Implementation Unit Meetings

Nine PMTP implementation units met once in the spring of 2010 (Mar-May) to discuss (1) the use of OP-alternative insecticides and strategies for managing the AZM phase-out, (2) planning ahead to avoid insecticide resistance management, and (3) using the WSU Decision Aid System. Implementation Unit meetings were held at various locations across the fruit growing regions of the State to allow access to as many tree fruit growers as possible (Oroville, Wenatchee (2), Quincy (2), Royal City, Yakima, Wapato, and Spokane).

Transition Handbook

The updated apple orchard IPM handbook was reprinted both as complete notebooks and as updated page replacement sets for use in 2010 educational activities. New full notebooks were given to all new IU members, while replacement page sets were distributed to anyone with a 2009 or older edition of the handbook. The updated handbook is also available as a pdf download from the project website (http://pmtp.wsu.edu/handbook.html).

Translation of the IPM Transition Handbook from English to Spanish was completed and printed and dissemination has begun. This tool will serve as a great aid to the Spanish-speaking growers in Washington who are very interested in transitioning their IPM programs to those that rely on new and safer technologies. An example of a page of the Spanish Language IPM Transition Handbook is shown at the right. As with the English version of the handbook, the Spanish version is available as a pdf download from the project website (http://pmtp.wsu.edu/handbook.html).

Educational Newsletters

Two more issues of the project newsletter were produced and disseminated since the last project report and another one scheduled out just after this report’s due date bringing the overall year’s total to five. The first of the newer issues focused on AZM alternative controls for codling moth. The next issue was a spotlight on the newly emerging potential pest Drosophila Suzuki (Spotted Wing Drosophila). The next newsletter to be produced will cover resistance management as it pertains to pre-mixed formulations used during the summer months to control multiple pests.

There are nearly 400 subscribers receiving the newsletter either electronically or by post. A new automated newsletter subscription link was added to the website allowing people to join the electronic mailing list. With the automated electronic subscription we can tell not only who receives the newsletter, but also who actually views it online or downloads the pdf version and who forwards the newsletter announcement to others.
So far we have reached our goal of producing one to two issues per month throughout the growing season covering timely management topics and announcements related to improving orchard IPM practices. All newsletters can be viewed online on the project website, where they can also be downloaded for printing (http://pmtp.wsu.edu/newsletters.html). Back issues of the newsletter are available to view or download from an archive index page.

Apple Pest Management Consultant Survey

A survey of pest management consultant practices in 2009 was mailed to a sample of 243 consultants in January 2010. The goal was to track changes in insecticide recommendations, knowledge of IPM tactics, and thoughts about the AZM (Guthion) phase-out. The response rate for the survey was 66%, and data are currently being cleaned and analyzed. Preliminary results, along with some comparisons to 2007 consultant data, are presented here. Note, however, that results are still preliminary and may be subject to change. Finalized results will be included in the fall project report.

Preliminary results suggest that 81% of consultants recommended Guthion in 2009, down from 93% in 2007. Most consultants (74%) reported, in general, decreasing their recommendations of OP insecticides over the last three years (up from 35% in 2007) and increasing their recommendations of OP-alternatives (76%). For alternative insecticides, consultants expressed the highest levels of confidence in pheromone mating disruption, Altacor, Assail, and Delegate. Most consultants (68%) also reported that codling moth injury had remained steady over the previous three years. Sixty nine percent of consultants knew that the Guthion phase-out would be completed in 2012 (up from 55% in 2007) and that it limited the total amount of product that could be applied (as opposed to number of applications or timing) (51%, up from 32% in 2007). The majority of consultants (72%) were in the process of phasing out Guthion, while 16% had already phased it out completely. Consultants reported that the greatest barriers to the phase-out were cost, secondary pest problems, and issues relating to export and pesticide residues allowed by various countries.

Consultants reported increasing their use of resistance management strategies (62%) and maintaining or increasing their use of the IPM practices of monitoring, degree-day models, and pheromone traps. They found that the largest barriers to good monitoring were time (53%), cost (37%), and lack of trained staff (33%). The large majority (90%) also reported using the Decision Aid System (DAS) and knowing about the Pest Management Transition Project (PMTP) (86%), with 45% having participated in a PMTP Implementation Unit. Their top sources of information on pest management were DAS, other consultants, and the WSU Crop Protection Guide. These results show continued movement among pest management consultants to phase out Guthion and adopt OP alternative insecticides as part of an IPM program. They also show strong support for WSU research and extension programs such as DAS and AIPMTP.

