



The WESTERN FRONT

Summer

Newsletter of the Western Integrated Pest Management Center

2013

A Western IPM Center Signature Project:

New Training Material Protects Water

by Steve Elliott

Western IPM Center

When the U.S. Geological Survey conducted a 10-year study of pesticides in surface and groundwater, it collected water samples from 186 stream sites, sediment samples from 1,052 sites and fish samples from 700 sites.

Pesticides or pesticide residues were present at every single site.

Fortunately, most of the concentrations were low and not dangerous to human health. However, the findings do make the problem crystal clear – pesticides are finding their way into rivers, streams and groundwater sources across the United States, and they don't belong there.

To address the issue, the Western Integrated Pest Management Center chose protecting water sources from pesticide contamination as one of its first-ever signature projects back in 2011. Recently completed, the project created three practical, hands-on training modules focused on pesticides and water quality – one aimed at agricultural applicators, one at professional urban landscapers, and one at homeowners.

See **WATER**, page 6

Survey your site before making a

Always consider the weather before

Manage irrigation to reduce the chance

How can you protect water when using pesticides?

Photo courtesy of mtvancouver

IPM Center

Each slide in the three training modules presents one key point.

Understanding and Accessing Western IPM Center Funding

At its core, the Western IPM Center is a funding agency, dedicated to advancing the science of integrated pest management and promoting the

adoption of IPM practices in the field.

To help researchers make the most of our funding – which like most funding is both competitive and limited – here's a quick guide to Center funding programs, and how they can be used throughout the life of a project.

practices to identify what's important for the future of a particular commodity. PMSP grants get growers, researchers and other stakeholders together to quantify the important pest research needs and priorities for that particular crop. PMSP grants are usually in the \$10,000 to \$15,000 range.

"Together, those grant programs allow us to get a good handle on what's happening, and what's important," said Jim Farrar, the Center director.

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Surveys and Crop Profiles

Survey and crop profile grants are small awards that enable researchers to document and understand current pest management practices, either in a specific crop or region. Unlike most Center grants, both are open to single researchers, and projects can be limited to a single state. These grants are usually less than \$10,000 and can be as small as \$1,000.

WorkGroups

Work group grants bring a group of researchers from different disciplines or different regions together to develop ideas that have the potential to become larger projects. Two of the Center's current signature programs for example, crop pest-loss assessment and weather-

Pest Management Strategic Plans

Pest Management Strategic Plan grants take the next step to go beyond current

See **FUNDING**, page 7

Comment Coordinators Keep Information Flowing

Now that I have a couple months of experience as director, I want to share with you one of the least-known aspects of the Western IPM Center's work: comment coordination. Before becoming Director, I had little exposure to this important Center task. Comment coordination begins with a "request for comment" from a federal agency, usually originating from the Environmental Protection Agency and sent to the Centers via the Office of Pesticide Management Policy. EPA requests comments as part of the pesticide regulation process in order to receive information about actual pesticide use and pest management practices in the field.

Providing EPA with sound information regarding pesticide use and the impact of pesticide regulation decisions is vital for the Western Region because of the great variety of climates and crops – especially minor crops – grown in our region. Many pesticide labels, for example, have limits on the total cumulative amount of product that can be applied "per crop" or "per season." These terms may make sense from the perspective of a northern temperate climate. However, in the Western Region we have cropping cycles that range from three to four weeks for baby spinach in Arizona and California, to "seasons" with no clear beginning and end for tropical perennial crops like cacao in Hawaii and the

Pacific Island Territories.

Occasionally USDA issues a request for comment on proposed regulatory changes. For example, USDA recently requested comment on the paperwork burden of reporting information on honeybees, hives and honey production to the National Agricultural Statistics Service.



Jim Farrar

To provide specific local information representative of the range of crops and cropping systems, the Western IPM Center has three comment coordinators in geographically distinct areas of the West. They are Cathy Tarutani for Hawaii and the Pacific Island Territories; Jane Thomas for Washington, Oregon, Idaho, Montana, Utah, California, and Alaska; and Al Fournier for Arizona, Nevada, New Mexico and arid Southeastern California.

Each of the comment coordinators maintains an extensive network of contacts among commodity groups, growers, extension agents, state IPM coordinators, university scientists, state agricultural

agencies, pesticide safety educators, Western Region IR-4, Western Sustainable Agriculture Research and Extension and other interested partners.

