



Western Center Promotes Urban IPM

Three projects bring IPM to schools, homes and communities

Integrated pest management isn't just for agriculture. The very principles that make IPM an effective and less-hazardous way to manage pests in our fields can also be used to safely control insects, mice and other pests in our homes, schools and offices.

The Western IPM Center promotes



community IPM by regularly funding new research and outreach efforts to make schools and all types of housing safer for children and families. Here are highlights of three recent projects:

Mice in Schools

Mice have been linked to health risks, including asthma, and in 2010 were the second most-reported pest in Oregon schools. So the Northwest Center for Alternatives to Pesticides applied for a Western IPM Center grant to teach school facilities managers how to use IPM techniques to control mice.

The result was three mouse-control videos available on YouTube that have not only been distributed to the vast majority of Oregon school districts, but are being viewed and used by public housing providers, public health nurses and others in and out of Oregon.

"The feedback has been great," said Northwest Center Environmental Health

Associate Aimee Code, a co-project director with Tim Stock of Oregon State University Extension. "We've heard from a number of custodians and facilities managers this is exactly what they need, and when they have a mouse problem they learn how to solve it."

The three videos in the series focus on exclusion (keeping mice out), sanitation and trapping. They present the information in a straightforward manner with narration, images and interviews.

"People really like the simple, straightforward nature of the video," Code said. "They didn't want an actor, didn't want a storyline. They just wanted the information, the straight facts."

A sample of those facts:

- Place mousetraps along mouse corridors three to five feet apart, with the snap bar facing the wall.
- Because mice are curious, place

See **URBAN**, page 5

A Western IPM Center Signature Program

Invasive Species Group Develops Coordination Guidelines

When an invasive species is first detected in an area, the initial response is critical. Like with a cancer, the correct early detection and response can make a big difference in controlling the spread and severity of the outbreak.

To help make that initial response as effective as possible, the Western IPM Center Invasive Species Signature Program is developing protocols for invasive weeds, insects and diseases. Subgroups focused on each area are developing those protocols, using current invasive species issues as models.

The plant pathogen subgroup selected *Candidatus Liberibacter solanacearum*, transmitted by psyllids, which causes zebra chip disease of potato and vein greening of tomato. The University of Arizona's Judith Brown, School of Plant Sciences, is

"The next step could be to test the draft plan using a recent invasive species, such as the citrus greening pathogen."

- Judith Brown

leading the subgroup.

"Our charge was four-fold," she said. "Get the group together and set priorities and goals. Second, draft an invasive species plan that could serve as a model for other invasive pathogen introductions or emergences. Third, hold a symposium to raise awareness and connect with other scientists and stakeholders in the region,

and fourth, pursue possibilities for funding to study the problem in greater detail,

See **INVASIVE**, page 6

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Roof Rats Bring the IPM Message Home in a Hurry

I recently learned firsthand about urban vertebrate integrated pest management – specifically trying to get roof rats out of my home.

As a result of becoming the Center director, I relocated my family from Fresno to Davis, California. We purchased a small, 60-year-old bungalow and soon discovered there were other occupants already living in the attic and ample evidence that they had been residents for a long time.

Roof rats, which I now know are common in Davis, had found a way into the attic and taken up residence. As an aside, pest inspections for home sales in California only focus on pests that can cause the house to fall down, such as termites and wood-rotting fungi. Pests that merely give homeowners the heebie jeebies by scratching around in the attic early in the morning do not count.

The scientific name of roof rats (also called black rats) is *Rattus rattus*, making them one of the few organisms whose genus name and species epithet are the same word. Roof rats are smaller than Norway rats and their tails are longer than their bodies. They are nocturnal and omnivorous but prefer fruit, nuts and berries. Fortunately for them, our neighbor has an enormous mulberry tree so they are well fed.

We did want not to use anti-coagulant rat poisons because of the potential for secondary poisoning of cats and owls. Some Davis residents put up owl boxes in trees to encourage owl nesting in town. Since anti-coagulants kill by causing internal bleeding several days after the rats eat a lethal dose of poison, debilitated rats could be caught and eaten by neighborhood cats and owls.