Farm Worker Outreach

A pesticide safety poster designed to help farm workers better understand the differences in human toxicity between organophosphate insecticides and newer alternative insecticides was created, presented, and distributed to 60 farm worker health outreach workers at the Washington Association of Community and Migrant Health Center spring outreach training in April. Participants caught on very quickly as to how to...
read the poster and how they could use it in their outreach to farm workers. Fifteen of these outreach personnel also agreed to be contacted later in the summer to provide feedback on how useful the poster was (or was not) for communicating health and safety information to migrant and seasonal farm workers during the 2010 season. The poster was also distributed to growers and managers for display at orchard workplaces, and is posted online for easy downloading (http://pmtp.wsu.edu/downloads/PesticideLabelPoster.pdf).

Finally, the poster was presented and distributed to farm workers at health fairs at worker housing camps in Monitor and Malaga through the playing of a pesticide safety roulette game designed to teach participants how to read and interpret the poster. These health fairs were sponsored by the Washington Association of Community and Migrant Health Centers, Columbia Valley Community Health, and AIPMTP, and attended by about 425 people total (275 in Monitor, 150 in Malaga).

AIPMTP also participated this quarter in a research review of the University of Washington’s Pacific Northwest Agricultural Safety and Health Center to identify research priorities in worker health and safety for the coming years.

Case Studies

Case study histories are currently underway in the hopes of providing a deeper understanding of the AZM phase-out and also feeding into an economic model of the cost structure of the phase-out. A database to accommodate quantitative data on production costs, labor costs, yields, and apple pack outs has been designed, and data are currently being entered into the system. Once complete, these quantitative data will be analyzed together with qualitative data on pest management decision-makers’ approaches to the AZM phase-out, the costs and benefits of those decisions, and the ways that changes in pesticide use have affected costs and orchard operations.

Apple Grower Survey

Results of the apple grower survey for the 2008 growing season were presented at the annual meeting of the Agriculture, Food, and Human Values Society in Bloomington, Indiana in June. Feedback garnered at this conference will be used to revise an article on the survey results previously submitted to the Journal of Renewable Agriculture and Food Systems. Basic survey results are available on our web site (http://pmtp.wsu.edu/survey_GroS.html). Meanwhile, we are continuing to work on comparing our survey data with those from previous National Agriculture Statistics Service (NASS) surveys and planning potential follow-up survey data collection for the 2010 growing season to trace the trajectory of the AZM phase-out and transition to more sustainable apple pest management.

Specialized Farm Worker Trainings

Final results of the specialized farm worker trainings surveying participants on their knowledge of the pesticide transition and pesticide health and safety during winter 2009-2010 are posted on our website (http://pmtp.wsu.edu/TPsurvey2010_Sum.html) alongside comparative results from 2008-2009. As discussed in the last quarterly report, results showed that the pest management transition is underway in apple orchards, as IPM tactics and alternative insecticides are becoming more widely available, understood, and used by pest applicators and supervisors as well as growers and consultants.
Decision Aid System

The online video tutorials and online DAS Manual have been finished and implemented in the WSU-DAS Help Center. Both help features assist old and new users in accessing and using the system to its capacity. Our monitoring system shows that the video tutorials have been viewed frequently (393 times in total, so far). The most viewed tutorials are “Set Up a New Weather Station” (121 times) and “View Model Options” (82 times).

The re-designed front page of DAS now highlights seasonal-specific issues growers need to be concerned with. These stories are regularly updated and cover a wide range of information from insect control tactics to spray drift to bee pollination. Many of these posts are based on work done in the AIPMTP and include links to the AIPMTP homepage and newsletters, as well as other IPM related websites of WSU. To date, 36 stories have been posted on the DAS front page. The number of views per story ranges from 21 to 295 (total 3319). The most read stories are “DAS is now on the iPhone” (295 views), “DAS workshops” (246 views), “New codling moth degree-day/development table” (218 views), and “Leafroller and codling moth movement during the season” (210 views). The first two stories have been published the longest.