When I receive a request for comment, I forward the request to the appropriate comment coordinators. They then communicate with their network of contacts, summarize the responses and forward the information to the requesting agency. On the Western IPM Center website, we maintain a webpage of comments dating back to a 2002 comment on methyl parathion. The web page is arranged by topic or active ingredient, but future plans are to also allow user to view the information arranged by by date.

If you have ever been contacted by Al, Cathy or Jane and provided information for a comment request, thank you for participating and helping us to communicate real-world pest management practices and needs to the federal agencies.

If you are not in the comment coordination network and are willing to participate, please send me an email (jjfarrar@ucdavis.edu) with your name, location and a brief description of your relevant crop or pest experience and I will get you connected. You will probably be asked for comment only once or twice per year, but your small investment of time can have a big impact on pest management regulations.

Pacific News

GUAM

Team helps combat recent decline of Guam ironwood trees

In 2002, a local farmer noticed several Guam ironwood trees that were planted in a single-row windbreak were dying. By 2005, what became known as Ironwood Tree Decline was widespread across the island, with some sites seeing more than half of their ironwoods in distress.

The University of Guam Cooperative Extension Service's Plant Health and Pest Management group – along with 11 other agencies – began studying the causes of the tree die-off. Led by Cooperative Extension's Robert Schlub, the group recently published a 28-page report examining the history of the tree on Guam and its research into the causes of its decline.

Support for the research came from many sources, including the Western IPM Center, and led to major advances in understanding the role of bacteria in the decline complex. These findings will be presented in two posters at the American Phytopathological Society - Mycological Society of America joint meeting this August in Austin, Texas.



Robert Schlub, University of Guam

A stand of Guam ironwood trees in distress.

The guide also offers advice on combatting Ironwood Tree Decline through tree health care recommendations, including recommendations on site and soil evaluation, trees installation and post-planting care.

The guide is on the University Guam website under Cooperative Extension and Tree Health at: www.uog.edu/dynamicdata/ANRtreehealth.aspx?id=2&p=1445

New Report on Onions Shows Gains and Needs

For Las Cruces onion and pepper farmer Steve Lyles, following integrated pest management principles is a necessity. Much of his acreage is right on the outskirts of town, so he's been proactive in managing dust, noise and pesticides.

"I farm around one school, so we have to be careful of what and when we spray," he told *Growing Produce* in a profile published in 2012. "We monitor the insect populations closely and use the softest chemistries available."

Lyles has won awards for his progressive approach to farming, including the New Mexico State University Leyendecker Agriculturalist of Distinction award for 2013, but more and more onion growers are also adopting IPM practices and benefitting from IPM strategies, according to Howard Schwartz, a professor of plant pathology at Colorado State University. Schwartz is the lead author of a recently published national Pest Management Strategic Plan for dry bulb storage onions, which was created with Western Integrated Pest Management Center funding.

"We're seeing good adoption of IPM by growers, either as individuals, or coming from crop consultants," he said. "We've been pleased with that."

Managing Thrips

The recently published PMSP updates a 2004 document that was less national in scope, and highlights some of the advances made over those nine years. One area that's improved is managing thrips and the Iris yellow spot virus that they carry.

"Cultivar selection is making a difference when it comes to thrips," explained Mark Uchanski, an assistant professor of horticulture at New Mexico State University who contributed to the new onion Pest Management Strategic Plan and is involved in related research. "More glossy and green foliage is less attractive to thrips. More waxy and blue foliage is more attractive."

Plant breeders are also developing more vigorous onion cultivars as well.

"They're better able to stand up to the feeding of thrips," Schwartz explained. "That's one thing we're able to share through field trials."

Both Schwartz and Uchanski see



H. F. Schwartz, Colorado State University

Onion variety and cultivar selection is an IPM practice that helps manage pests.

"We're seeing good adoption of IPM by growers, either as individuals, or coming from crop consultants.

- Howard Schwartz

widespread adoption of other IPM practices by onion growers trying to manage thrips, including crop rotation, better management of debris and weeds where thrips populations can grow, and pest scouting to time pesticide applications appropriately.

"They're heavy on the scouting to make sure they stay ahead of the curve," Uchanski said. "I'm seeing growers who will time or at least be aware of alfalfa cutting in nearby fields because that will cause thrips to move."

Despite the gains, thrips remain the leading onion pest in the U.S., especially when combined with the damage done by Iris yellow spot virus.