One of the first anti-coagulants, warfarin, was named after the Wisconsin Alumni Research Foundation (WARF) at University of Wisconsin, my alma mater. WARF was initially established to patent the process for adding vitamin D to milk by using UV radiation. It later funded the

research that resulted in the discovery and patenting of warfarin, thereby returning money to WARF to fund more research. The real money in anti-coagulants is in their low-dose use as medicine to treat or prevent blood clots as opposed to the high-dose use as vertebrate pest poisons.

Since we decided anti-coagulant poison baits would be a last resort, an IPM combination of exclusion and trapping seemed prudent. I put new hardware cloth in the gable vents and trapped three rats but it was not enough. We still heard rats every morning. Since my attempts at do-it-yourself exclusion and trapping failed, we sought professional help.

The company we selected provided a comprehensive package consisting of plugging all exterior openings to the house with either mortar or hardware cloth, vacuum removal of all soiled attic insulation, disinfecting spray of attic surfaces, installation of new insulation, and a one-year guarantee. The price was several thousand dollars, but the combination of removing the creepiness factor of rats above our heads and brand new R38 insulation made it an easy decision.

The first two rounds of plugging holes failed since rats can find openings more easily than humans can. The third time the exclusion team succeeded in blocking all the rat entrances into our home. Exclusion of rats has the corollary of inclusion of any rats already inside. Since roof rats are nocturnal, at least one was sealed into the attic and later perished, probably from lack of food and water.

My background is in diseases of agricultural plants, so dealing with a vertebrate pest in an urban setting has been quite an education. However, I found the basic principles of integrated pest management apply regardless of pest or setting.



Jim Farrar



A roof rat's tail is longer than its body.

Cutting the budget while preserving the Center's vital functions

I know I'm not alone in my lack of interest in the budget challenges of groups supported by tax dollars, so I'll keep this short. The Western IPM Center is funded by the USDA's National Institute of Food and Agriculture. Congress reduced their budget, so ours went down too. Here's how we dealt with that \$73,716 cut.

My goal in absorbing the cut was to protect the core functions of the Center: coordinating responses to requests for comment from EPA, our three Signature Programs, and the Center grants program.

A portion of the budget reduction came through reduced indirect charges (smaller budget means smaller indirect) from the University of California. Some of the reduction was offset by the lower salaries of new, more junior-ranking Center staff as compared to the previous staff. The remainder was taken from the Center travel budget and a small amount from the Center grants program.

Because of the reduced travel, I will not meet in-person with as many stakeholders throughout the West next year, but I will use electronic communication to stay in touch.

Advisory & Steering Committees

There are some changes to the Advisory and Steering Committees.

On paper, members of both committees serve three-year terms. In practice, committee members served until they wanted to step down. This year I am beginning staggered one-to-three-years terms for each member so all of the present members don't term out at the same time. I will be seeking new Advisory and Steering Committee members to replace those who term out. If you are interested in volunteering or in volunteering someone else, please contact me.

Finally, one direction from the Steering Committee at our June meeting was to increase ag industry representation. I will follow that guidance as I recruit new members.

2013 Center Grants Show the West's Great Diversity

From *Microdochium* patch on putting greens to powdery mildew on hops to Iris yellow spot virus in onions; from training health inspectors in school IPM to determining if cattle grazing and bio-control insects can control spotted knapweed, the Western IPM Center's 2013 funded grants cover a wide range of Western states and pest issues.

"One of the most interesting and challenging aspects of the West from a Center perspective is the diversity of not only its agriculture, but its geography, environment and lifestyles," said Western IPM Center Director Jim Farrar. "We have applications coming in from both Alaska and Hawaii, and from people working with grazing land in Montana and high-density housing in Portland."

For the West, that diversity is par for the course.

