe notes during presentations, because handouts are not always available from speakers, and especially because speakers' oral explanations are not available to growers when they review their notes or handouts months or years after the presentations. Handouts provide even less value for growers who did not attend the actual meetings. We propose to create multi-media educational packets relating to specific fruit IPM topics using the PowerPoint presentations and oral recordings of speakers from the Hudson Valley Regional Fruit Grower School. A collection of these packets will be made available to all NE fruit growers through the world-wide web. In addition, key segments of IPM presentations will be edited into limited PowerPoint slides plus brief audio vignettes that will be advertised directly to growers at time-sensitive periods in the growing season. Grower use of these new IPM educational materials will be evaluated to determine their effectiveness at enhancing IPM education and altering grower IPM practices.

Background and Justification:

Successful tree fruit production in the NE using pest-specific "reduced-risk" chemicals and non-chemical control practices requires growers have a strong understanding of pest biology and population dynamics, action thresholds, pesticide modes of action and appropriate application timings. For example, apples in NY are impacted by nearly 50 insect, disease and weed pests (http://nysipm.cornell.edu/elements/apple) that can require the timely application of a significant number of chemical pesticides. Delivery of unbiased, research-based IPM information, *and its retention by growers*, is critical to optimizing pest management success and minimizing unnecessary pesticide use. While the need for timely delivery of relevant unbiased information has increased, budgets for university-based extension programs have decreased. More effective and timely IPM information is needed to assist growers who have differing levels of pest management and technology skills and different learning styles. Refined IPM information delivery systems are needed to allow growers to access the comprehensive information they need at the time they need it ("just-in-time" access).

Cornell Cooperative Extension collaborates with Cornell University Hudson Valley Lab scientists to deliver IPM information to the fruit industry in NY's Hudson Valley Region, other parts of NY and several surrounding states (NJ, CT, and MA). The cornerstone of the program's IPM information delivery system is the annual winter grower schools ("Fruit Grower Schools") held each February. During the course of this 2-day, 20+ presentation event, there are 5-10 oral presentations on IPM topics of high relevance to commercial fruit growers that address specific fruit IPM priorities. Presentations are selected with advice from a grower advisory committee (Hudson Valley Regional Fruit Program Tree Fruit Advisory Committee) and consideration of

regional IPM priorities (NY - http://nysipm.cornell.edu/grantspgm/rfp_ag/fruitpri_06.asp#tree ; NE - http://northeastipm.org/priority/2008/eco-apple.pdf). These presentations, made by university researchers and extension specialists, are predominately oral in nature but use Power-Point slides to enhance grower learning.

Presentations provide ephemeral impacts since months will pass before growers need to implement the information presented and their ability to recall details declines with time. Grower retention of information delivered at meetings is limited by their ability to scribe notes during the presentations. Speakers do not always provide handouts. When they are available, handouts are easily lost by growers and provide less insight with time, particularly since the presenters' verbal comments are not available. Handouts provide even less value for growers who were unable to attend the actual Schools. In our opinion, the educational opportunity presented at these meetings is underutilized because growers cannot access adequate and timely reinforcement of the full range of information (visual AND oral) presented at the meetings.

We propose to reduce this problem by combining Power-Point presentations and digital audio recordings from speakers captured at the upcoming Hudson Valley Commercial Fruit Growers' School. These visual and audio components will be linked into stand-alone IPM educational packets (hereafter referred to as "IPM packets") using features already provided by the PowerPoint software. Multi-media "IPM packets" will be placed on the Cornell Hudson Valley Regional Fruit Program (HVRFP) web site (http://hudsonvf.cce.cornell.edu/), where they would be available to all growers across the NE Region. Growers reviewing these resources on the web site will be able to view Power Point presentations with embedded audio clips that include important interpretation or supplemental information about each slide. In addition, embedded links will be added to slides to allow viewers quick access to other pertinent electronic resources such as Pest Management Guidelines and scouting protocols.

Segments of the larger "IPM packets "will be further edited into brief "IPM vignettes" that will highlight key hands-on IPM information growers can use when deciding how to make specific pest management decisions. These "IPM vignettes" will be made available to growers at time-sensitive periods during the growing season by placing them on the Regional Fruit Program web site and advertising them using active web URL links embedded in grower alert emails. Grower alert messages are currently distributed to over 150 commercial fruit growers, crop consultants and extension staff in 4 NE states on a frequent and timely basis (> 100 / year).

A key component of this project will be the evaluation of grower use and acceptance of the new multi-media resources and their impacts on grower pesticide application decisions.

Project Objectives and Procedures and Evaluation:

1. Audio recordings of 5-10 speaker presentations will be captured at the February 23-24 2010 Fruit Growers School. We currently have the necessary system components (MAC laptop and software, Evolution G2 wireless mic and receiver, interface and connectors) and have successfully tested this procedure at the 2009 Fruit Growers' School.
2. "IPM packets" (5-10) and "IPM vignettes" (10-20) will be constructed using PowerPoint and audio-editing software. There are multiple options for outputting these materials.

Efforts will include investigating the best output format(s) to allow access to these resources through the World Wide Web.

3. "IPM "packets" and "IPM vignettes" will be made available to growers. The Regional Fruit Program web site will be updated and modified to incorporate "IPM "packets" and "IPM vignettes" will then be uploaded to the web site.
4. Availability of the new web resources will be advertised to growers in newsletters and at field meetings. "Just-in-time" advertising of "IPM vignettes" will occur during critical pest management periods by embedding URL links in grower alert emails sent to commercial fruit growers, crop consultants and extension staff in 4 NE states.
5. Grower use of the new web resources will be evaluated during the growing season by monitoring user data from the Cornell server web logs. User comments on the new web resources and their impacts on IPM practices will be obtained throughout the growing season using an on-line volunteer survey instrument (Checkbox Survey Software) that each web user will be automatically requested to complete. Grower attitudes regarding the total new IPM resources will be evaluated using Turning Point clicker technology at the February 2011 HVRFP Fruit Growers' School. Turning Point technology allows attendees to respond anonymously to audience-based surveys. A final report for this project will be submitted by March 31, 2011.

Anticipated Impacts:

1. Fruit grower understanding and adoption of IPM practices will be enhanced by providing alternative teaching tools for growers with different learning styles and those who could not attend the actual meetings.
2. NE tree fruit growers will gain "just-in-time" access to comprehensive IPM information that, to this point, has only been available to attendees of the original meetings. This information will reside in an easily locatable and accessible format, giving growers the timely access needed when making critical growing season spray decisions.
3. The project will reduce the likelihood of growers making ineffective pesticide sprays based on outdated information. Information in web-based "packets" be easily updated, changed or removed as needed.
4. IPM educators will deliver "more for less" as the capture of slides and audio during already-planned presentations will significantly reduce preparation time and expense compared with recreating these presentations at a later date.
5. This resource will demonstrate and evaluate a cutting edge teaching platform which could serve as a pilot information delivery system for the NE Region and beyond.
6. The project will directly address key IPM stakeholder priorities as outlined by NEREAP: a) IPM packages for diversified, high value crop producers; and b) Use of web-based technologies for IPM decision making at: http://northeastipm.org/nereap/priority/2006.htm
7. Ultimately, growers will benefit economically by being able to produce better quality fruit through their better understanding of effective IPM strategies and a reduction in costly, unnecessary and ineffective pesticide applications. The public will benefit from this work by having a more plentiful and safer food supply and a healthier environment due to a reduction in unnecessary or ineffective pesticide sprays.