Other Pests and Pathogens

Other major disease challenges for onion producers are soil-borne and bulb-infecting fungal and bacterial pathogens.

"White rot is still an issue," Schwartz said, "and so are Fusarium, pink root and

Botrytis neck rot."

Fungicides and proper storage practices can help combat losses to those diseases, and Schwartz sees a need for a quick bacterial and fungal diagnostic tool for the onion industry.

"There are 10 or 15 different bacterial pathogens that can attack onions," he said. "A DNA-based test is being developed by Brenda Schroeder at Washington State University so you can blot a sample on a card and within a few hours be able to say what's attacking your onions and be able to treat it correctly."

And that's one of the biggest benefits of a new Pest Management Strategic Plan: it identifies needs and helps direct research going forward. The new PMSP also integrates closely with other national projects like the W2008 Research and Extension Committee "Biology and Management of Iris yellow spot virus, Other Diseases and Thrips in Onions."

"Because of the PMSP, we're on the same page and organized," Uchanski said. "This was written by representatives of the onion industry, USDA, academics and growers and packers, so now when we apply for a research grant, there's weight behind that request."

The dry bulb storage onion PMSP can be downloaded at www.ipmcenters.org/pmsp/pdf/USonionPMSP.pdf

Highlights of Recent Western

Battling Invasive Weeds in an Urban Environment

Having a clear, consistent message and speaking with one voice is helpful when it comes to educating the public about invasive species.

But around Portland, Oregon, speaking with one voice is a challenge in an urban area that includes two states, four counties and dozens of cities. Homeowners and land managers in the region could easily hear several different recommendations or control strategies for common weeds like yellow archangel and old man's beard.

So in 2012, the Clackamas, Clark, Multnomah and Washington County Cooperative Weed Management Area around Portland began a project with the Western IPM Center to bring consistency to the invasive species chaos. The 4-County CWMA, as it's known, created a team with members from the cities and Soil and Water Conservation Districts within its boundaries to put together fact sheets identifying common invasive species and spelling out IPM-based control strategies for each.

In the end, the team, led by Weed Management Area Coordinator Elena Cronin, created 10 fact sheets, covering the following species:

- American Pokeweed
- Blackberry
- English Ivy
- Garlic Mustard
- Giant Hogweed
- Lesser Celandine
- Old Man's Beard
- Spurge Laurel
- Water Primrose
- Yellow Archangel

Each fact sheet includes an overview of the plant, pictures and descriptions of how to identify it, lookalikes, information on when to remove it, preferred and alternative control methods and cautions specific to each species or control method. The fact sheet for Giant Hogweed, for example, recommends calling a licensed herbicide applicator since the plant's sap can seriously damage skin and eyes.

Most of the control methods outlined in the fact sheets stress manual and mechanical control, increasing awareness of IPM practices and presenting herbicides as one of an array of available tools.

The group also held five trainings around the Portland metro area, attended

by 60 people, and printed 2,000 copies of each fact sheet, including 500 each in Spanish. They are available for download at www.4countycwma.org.



The fact sheets teach identification and control methods for 10 invasive weeds.

New Mexico Project Creates Pollinator Resources for Growers

Gardeners, growers, land managers, school groundskeepers and others in New Mexico now have a way to help honeybees and native wild bees thrive, thanks in part to a Western IPM Center-funded project led by Urban and Small Farm IPM Specialist Tessa Grasswitz at New Mexico State University.

During the demonstration and outreach project, Grasswitz's team, working with the Natural Resource Conservation Service's Plant Materials Center for New Mexico, tested more than 100 species of plants – mostly native – for their ability to attract and provide habitat for pollinators and other beneficial insects.

Using test plots in four geographically distinct sites throughout the state, the team planted hedgerows of



Want to attract bees? Just look to the poster.

native flowering trees and shrubs as “shelterbelts” at the edge of each site, then planted a variety of flowering perennials, biennials and annuals, as well as native grasses to provide habitat for ground-dwelling beneficial insects, to see which were the most attractive to bees and other beneficial species.

Workshops were then held at each site

to educate members of the public, and the team produced two pocket-sized guides for growers, landscapers and home gardeners. One is titled “Pollinator Plants for New Mexico” and lists the scientific and common names for plants that attract bees, as well as noting whether the plant is commercially available, how easily it self-seeds or can be propagated in a greenhouse, and other important notes. The other is the “Guide to Native Bees of New Mexico.”