Of the 41 proposals received and reviewed by the evaluation



University of California

A Center grant will produce an IPM guide for managing medusahead, seen here.

committee, here are the grants funded by the Western IPM Center in the 2013 competitive grants cycle.

Outreach and Publications

Training health inspectors in school IPM

Aimee Code, Northwest Center for Alternatives to Pesticides

Integrated pest management guide for medusahead in the Western United States

Joseph DiTomaso, University of California Davis

Promoting IPM to urban audiences through YouTube

Mary Louise Flint, University of California Davis

IPM for low-income residents: Stopping harmful self-treatment for bed bugs

Josh Vincent, Northwest Center for Alternatives to Pesticides

IPM curriculum for elementary school teachers in the West 2013-2014

Deborah Young, Colorado State University

Work Groups

Western region tribal work group

Nina Hapner, Kashia Band of Pomo Indians of the Steward's Point Rancheria

IPM adoption and impacts assessment work group

Neil McRoberts, University of California Davis

Kuskokwim River tribal work group

John Oscar, Kuskokwim River Watershed Council

IPM Issues – Research

Developing IPM components to address emerging virulent strains of the hop powdery mildew fungus

Ann George, Washington Hop Commission

Fungicide-free management program for the control of *Microdochium* patch on putting greens

Alexander Kowalewski, Oregon State University

Can high-density cattle grazing be integrated with bio-control insects to suppress spotted knapweed?

Jeffrey Mosley, Montana State University

Effect of micronutrients on Iris yellow spot virus of onion

Claudia Nischwitz, Utah State University

IPM Issues – Outreach and Implementation

Integrating agricultural conservation practices into Idaho and Washington farms

Gwendolyn Ellen, Oregon State University

Pest Management Strategic Plans

Pest Management Strategic Plan for winter wheat in the Western Great Plains

Frank Peairs, Colorado State University

Special Issues

A workshop on maximum residue levels, a critical issue for integrated pest management and international trade of U.S. agricultural products

Lori Berger, California Specialty Crop Council

Pest Management Strategic Plan for pears in Oregon and Washington

Joe DiFrancesco, Oregon State University

Invasive species and water quality training

John Oscar, Kuskokwim River Watershed Council

Water Quality Material Finds a National Audience

The training material produced by the Western Integrated Pest Management Center to protect water sources from pesticides is being used not just in the West, but across the country.

From the Seattle Parks and Recreation Department to a golf course near Sarasota, Florida, the water quality training slides are reaching a wide and diverse audience.

The slides were created through a Western IPM Center signature project to protect water quality. The authors developed separate training modules for homeowners, professional landscapers and agricultural applicators and the Center made them available for free on our website.

“The idea was that people would adapt the slide sets for their specific audiences and needs,” said Carrie Foss, Washington State University’s urban IPM director and one of the authors. “It’s gratifying to see that’s exactly what’s happening.”

After the slides were featured on the cover of the summer issue of *The Western Front* and written about in several agricultural and landscaping publications, awareness jumped. They’ve now been downloaded more than 60 times in 19 U.S. states and British Columbia.



Download the slides at wripmc.org. Look for the link on our homepage under Western IPM Center Project Websites.

Barbara DeCaro is an IPM coordinator in charge of best management practices for landscape, horticulture and urban forestry at the Seattle Parks and Recreation Department. She learned about the slides through *Landscape Management Magazine* and plans to use them in multiple trainings.

“All municipalities are looking at how to protect and maintain storm-water quality and train staff in a way that institutionalizes the information and also fosters personal responsibility and decision-making to protect our waterways,” she said. “I develop and provide training in these areas and see incorporating the slides as part of that training.”

Marcus Duck, an academic specialist

and program coordinator in horticulture at Michigan State University, is updating his landscape maintenance and irrigation courses with information from the slides.

“The images are great and informative for our students,” he said.

In Washington, the slides will be featured in a new gardening website being developed by an extension team co-led by the Washington State Pest Management Resource Service.

