

Western IPM Center Project Report Form

How to submit: Please submit this completed form electronically, as an attached Microsoft Word file, to Jane Thomas at jmthomas@tricity.wsu.edu. If you have questions, contact Linda Herbst, (530) 752-7010. **Content:** Complete each section below, and include responses to as many of the questions listed in Attachment A as are relevant to your project. *These are guidelines.* Provide your readers with enough detail that someone who is not familiar with your project can understand what you were trying to achieve, how you went about it, and what you accomplished, but please keep it concise.

A. Report Data

Date: March 9, 2011

Reporting Period: January 1, 2010 – December 31, 2010

Report Type (please check one):

x Progress Report Final Report

B. Grant Data

- Grant Agreement #: 07-001492-UTAH1
- Title: “Western IPM Center/ Utah Project Titles 1) Development of IPM Outreach Material for Utah and Colorado Tree Fruit Growers and 2) Utah Tree Fruit IPM Implementation Survey”
- Grant Type: Extension/Outreach and Survey
- Lead investigator:
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 - Title: IPM Project Leader
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- Team members (name, title, institution): Diane Alston, Entomologist, USU; Ruby Ward, Economist, USU; Harold Larsen, Plant Pathologist, Colorado State University
- State(s) involved: UT, CO

C. Nontechnical Summary. An overview of the project, briefly outlining the problem(s), how your project addresses them, and your results, *written to a lay audience*. (500 words)

This 2-part project consists of a grower integrated pest management (IPM) survey and Extension/outreach activities in tree fruit IPM. The Utah IPM program surveyed 382 tree fruit growers in Utah to determine their current use of specific pest management practices, in particular, use of IPM, key grower and farm characteristics that may influence adoption of IPM, perceived impediments to adoption, economic aspects of IPM, and preference for education delivery techniques.

The response rate for the survey was 74%. Twenty-one percent of growers considered themselves IPM practitioners (14% organic), yet at least 30% of all growers selected at least seven of 22 IPM practices such as trapping and record-keeping. In addition, 78% of respondents said they monitor regularly for pests. Some of the barriers to IPM were cost, lack of qualified labor, investment of time, and outside pest pressure (urbanization). Whether farms were urban or rural, however, had no affect on the level of IPM practices implemented or changes in pesticide use over the past 5 years. Respondents who do not practice IPM most commonly said that they would adopt its use if they were guaranteed a 100% fail-proof system, if the consumer was better educated in IPM, and if costs were decreased. For pesticide use, those that practice IPM reported greater pesticide reduction than those that practice conventional or organic agriculture. We will continue to analyze the survey data, and compare results to tree fruit surveys conducted in 1996 and 2003.

The Extension/outreach component of this project is a joint program with Colorado to produce the first comprehensive commercial tree fruit production guide for the Utah-Colorado region. The guides will be supplemented by a website that will also include a series of short, web-ready videos on tree fruit pest monitoring techniques and key pest identification, designed to target commercial and hobbyist growers. With an increase in small farms in western U.S., new orchardists have a great need for educational resources in tree fruit production. With the website, orchardists who are looking for training in monitoring techniques or treatment recommendations will find all the information they need in one location.

The tree fruit guide was completed by ten authors and printed in January 2011. It has been distributed to almost 500 commercial growers in Utah and Colorado. The guide will be updated yearly and printed again in 2012. After that, users will print their own copies online. The website design is complete, and we are now adding content. We created several "test" videos in summer 2010 and will complete the videos in summer and fall 2011. To evaluate this project, we have used postage-paid postcard surveys attached to the guides, plus we will distribute a formal survey. We will also have "mini-survey" links on the website and will look at website analytics.

D. Objectives and Progress. List your objectives and describe your progress for each objective.

1. Design and deliver a statewide tree fruit IPM assessment survey.
progress: complete
2. From the survey data, determine extent of IPM adoption and education/research needs in Utah's tree fruit industry.
progress: 70% complete
3. Produce and distribute regional Utah-Colorado Tree Fruit Production Guide in print and online.
progress: 2011 print guide has been produced and distributed; online version 20% complete
4. Produce web-enabled video shorts of IPM tree fruit pest identification and scouting techniques.
progress: 40% complete
5. Develop website to house tree fruit production guide and scouting videos.
progress: website design complete; content upload 20% complete

E. Outputs. List your project's outputs, which might include publications, information, data, meetings held, attendance at meetings held, etc.

- Results from tree fruit IPM survey; 282 responses
- Survey Report/bulletin for fruit industry and IPM website – to be completed fall 2011
- Survey manuscript – to be completed fall 2011
- Utah-Colorado Tree Fruit Production Guide
- Tree Fruit Production Guide website – to be completed fall 2011
- Up to 30 pest identification and monitoring instructional videos – to be completed fall 2011

F. Impacts and Potential Impacts. The "impacts" and "potential impacts" sections of your report will help the Western IPM Center highlight the value of IPM research and education by detailing the real-world impacts of Center-funded projects. We will use the information in news articles, reports, and informational brochures to showcase the impacts of projects that our program supports. *See Attachment A at end of form for questions to assist you in describing the impacts of your project.*

1. Impacts. Describe any impacts of your work. *Impacts* are specific changes in condition for those affected by your work. Impacts include adoption of technology, creation of jobs, reduced cost to the consumer, less pesticide exposure to farmers, access to more nutritious food, and a cleaner environment and healthier communities.