In addition, the team produced a full-color poster that includes pictures and names of good plants for pollinators, broken down into spring-flowering shrubs, summer-flowering annuals, summer-flowering perennials, and autumn-flowering species.

The guides and the poster can all be downloaded at <http://aces.nmsu.edu/ipm/pollinator-project.html>

IPM Center-Funded Projects

Using Sex Pheromones to Bring the *Prionus californicus* Beetle to Heel in Hopyards and Some Fruit Orchards

Hops growers in the Northwest – as well as sweet cheery, apple and other fruit growers around the nation – may soon have a new tool to combat *Prionus* beetles thanks to research funded in part by the Western IPM Center.

The research team of Jim Barbour at the University of Idaho, Jocelyn Millar at the University of California, Riverside and Lawrence Hanks at the University of Illinois identified and synthesized a sex pheromone produced by female *Prionus californicus* beetles and hope to have a commercial mating-disruption product in large-scale trials as soon as next year.

The Pest

The adult *Prionus californicus* beetle is a fierce-looking longhorn beetle about two-inches long. The adult beetle doesn't eat or drink and has a short three-to-four-week lifespan devoted to finding other beetles to mate with.

The damage is done by the larvae.



The *Prionus* larva causes the damage.

“The larvae are root-feeders,” Barbour said. “They grow to about three inches long, and one or two of them really make a mess of hop roots and the roots of some fruit trees. In fact, one old name for the beetle was the Giant Apple Root-Borer.”

Once a hop yard is infected, the only effective control strategy is pulling up the plants and leaving the field fallow for two or three years. Fumigation with various organophosphates is sometimes used, but its effectiveness is questionable.

“In Idaho, they are the most serious hop pest,” Barbour said. “They are also a

“In Idaho, they are the most serious hop pest.”

- Jim Barbour

problem in Washington as well, which is the largest hop-producing state with about 25,000 acres in production.”

The Project

The research team set out to determine if the *Prionus* beetle produces a sex pheromone, and if so, could it be effectively synthesized and used to monitor the beetle or to directly managing the pest in mass-trapping or mating disruption approaches.

“There were reasons to suspect pheromones were involved,” Barbour explained. “The antennae of the males and females are different, and the females adopt a pheromone-emitting posture. Also, these are nocturnal beetles with no bright colors, and they had to find each other somehow.”

The team began with behavioral experiments with male and female beetles to determine if a pheromone was driving mating behavior. It was. They then began experiments to collect and identify the compound. Once that was done, they created and began testing the synthetic version to see if it was equally effective in attracting male beetles. It is.

“Since then, it's been shown to attract a number of *Prionus* beetles, not just *Prionus californicus*,” Barbour said. “It works with at least eight different species in North America and one in Europe.”

Prionus beetles are problems in cherry orchards in Utah, apple orchards in the West and New York and pecans in the South.

The team tested its compound in both mass-trapping strategies and mating-disruption approaches. In the former, the bait scent is placed in traps that beetles fall into and can't escape and they die in the traps. In the latter, enough of the scent is released to saturate an area so the beetles can't follow it back to a female and they die naturally without having mated.

“Mating disruption is easier in some respects because you don't have traps to



The adult *Prionus* beetle.

manage,” Barbour said. “It takes more work up front to show that the beetles are not finding each other to mate.”

The team's tests showed both approaches work.

The Impact

Barbour's current research team is working with Pacific Biological Control and Western Region IR-4 to get the compound labeled as a mating disruption agent for use in hops and sweet cherries. Since both are small-acreage crops, expanding the approved use to other crops like apples and pecans could help make the product more economically viable.

“We have an IR-4-funded grant now for a project demonstrating this works as a mating disruption tool,” Barbour said. “We hope that by 2014 we'll have large-scale trials going with it.”

And that's good news for hop growers throughout the Northwest.

“This certainly will be welcome news in hop yards and to the hop commissions in various states,” he said.

WATER: Slides target ag, urban and home users

Continued from front page

The train-the-trainer modules are in the form of PowerPoint slide presentations and can be downloaded for free on the Western IPM Center website at www.wripmc.org.

And, like so many great ideas, this one began over Italian food and good wine.