“We downloaded the slide set for homeowners to use in our statewide gardening web site,” said Catherine H. Daniels, WSU pesticide coordinator. “The site is still under development so I can’t give you any information yet about how the audience has received it, but my personal opinion is that the slide set is valuable and I very much appreciate the work that went into developing it.”

And at the opposite end of the country, Patricia Albertini at the Lakewood Ranch Golf and Country Club in Florida accessed the training just for her own education.

“I downloaded the slides because I’m always trying to learn more about water quality,” she said. “Our golf course is Audubon Certified and we try to eliminate pesticide use when possible.”

Funding Categories Change for 2014 Center Grants

There are changes coming to the grants provided by the Western Integrated Pest Management Center.

Instead of six somewhat confusing grant categories – two of which contained the word “outreach” – there will now be just four categories. They are:

- Project initiation grants
- Work group grants
- Outreach and implementation grants
- IPM planning document grants

The change is both to simplify the grants program and to direct Center funds where they can do the most good.

“In the past, we had some research-focused categories, but didn’t really provide enough funding to carry out a full research project,” explained Western IPM Center Director Jim Farrar. “These new categories target the money where we can make an impact – at the beginning and end of projects, and bringing groups together to begin tackling important pest issues.”

The project initiation, work group and outreach and implementation grants will all be funded at a maximum of \$30,000 for one year. IPM planning document grants – which include pest management strategic plans and crop profiles – will be funded up to \$10,000 for one year.

The Center will continue to offer special issues grants for new or emerging pest threats that arise between grant cycles, and fund those for up to \$5,000 for one year.

The changes to the grants program were debated by the Western IPM Center Advisory Committee and adopted by the Center’s Steering Committee in June. They will take effect with the 2014 grants cycle.

“This is a change to the way we’ve done things, but I think it’ll be good for IPM researchers in the West,” said Farrar. “We just don’t have the dollars available to fund full research projects, but our project initiation grants can provide the preliminary, proof-of-concept data researchers need to secure larger Regional IPM, Agriculture and Food Research Initiative and EPA grants.

“And at the back end of projects, our outreach and implementation grants can help produce the extension materials, field guides or training programs to get the best IPM practices identified by new research out to the people who can use them in the field,” Farrar said. “And ultimately, that’s what we’re here to do.”

Details will be available in the Western IPM Center Request for Applications, which will be posted this fall.

To receive an email when the RFA is released, visit wripmc.org and click on the “Subscribe” link.

URBAN: Center Projects Bring IPM to Schools and Homes

Continued from front page

traps one night, then remove them for a week. Repeat as needed.

- Jam makes an excellent bait.

“One thing that struck me was just how small a space can allow a mouse to get into a school,” Code said. “A missing door-sweep is all it takes, or a dime-sized hole.”

View the videos at the Sustainable Places Information Network website at www.sustainableplaces.org/category/videos

IPM in Public Housing

Public housing presents unique pest-management challenges, including rapid turnover of residents, language and cultural barriers and even second-hand clothing and furniture.

And those pest problems – especially when bed bugs are involved – can lead residents to resort to some pretty drastic and harmful pest control strategies.

“Some people are using gasoline on their mattresses,” said the University of Arizona’s Dawn Gouge, the project leader of the Western IPM Center’s IPM in Public Housing Project. “It’s incredibly dangerous.”



Robert L. LaMotte, USDA

Bed bugs hiding in a crib mattress.

To help residents address pest issues in a far safer way, Gouge and the project team conducted 13 trainings for public housing residents and managers in Oregon, Washington, Arizona and Colorado, teaching folks IPM principles they can use to keep bugs out of their homes and manage any that get in.

During the trainings, the team learned as much about reaching their target audience as public housing residents and managers learned about integrated pest management. And Gouge and her colleagues used those lessons to develop more effective ways to teach IPM to a public housing audience as the project progressed.

“We knew there would be language barriers, for instance,” she said. “But we learned that doing separate presentations

for different language groups is much more effective than a mixed audience.”