An iPhone compatible web format of WSU-DAS was launched in February 2010, which allows users to access DAS from anywhere in cell phone reception range. At this time, users can view current and projected pest conditions and management recommendations as well as the Mini WSU Spray Guide.

All pest conditions and management recommendations on WSU-DAS have been translated into Spanish. Various options are being considered how to translate everything else on the website, including links, buttons, table headings, etc. Google Translate is being tested as one of the options. The Spanish WSU-DAS was opened up in May 2010 for our beta-testing group, which includes several native speakers, to evaluate the Spanish language part of the system.

An online survey of registered users has been developed and is awaiting WSU IRB review. We expect to activate the survey in early July 2010. The results of this survey will be compared to those from a survey conducted in 2008. To date, there are 451 active DAS accounts that access the system on a regular basis (at least twice within the last 30 days). This is an 83% increase from 247 active users in 2008.

We are in the process of planning and designing new filters for the DAS pesticide database (WSU Spray Guide). These filters will allow users to search for pesticides that specifically have a low or no negative impact on certain natural enemies with the goal to enhance biological control. Also, the new filters will
assist users with resistance management by enabling the user to search for pesticides with a resistance class (mode of action) that is different from previously applied products.

DAS has been reformatted to optimize it for search engines, i.e. to make certain pages and the RSS feed more search engine friendly. As a result, Google has been indexing far more information in the last two weeks than in the past (number of pages crawled per day). Over time, this improves search engine placement and will make the WSU-DAS website more easily available to the average web user. Additionally, all video tutorials for DAS have been published on YouTube.com to increase DAS’ Internet visibility.

**MLR Database Development**

The database that will store the Maximum Residue Level (MRL) data updated and provided by the Northwest Horticultural Council (NHC) has been created and is being tested now. The system will consist of web-based software that will allow the NHC personnel to change, update, and add MRL data as appropriate. Once this software is finished, we will develop the interface with which it will be served to users of the NHC web pages and also serve the same information to WSU-DAS users. We will begin working with NHC to develop the user interface for their server shortly.

**DAS Outreach**

During the winter 2009/2010, talks on the WSU-Decision Aid System were presented at six industry sponsored grower meetings (North Central Washington Apple Day, Wenatchee; North Central Washington Stone Fruit Day, Wenatchee; Okanogan County Horticulture Society Meeting, Okanogan; Northwest Wholesale, Brewster; Chelan Fruit Growers Day, Okanogan; and Wilbur Ellis, Tonasket), as well as at the GRAS2P Orchard Sustainability Workshop, the Western Orchard Pest and Disease Management Conference (Portland, OR), the WSU Pesticide Education Program (Wenatchee), and the International Cherry Growers Tour (Wenatchee). In addition, updates on the Decision Aid System were presented at three Spanish language pesticide recertification classes (Wilbur Ellis, GS Long, and WSU Chelan County Extension), as well as through poster presentations at the Washington State Horticultural Association conference in Wenatchee and the annual meeting of the Pacific Branch Entomological Society of America in Boise, ID. Also, updates on DAS were featured in the March 2010 issue of the magazine Good Fruit Grower.

A mailing campaign (emails as well as postcards) was launched in January 2010 to AIPMTP IU members to advertise DAS training workshops this season. Additionally, DAS training workshops are continuously advertised on the DAS home page. Between February and June 2010, 12 workshops (20 hours in total) were held on request in small groups (3-9 people) or individually. A total of 51 participants were walked step-by-step through all features available on DAS. All participants could experience DAS hands-on for themselves at their own laptops or with notebooks provided from the DAS-AIPMTP mobile computer lab. Two workshops were held for Hispanic growers, who had not used the system before, demonstrating the features of DAS, including the Spanish web sites. Further mailing campaigns are planned in January 2011.

Workshop participants were asked to fill out an evaluation questionnaire at the end of each workshop to assess if the participants increased their knowledge on how to use DAS and where the training sessions can be improved. The overall assessment of the workshops was very positive, and all participants learned new ways to use DAS for their operation. Several suggestions were offered on how to improve future trainings. The workshops also gave valuable insight in how people use DAS, what features they use and do not use. For example, the filter options in the WSU spray guide and the historic
weather data center have not been widely used. Such observations allow us to tailor our educational efforts more effectively and to improve the DAS interface to be more intuitive and self-explanatory.