The Idea

It was August, 2011 in Portland, Oregon, the site of the National Pesticide Applicators Certification and Training Workshop. The University of Nevada's Susan Donaldson, a water quality specialist and her state's pesticide safety education coordinator, and the University of Idaho's Ronda Hirnyck, the statewide extension pesticide coordinator for Idaho, were at the conference to make a joint presentation. Carrie Foss, Washington State University's urban IPM director, invited them.

"I was on the planning committee for the conference and suggested that water-quality resources would be a good topic; focusing on what's out there," Foss said. "I contacted Ronda and she and Sue compiled a lot of resources, a lot of good information."

The presentation was very well received by the pesticide applicators, but attendees wanted more and all three women recognized there was a need for additional training materials focused specifically on water quality.

"People don't think of water-quality protection best management practices as IPM, but they are," Donaldson said. "We need to marry the two ideas."

At dinner that night, Foss, Hirnyck and Donaldson joined Linda Herbst, then the Western IPM Center's associate director, and Joyce Strand, the associate director of communications for the University of California's Statewide IPM Program, at one of downtown Portland's many great Italian restaurants.

"Linda had the idea to create new training material as a Center signature project," Foss said. "We thought it was great and started talking through what it would look like and how we envisioned the project."

The Western IPM Center put up the funding, and the project launched a short time later. Darren Haver, a water resources and water quality advisor with the University of California Cooperative Extension Service in Orange County, and Jane Thomas, a Western IPM Center comment coordinator at Washington State

University, were recruited to the team.

"We decided pretty quickly on what we wanted to do, who would do, and how we would do it," Foss said.

And then they got it done.

The Modules

The training modules each have a different focus and different intended audience, but all deliver similar information.

"Each looks at how pesticides get into water, at soil and pesticide properties that can contribute to pesticides getting into water, and at how to use IPM practices to reduce pesticide contamination," Foss said. "We wanted it to be positive and practical."

Haver was happy to be involved.

"This was something I'd wanted to create

"My perspective is we can't continue to contaminate our water supply. I'm a mother of children who will also have children. These things are important. We have to learn how to manage the risk."

- Susan Donaldson

for my own county for some time, but it was a very easy translation to do it for the whole region," he said. "Most stuff doesn't need to be so specific."

In fact, a certain lack of specificity was by design.

"We expect people to take these modules and adapt them for their local audiences and needs," Foss said. "We want trainers to add in information they feel is pertinent."

For instance, the three presentations do not contain specific precautions about pyrethroids or organophosphates, and a few reviewers thought they should. The team initially had that information included, but decided to cut it out.

"That type of specific pesticide information is important and it's something we expect a trainer to include as it relates to their area and audience," Foss said.

Unlike many training materials, these were peer reviewed before publication.

"We don't consider this the end of the

project," Foss said. "I hope we continue to get comments and reviews, because we'll make changes to improve the information."

The Impact

Foss, Donaldson, Hirnyck and Haver have all used the training material for local audiences with good results. Haver presented the urban modules to a group of local government representatives, and the others have used various modules with groups as large as 220 people.

Hirnyck did audience surveys at several of her presentations to agricultural applicators, and got encouraging feedback.

"After this workshop, I have learned more about how pesticides get into our drinking water and streams." 84% agreed.

"In the future, I plan to review my pesticide applications to be sure I am incorporating BMPs to protect water resources in my area." 86% agreed.

"Did your knowledge of pesticide use and safety increase as a result of attending this class?" 92% said yes.

The key now is getting the training material out to a larger audience so awareness reaches from large commercial applicators all the way to the home gardener who occasionally buys a gallon of herbicide at the local nursery.

"We need all audiences thinking about what they can do to keep pesticides out of the water," Donaldson said. "Every little bit helps, and we want people to start doing what they can do."

One thing the Western IPM Center has done is make the slide presentations available to anyone who wants to use them. Visit www.wripmc.org and look for the "Water Quality Protection Training Modules for Agriculture, Homeowners & Landscape Professionals" link under Useful Resources. That will take you to a registration page (so the Center can track downloads) and once you've entered your contact information it'll take you to the slides. From there, you can download each module to your computer, then add, modify and customize the presentations to make them useful to your local audience.

And share them with any colleagues who also might be able to use them.

"My perspective is we can't continue to contaminate our water supply," Donaldson said. "I'm a mother of children who will also have children. These things are important. We have to learn how to manage the risk."