Other lessons:

- The message for the residents and managers doesn’t need to differ all that much.
- Online resources aren’t much help because relatively few people have Internet access.
- Complex lectures with wordy slides are boring. Interactive presentations, demonstrations and giveaways generate a lot more excitement.
- Live bugs rule. (Just keep them contained!)

“It’s when I started bringing live specimens that we got the ‘ah-ha’ moments,” Gouge said. “Even if it was just three or four specimens – that’s when you really get people.”

Another thing the team learned is that in the urban pest hierarchy, bed bugs are king

“Some people are using gasoline on their mattresses. It’s incredibly dangerous.”

- Dawn Gouge

and queen. Even if more hazardous insects are present, getting rid of bed bugs is the top priority.

“I’m convinced you can hold up a bank with a bed bug,” Gouge said. “That’s how afraid of them people are.”

In fact, at one presentation, a resident brought in bugs from her home she thought were bed bugs. When Gouge told her they were young German cockroaches, the woman left – even though German cockroaches are linked to health issues like asthma.

To help people avoid bedbugs, the team created a very picture-heavy presentation about bed bugs to help people identify them, find where they hide and keep them out of their homes.

Download the bed bug presentation at wripmc.org. Look under “Western IPM Center Project Websites” for the link.

IPM Implementation and Assessment in Schools

Both pests and pesticides in schools can pose a health risk to children, so promoting IPM practices in schools is doubly

IPM in Action

important. The Western IPM Center has been funding a School IPM Implementation and Assessment Work Group for several years, to develop regional resources and promote school IPM.

“We’d been building a regional network, website and resources, and needed to do a project,” explained Washington State University’s Urban IPM Director Carrie Foss, the project leader. “We decided to develop a curriculum and pilot training for outdoor school IPM.”

The group developed its materials and conducted the pilot training in Salt Lake City in September 2012. The training covered basic IPM principles, turf management, pest diagnosis, common pests and their control strategies, pesticide safety and a tour of a nearby school.

The trainers were Foss, Oregon State’s Tim Stock, Ryan Davis from Utah State and Deborah Young, the IPM coordinator at Colorado State University. Gregg Smith, facilities director at Salt Lake City School District, hosted the pilot training. Twenty-seven people attended, representing five of Utah’s biggest school districts with some 170,000 students.

“We asked the group what worked and what didn’t work, and the local, specific information is what they valued the most,” Foss said. “They wanted IPM strategies for pests specific to their area.”

The school IPM team members took that lesson, and are adapting the curriculum for their specific regions and audiences.

In that, the school IPM curriculum is similar to another recent Western IPM Center product, water quality training material that shows people how to protect water sources from pesticide contamination. The basic curriculum provides a backbone for local trainers to adapt and individualize for their particular area and audience, and Foss sees the outdoor school IPM curriculum working the same way.

“It has to be adapted and modified for the specific area where it’s being used,” she said. “That’s what will make it useful.”

The Western IPM Center continues to promote community IPM. See the list of 2013 funded projects on page 3.

Learn IPM Impact Assessment with New Online Resources

The goals of integrated pest management are to provide economic benefits and reduce risks to human health and the environment. To show new IPM research is helping achieve those goals, scientists measure the impacts of their research.

However, many of the agriculture, natural science and extension scientists who perform IPM research don't have training on how to conduct economic or social science impact assessments.

To address this, the Western IPM Center's IPM Adoption and Impacts Assessment Work Group, a collection of natural and social scientists from across the country including the other Regional IPM Centers, created online resources showing IPM researchers how to conduct basic impact assessments.

"The aim is to provide a toolkit that will allow people who don't have training in impact assessment methods to do basic impact assessments," said Neil McRoberts, a plant pathologist at UC Davis who coordinates the group. "We recognize that impacts can be measured in lots of different ways – economic impacts, changes in social networks, or changes in

environmental effects – and that different approaches will be relevant in different contexts. So the aim is to provide people with the means to do a range of different types, at an introductory level."