Results of the survey will allow the USU IPM program to:

- Document success and failure of the USU IPM program in tree fruits. The 2010 survey, when compared to results in 2003 and 1996, will show across the industry, changes (positive and negative) in IPM practices, IPM perceived risks and benefits, use of Extension services, and more.
- Guide the USU IPM program in future research and education needs in fruit IPM. This survey will allow us to gain an improved understanding of changes in, and use of, IPM practices in Utah.
- Provide impacts of the USU IPM program on tree fruits to leverage future funding. Impact assessment is critical for most grant funding agencies, in particular, for federal funding.

For the Extension/outreach component, postcard, email, verbal, and online surveys will measure:

- Optimized pesticide use and increased IPM implementation due to increased confidence in implementing IPM strategies, subsequently shifting to reduced-risk pesticides. Training videos allow commercial and backyard growers to better identify pests and implement formal scouting practices to target pests for appropriate control measures.
- Increased profits due to up to date information that contains a broad arsenal of pest management options, including state-specific products. Growers can save money in scout training costs through the use of free videos. Both Colorado and Utah will be able to respond to new inquiries from fruit growers on pest management in timely and efficient manner.

2. Potential impacts. Describe your project's potential impacts. *Potential impacts* are the ways that your project's outputs could directly lead to changes in condition that will unfold in the future.

- Improved ability to raise grant funds for pest management projects that benefit the tree fruit industry.
- Increase in adoption of IPM by the tree fruit industry due to more effective Extension education and research programs.
- The USU and Colorado IPM programs will demonstrate a greater ability to serve their states in tree fruit pest management. Other states in the Intermountain West region could also benefit from these products by participating in future editions of the tree fruit production guide and by making the training videos available on their states' websites by providing a link to the existing videos.
- Growers able to produce quality fruit with reduced pesticide usage can be satisfied that they are consuming a healthful food and contributing to a safer environment.

G. Leveraged Funds. List *additional funding* you have acquired because of the data and results yielded in this WIPMC-funded project.

Additional Funding Award #1:

Date of Award:

Name of Granting Entity:

Dollar Amount:

Name of Grant Program:

Grant Period Duration:

Additional Funding Award #2:

Date of Award:

Name of Granting Entity:

Dollar Amount:

Name of Grant Program:

Grant Period Duration:

Additional Funding Award #3:

Date of Award:

Name of Granting Entity:

Dollar Amount:

Name of Grant Program:

Grant Period Duration:

H. Appendices

1. With your report, please attach *at least two (2) photographs* that illustrate your project. Please describe the photo and indicate the name and institution of the person who took the photo. (If you submit more than two photographs, please include those additional descriptions and photo credits under "I. Additional Information," below.)

Photo #1 description:

Screen shot of tree fruit guide website

Photo #1 credit (photographer's name and institution):

Utah State University

Photo #2 description:

Front cover of tree fruit production guide

Photo #2 credit (photographer's name and institution):

Utah State University

2. Also attach any printed fact sheets or other publications resulting from your work that will enhance our understanding of your project and its impacts. Please provide a description of each attached publication below.

Document #1 description:

Document #2 description:

Document #3 description:

I. Additional Information

Credit: Some of the language about impacts and potential impacts was adapted from a PowerPoint presentation by H. Michael Harrington, Executive Director, Western Association of Agricultural Experiment Station Directors, Colorado State University.

Attachment A

Questions to Help in Reporting Impacts and Potential Impacts

Below are some questions that will guide you in assessing and then describing the impacts and potential impacts of your project. The relevance of each question may vary depending on whether yours is a research or extension project. Please answer as many as you can to the best of your ability, and feel free to describe any additional types of impacts not mentioned below. Remember to identify any potential impacts.

1. Innovations in IPM:

Are there new IPM practices that have been (impacts) or could be (potential impacts) adopted as a direct result of your project? What is the total number of acres (or homes, schools, greenhouses, nurseries) on which these practices could realistically be implemented?

2. Safeguarding human health and the environment:

- a. Has the project reduced risk (or could it potentially do so) by changing the use of pesticides on farms, in homes, in schools, etc.? For example, could it result in fewer sprays per season or a switch to lower-risk pesticides? If possible, quantify the changes in condition. (Since there is no unanimous definition of *high* and *low risk*, investigators selecting this indicator are asked to categorize the pesticides they are reporting on as *high* or *low risk* according to the particular situation [e.g., lower risk to natural enemies]).
- b. Are there any other impacts or potential impacts on human health or the environment as a result of your project?

3. Economic benefits:

- a. What is (or could be) the economic benefit (e.g., dollars saved) for clientele who adopt IPM strategies and systems you studied? Do you envision potential commercialization or mass production of these systems?
- b. How many clients are satisfied with IPM results (such as improved yield, improved quality of yield, reduced pest populations, more effective pest control, greater preservation of nonpest species)?
- c. Are there other financial benefits that might be realized (potential impact) as a result of your project?

4. Implementation of IPM:

- a. How many IPM strategies and systems have been validated through this project (e.g., through on-farm trials, large plot tests, or other methods used to confirm efficacy)?
 - b. How many educational materials were delivered? To whom? And what are the impacts or potential impacts?
 - c. What is the number of growers/personnel trained? And what are the impacts or potential impacts?
 - d. For a Web site, what volume of traffic and type of use has the site experienced? (For example, number of visitors per day or month; number of page views; number of unique user sessions; change in volume during growing season; average viewing time.) And what are the impacts or potential impacts?
 - e. How many more people adopted IPM practices as a direct result of your project, or how many people adopted new IPM practices?
 - f. Are there other ways in which your work will result in improved use or increased implementation of IPM strategies in your region or across the West?
5. Has your project or study increased collaboration among stakeholders interested in the development and implementation of improved IPM strategies and systems?