New Communication Plan Means New-Look Publications

There's something missing from this issue of The Western Front, but hopefully you didn't miss it.

"Nowhere, except right here and for the last time, will readers see the acronym WIPMC," said Steve Elliott, the new writer for the Western IPM Center. "Wading through an alphabet soup of acronyms is no fun for anyone and doesn't help us connect with all the people who are important to us throughout the West and in Washington, D.C."

To improve those connections, the Center has developed a new communications strategy that identifies its important audiences and ways to better communicate with each of them. Writing that's accessible and conversational is one of those ways.

Another key element of the strategy has been updating and improving the Center's website at www.wripmc.org.

"The web is a work in progress, but the home page is much cleaner and better organized, and the News & Announcements page is now updated regularly," Elliott said. "If you haven't visited the site in a while, it's a good time to take a look because we are continually making it better and easier to navigate."

Also new are a series of Western IPM Center fliers, highlighting what the Center does, the funding it provides, some of the

projects it's undertaken and the partnerships it's created. They are available for download at www.wripmc.org.

And those steps are only the beginning. The Center will be communicating with its stakeholders more regularly through email updates, and with the agricultural press and commodity groups through news releases. And we're open to suggestions.

"Good communication doesn't flow in just one direction. Good communication is a two-way conversation," Elliott said. "So we want to hear from our stakeholders about how we're doing and what they'd like to see from us. How can our website be more useful, and how can this newsletter be improved? Are there better ways to reach you? If you have feedback, we want to hear it."

Steve Elliott can be reached at selliott@ucdavis.edu.

Western Integrated Pest Management Center

FUNDING

The Western IPM Center promotes integrated pest management, a science-based process to identify and reduce risks from pests using the most economical and environmentally responsible means.

ABOUT

Who We Are

The Western Integrated Pest Management Center is one of four regional centers funded by the USDA to promote IPM practices. We serve as the hub of a multi-state partnership and a communication network linking a diverse audience that includes researchers, growers, extension educators, commodity organizations, regulators, environmental groups, pest control professionals, government agencies and others.

From our office headquartered at UC Davis, we serve 14 Western states and territories stretching from the Northern Mariana Islands to Colorado.

What We Do

The Western IPM Center promotes the adoption of IPM practices to solve pest-management problems in agriculture, urban areas and natural lands throughout the West. We encourage this science-based approach to pest management using pest biology, environmental information and all available technology to reduce pest damage to acceptable levels by the most economical means, while reducing the risk to people, property, resources and the environment.

Our goal is to bring the right people together with the necessary resources to solve emerging and important pest problems in the West.

How We Do It

The Western IPM Center connects people across states, disciplines and purposes in order to increase the understanding of pest issues and expand the use of IPM practices in the West.

We listen to our stakeholders to identify problems and set priorities for IPM research and outreach, and we support solutions by funding multi-state work groups, Pest Management Strategic Plans, IPM research, IPM implementation efforts, and outreach and publication projects.

We publish a quarterly newsletter, annual report and a website at www.wripmc.org.

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FUNDING: Stakeholder input, collaboration and outreach matter

Continued from front page

based pest modeling, began as work groups. These grants require multi-state approaches, and are also typically in the \$10,000 to \$15,000 range.

Addressing IPM Issues

These are the Center's biggest grants and allow researchers to develop enough preliminary data to be competitive when applying for larger national awards. Funded up to \$70,000 over two years, they provide enough money to fund a master's student for a few years and develop preliminary findings and possibly a master's thesis to show the potential for future research.

"If you think of IPM funding as a pyramid, the top of the pyramid are the large national programs, the Regional IPM grants and the Agriculture and Food Research Initiative grants," Farrar said. "The AFRI grants can be more than \$1 million a year."

The Western IPM Center does not administer those grant programs.

Publications and Outreach

Publication and outreach grants can get overlooked, but are a critical component of the cycle because they get knowledge developed during research phases out to growers so they can apply it in the field. These funds can also be used to measure the effectiveness of earlier projects and see if behaviors have changed – a critical element to address.

"It's closing the loop," Farrar said. "You see if you've had an impact."

Tips for New Applicants

The Western IPM Center is always eager to work with new researchers, and Farrar had this advice for first-time applicants:

- Address a problem that stakeholders care about, and be able to document their concern.
- Seek collaborators. The Center has a regional mission and prefers multi-state collaborations. If the pest or crop you're examining only occurs in one

state, make that clear in any proposal.