The online resources include an introduction to impact assessment, and modules on surveys, economic analysis, social network analysis, focus groups and

"I think the core techniques we're suggesting people use are likely to remain valid for a long time."

- Neil McRoberts

observation data. Chapters within each module include when a measurement or method is appropriate, what to collect, how to collect it, how to analyze it and how to report it.

"I think the core techniques we're suggesting people use are likely to remain valid for a long time," said McRoberts, who stressed that the modules are careful to warn users when they'll need to call in economists or social scientists.

"We're taking pains to define the limitations of what's on offer so that people don't over-reach," he said.

One goal is to get researchers thinking about impact assessment at the beginning of their projects so they can include assessment plans in their initial proposals.

Another benefit is that IPM researchers will become more proficient in basic social science methods.

"We're hoping that the modules will be recognized by funders as a viable proxy for having actual economists or social scientists do simple impact assessments," McRoberts said. "That would help reduce something of a bottleneck that has been developing in impact assessment."

Instead of social scientists teaching the basics over and over, it frees up time to collaborate with IPM researchers with more sophisticated datasets.

"We support project directors to better plan their project assessment," said Center Director Jim Farrar. "This effort leverages social science talent from all regions."

Access the assessment training at wripmc.org. Look for the link under "Western IPM Center Project Websites."

INVASIVE: Guidelines offer protocols for response groups

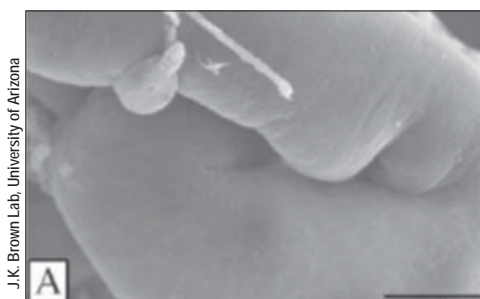
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given that it is a new vector-pathogen complex that is associated with diseases in a number of solanaceous crops."

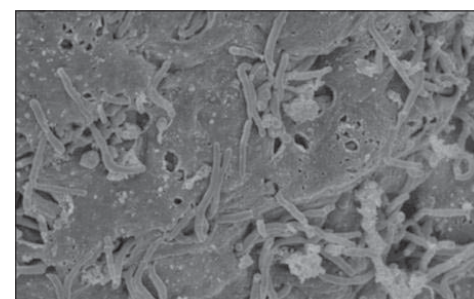
The first three of those goals have been achieved, and the group's draft document, "Guidelines for Forming and Conducting a Local or Regional Invasive Species Coordinating Group," is available on the Western IPM Center website. Photos from the symposium, held at the American Phytopathological Society's Joint Caribbean-Pacific Division meeting in June, will be posted there as well.

In many states, Brown said, the relationships between the university and experiment station scientists involved in pathology, weed science, entomology and abiotic stress research and the state and regional regulatory agencies are not as strong as they should be to detect and respond to invasive species and other kinds of outbreaks that could be disastrous to agriculture.

"We recognized some years ago in Arizona that we didn't have relationships between all of the groups that would respond to an



Two views of potato psyllids' internal organs. An uninfected gut (left) and a gut infected by liberibacter (right).



invasive species," Brown said. "So now our Arizona Plant Diagnostic Network, which is a member of the National Plant Diagnostic Network, meets twice a year so everybody knows each other and has the opportunity to share observations and information about potential new problems involving invasive species, as well as resurgent endemic problems."

The draft guidelines outline generally the ideal makeup of the coordinating group, the activities and responsibilities of members, and offers protocols for detection, response and mitigation, and recovery. It also highlights various

challenges invasive species coordinating groups may encounter and offers some possible solutions.

"The next step could be to test the draft plan using a recent invasive species, such as the citrus greening pathogen, *Ca. Liberibacter asiaticus*, to identify gaps, make necessary revisions and identify aspects that could be improved or done better," said Brown.

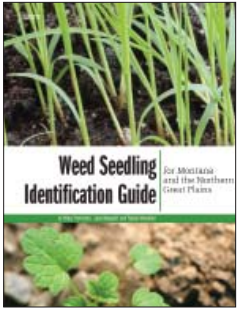
See the guidelines and other resources on the Invasive Species Signature Program webpage at wripmc.org. Look under "Western IPM Center Project Websites" for the invasive species link.

Hot Off the Press: New IPM and Pest Guides

A focus of the Western IPM Center is getting pest and pest-management information out to the people who most need it – the growers, land and water managers, homeowners, school principals and pest managers throughout the West.

One way to do that is to help fund guides to specific pests or specific regions. Here are three guides published with Western IPM Center assistance in 2013.

Weed Seedling Identification Guide for Montana and the Northern Great Plains



Rapid and accurate identification of weeds at the seedling stage can save producers and land managers time and money while also reducing herbicide

use in the environment because early identification makes weed management easier and frees desired plants from competitive suppression by the weeds.

However, most weed identification guides only provide information about the mature stage of the plants.

This 88-page guide published by Montana State University fills this information gap for the Northern Great Plains by presenting photos and information for dozens of common grasses and broadleaf weed species.

Each listing includes photographs of

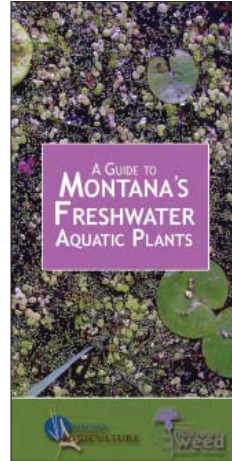
the cotyledons, first true leaves, rosettes (where applicable), mature plants and seeds. The sturdy, pocket-sized guide is spiral-bound and color-coded to help users quickly identify the weed seedling in question. **Order a copy at www.msuextension.org/store/**

Guide to Montana's Freshwater Aquatic Plants

Aquatic invasive species pose a threat to the ecology of Western Montana's aquatic environments as well as its economy, and most invasive aquatics are brought in by people. Educating water users and monitoring high-use areas are keys to prevention.

To promote those efforts, the Missoula County Weed District created a picture-heavy key and guide to the submerged and floating plants of the Northern Rockies, which was included as an insert in *A Guide to Montana's Freshwater Aquatic Plants* published by the Montana Department of Agriculture.

See the guide online at agr.mt.gov/agr/Programs/Weeds/AquaticWeeds/Thekeyisatwww.missoulaeduplace.org/submergedaquaticplantkey.html



Field Guide for Integrated Pest Management in Pacific Northwest Vineyards

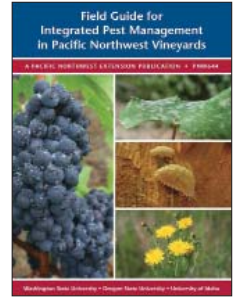
Published by the Pacific Northwest Extension, this full-color, 132-page guide introduces IPM practices and covers all aspects of vineyard pest management in an easy-to-read, spiral-bound book format. Sections are color-coded to enable quick flipping to the desired topic, and the paper is a coated stock that will stand up to several seasons in the door pocket of a pickup.

Filled with photos, the guide highlights the following:

- Resistance management and buffers
- Viticulture practices and IPM
- Insect and mite management
- Beneficial arthropods
- Disease managements
- Nematode management
- Weed management
- Abiotic stresses and disorders, and vertebrate damage

The Pacific Northwest Extension is a cooperative venture between Washington State University, Oregon State University and the University of Idaho. In addition to Western IPM Center funding, the Washington Wine Industry Foundation also provided support for printing and distributing the guide.