- Have a good plan for outreach at the end of a project. Information that doesn't get back out to the growers, pest managers or other stakeholders doesn't do anyone any good.
- Watch our website for grant announcements. We post important ones on our home page at www.wripmc.org, as well as the Funding Opportunities page. (The News & Announcements page is also updated frequently and a good source of IPM-related news.) The application deadline is closed for the 2013 funding cycle, but you can always start planning for 2014.
- If you have questions, call or email and ask. We're actually helpful folks.

Director Jim Farrar can be reached at jffarrar@ucdavis.edu or (530) 754-8378; Associate Director Carla Thomas at cthomas@ucdavis.edu, (530) 752-7010.

State Briefs

UTAH

Growing Organics at High Elevations

More than 100 producers, educators and industry support people – mostly small-scale farmers interested in learning how to grow in a high-elevation, arid environment with cold winters and hot summers – attended a highly successful organic workshop in Salt Lake City in February.

The primary customer base for these farmers is local residents seeking an organic and sustainable food supply. Workshop presentations included orchard fertility, weed and water management through long-term groundcover systems, organic pest management in vegetable crops, principles of sustainable weed management, organic peach production practices, guidelines for organic certification and more.

A second workshop is planned for June 11 to showcase organic fruit and vegetable research at the Utah State University farm in Kaysville. Both are sponsored by Utah State University Extension.

CALIFORNIA

Videos Spotlight IPM Innovators

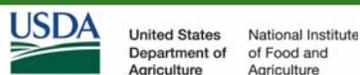
The California Department of Pesticide Regulation recognizes organizations that reduce pesticide use through its IPM Innovator Awards. Recipients are role models for voluntarily adopting effective reduced-risk pest management strategies and for their willingness to share those strategies with others.

On YouTube, the department is now sharing some of those success stories through videos available at www.youtube.com/user/CaliforniaPesticides. The videos feature Marin County Parks, Dixon Ridge Farms and Gallo's Sonoma Vineyards, and Spring Mountain Vineyards. Nominations for the IPM Innovator Awards can be submitted year round at www.cdpr.gov/docs/pestmgt/impinov/nominate/nominate_ipm.htm

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Mark Your Calendar

June

- American Phytopathological Society Pacific Division Meeting, held jointly with the Caribbean Division June 17-19, Tucson, Arizona
www.apsnet.org/members/divisions/pac/meetings/Pages/default.aspx
- International Clubroot Workshop June 19-21, Edmonton, Alberta, Canada
www.regonline.com/builder/site/default.aspx?EventID=1203840
- XVI International Botrytis Symposium June 23-28, Locorotondo, Bari, Italy
<http://www.xvibotrytissymposiumbari.it/>
- Joint Meeting of the International Symposium on Tomato Diseases and U.S. Annual Tomato Disease Workshop June 24-27, Orlando, Florida
<http://nfrec.ifas.ufl.edu/41std/index.shtml>
- North American Invasive Plant Short Course June 25-27, North Platte, Nebraska
<http://ipscourse.unl.edu/>

July

- 13th ISHS International Workshop on Fire Blight July 2-5, Zurich, Switzerland
www.fireblight2013.org
- Biodiversity and Integrated Pest Management: Working Together for a Sustainable Future July 4-5, Manado, North Sulawesi, Indonesia
<http://www.oired.vt.edu/ipmcrsp/biodivipm2013/>
- 52nd Annual Meeting of the Society of Nematologists July 14-17, Knoxville, Tenn.
www.nematologists.org

August

- Rocky Mountain Conference of Entomologists August 4-8, Woodland Park, Colorado
<http://agrilife.org/rmce/>
- American Phytopathological Society - Mycological Society of America Joint Meeting August 10-14, Austin, Texas
www.apsnet.org/meetings/annual/pages/default.aspx
- Second International Conference on Pollinator Biology, Health and Policy August 14-17, State College, Penn.
<http://ento.psu.edu/pollinators>

November

- Entomological Society of America 61st Annual Meeting November 10-13, Austin, Texas
www.entsoc.org/am/fm/index.htm

December

- 4th International Phytophthora capsici Conference December 3-5, Duck Key, Florida
<http://conferences.dce.ufl.edu/pcap>

2014

March

- 26th Vertebrate Pest Conference March 3-6, Big Island, Hawaii
www.vpconference.org