Order your copy at <https://pubs.wsu.edu/>



State News

ARIZONA

Survey shows IPM adoption levels in schools

Since 2008, the Arizona School IPM Program has been surveying school districts about their pest management policies and practices. The 2012 survey obtained information from 428 schools in 76 districts, covering 405,960 children. Highlights include:

- 26% of school districts had adopted IPM policies
- 20% had written management plans for common pests; 36% used their pest control company's recommendations
- Over 80% of districts did not have an IPM committee and pest management services were done by contractors
- 30% had a designated IPM program coordinator at the school with more than two years of experience
- 44% tracked the number of pest complaints each year, and the average number of complaints per district was 45
- 66% of school districts tracked funds spent on pest man-

agement, and the average amount spent in the last fiscal year was \$8,780

- 64% tracked pesticide applications in schools or on school grounds, and the average number of annual applications per district was 73
- Only 2% used IPM curricula or lesson plans for students
- 65% were interested in receiving an IPM newsletter

The survey provides valuable data that helps sustain and improve the program in Arizona. Most importantly, it points towards the need for sustained and dedicated efforts to ensure the popularization and implementation of IPM practices.

Intensive outreach campaigns and training workshops are planned to attract attention from other Arizona schools, with a goal of increased adoption of IPM practices.

Mark Your Calendar

October

Extension Sustainability Summit
October 2-3, Park City, Utah
www.wrdc.usu.edu/html/programs/less

North American Invasive Species Management
Association Meeting
October 28, Jackson, Wyoming
www.naisma.org

November

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

Sustainable Ag Expo
November 18-19, San Luis Obispo, California
www.sustainableagexpo.org

December

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

2014

California Weed Science Society
January 22-24, Monterey, California
www.cwss.org

Eco Farm Conference
January 22-25, Pacific Grove, California
<http://www.eco-farm.org/programs/>

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

2015

Eighth International IPM Symposium
March 23-25, Salt Lake City, Utah
www.ipmcenters.org/ipmsymposium12/



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Director:
Jim Farrar (530) 754-8378
jjfarrar@ucdavis.edu

Writer:
Steve Elliott (530) 752-7011
sfelliott@ucdavis.edu



Western Briefs

ALASKA

Citizen Scientists Watch for Invasive Pests

To expand the number of eyes watching out for exotic and invasive pests, the Alaska IPM Program is recruiting “Citizen Scientists” to be on the lookout for unusual insects, plants and disease organisms throughout the state.

“Citizen scientists, or perceptive people, have made some of the most significant pest detections in recent decades, including the Asian Longhorn Beetle and other invasive species,” said Gino Graziano, an invasive species instructor with the program. “Our goal is to educate individuals who enjoy observing the natural world and are curious about learning more about what they see.”

The more citizen scientists looking for insect, plant and disease organisms throughout our state, Graziano said, the better informed officials will be on issues that may impact the environment, natural resources and the state’s food supply.

To make reporting easy, the Alaska IPM Program set up a pest identification and reporting portal on the web, allowing folks to easily upload their digital photos of unusual insects and plants.

“The information submitted is sent to a statewide team who promptly respond with information regarding the sample,” Graziano said. “As needed, information can be sent to local or state land resource managers who quickly respond to potential problems.”

So far in 2013, citizen scientists have uploaded 30 submissions to the site, and although none were new species in the state, several were high-priority weeds, Graziano said.

The Alaska IPM Citizen Monitoring Portal can be found at www.uaf.edu/ces/ipm/cmp/

THE WEST

Western IPM Center on Social Media

To enhance communication between the Western IPM Center and our many stakeholders, we now publish a regular blog and have an active Twitter feed.

“The West is a big place and the blog and Twitter account help us stay in touch,” said Center writer Steve Elliott. “We highlight new RFAs and Center news, but also use them to spotlight state activities and publications, and share national news interesting to an IPM audience.”

In August, for instance, the blog included a story on insect movement during desert monsoons, information about a Northeast IPM Center program called “Stop Pests in Housing,” a Western IPM Center news story about our comment coordination service, an introduction to the Missoula County Extension newsletter, and an overview of the new EPA labels on neonicotinoids to protect bees.

Find the blog online at IPMwest.blogspot.com. Follow us on Twitter at twitter.com/IPMWest

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