



Protecting Beneficials in Hawai'i and the American Pacific

Day 1

- Welcome session
- Presentations
- Hands-on demonstrations
- Local honey tasting
- Panel discussion

Day 2

- Field trip to farms on Oahu

Aloha! The Western Integrated Pest Management Center welcomes you to "Protecting Beneficials in Hawai'i and the American Pacific: A Workshop on the Conservation of Pollinators and Other Beneficial Species."

This project is one of three new signature programs facilitated by the Western IPM Center. All three programs are based on stakeholder-established priorities in the Western Region. In Hawai'i and the Pacific Basin Territories, a need to educate growers about how to apply the relatively new concept of conservation of beneficial species, including pollinators, was identified and confirmed by growers themselves. Hawai'i has recently experienced the arrival and establishment, of destructive pests of honeybees (the varroa mite and the small hive beetle) and the coffee berry borer (CBB). These new challenges highlight the importance of taking action to maintain healthy pollinator populations and the need for research into alternative pest control methods.

The islands of Hawai'i and the Pacific Basin American territories have environments that are unique and uniquely vulnerable. They are isolated from other land masses, yet their dependence on tourism and imported food and other goods facilitates invasions by non-native species and makes inputs to crop production more expensive. The mild climate supports crop production and pest pressures, year-round. Local producers who supply fresh produce and specialty crops often farm small plots and have limited resources. While the larger growers of high value commodities, who typically have more resources, face potentially devastating competition from growers in regions with lower land and labor costs. For all of them, it is important to develop and learn about IPM strategies so they can prevent unacceptable levels of pest damage by the most economical means, while also posing the least possible risk to people, property, resources, and the environment.



Presenters



Scott Nikaido

Scott was born and raised on Oahu. He obtained a B.A. in Psychology (2002) and a B.A. in Zoology (2006) from the University of Hawaii at Manoa. Scott became an integral part of Dr. Couvillon's laboratory at the Bekey Laboratory of Neurobiology where he assisted researchers in a variety of learning experiments on honeybees, pigeons, and crayfish. Shortly after the arrival of the varroa mite, and while still at the Bekey lab, Scott began monitoring the colonies for mites and learning about organic management techniques to combat Varroa infestations. Presently Scott is working towards his MS degree under Dr. Villalobos in the Department of Plant and Environmental Protection Sciences (CTAHR). Scott is most interested in honeybee health, sustainable pest management, and outreach and education programs with farmers. In addition, Scott is the manager of the UH research apiary in Waimanalo.



Robert Hollingsworth

Dr. Robert G. Hollingsworth is a Research Entomologist with the USDA-Agricultural Research Service, based at the US Pacific Basin Agricultural Research Center in Hilo, Hawaii. His research focus is control of insect pests using combinations of pest management tactics, including the use of biological agents and botanical insecticides. In 2006, he carried out laboratory bioassays comparing different strains of *Beauveria bassiana* for control of thrips, beetles and other insects, with the goal of finding out whether the ban on imported strains of *Beauveria bassiana* was justified. This research facilitated approval of *Beauveria* products for control of coffee berry borer and other insect pests by the Hawaii Board of Agriculture in February 2011. Dr. Hollingsworth has also studied the use of essential oils as pesticides and repellents for insects. Working with Fran Calvert, he discovered that a common tree species in Hawaii called *Macaranga tanarius* is a rich source of predator insects (minute pirate bugs) which can be manipulated to control thrips infesting orchids and other horticultural crops in greenhouses.



Cheryl Lambert

Cheryl has been with the Natural Resources Conservation Service for 10 years working on the Central Coast of California, southern Arizona and now in Hawaii. She has held various positions including Project Coordinator of the Elkhorn Slough Watershed Project, Area Soil Conservationist and District Conservationist. She has over 30 years of agricultural and horticultural experience in the private and public sectors, including 16 years in quality control and research as a trial grower in the seed industry, 8 years owning her own landscape gardening business and working in agricultural research in vegetable and specialty crops and ornamentals, including four years as a Staff Research Associate with UC Davis in Salinas, CA. She holds a Masters of Business Administration (MBA) degree from National University and a Bachelors degree in Sustainable Agriculture from Oregon State University. Conservation of natural resources and sustainable agriculture are her main focus and she continues to provide technical and financial support for farmers, ranchers and landowners on Oahu from the NRCS Aiea Service Center.



Eric Mader

Assistant Pollinator Program Director Xerces Society. Eric works to raise awareness of native pollinator conservation techniques among growers and government agencies. His previous work includes commercial beekeeping and crop consulting for the native seed industry where he provided weekly insect and disease scouting on hundreds of plant species grown for prairie restoration efforts. He is an Assistant Extension Professor at the University of Minnesota's Department of Entomology, and has authored several books and government management plans for native pollinators. He most recently co-authored a new release *Managing Alternative Pollinators: A Handbook for Beekeepers, Growers and Conservationists*.



Helen Spafford

Dr. Helen Spafford is an Assistant Professor in the PEPS Department at University of Hawaii Manoa where, in addition to her teaching responsibilities, conducts research in pest management. Her principle research interests are in finding alternatives to synthetic pesticide application for pest management in cropping systems in order to conserve beneficial insects and enhance activity of biological control agents.



Ted Radovich

Ted Radovich is a Waimānalo boy. Ted earned his Bachelor and Master of Science degrees in Horticulture from the University of Hawai'i at Mānoa and his Ph.D. in Horticulture and Crop Science from The Ohio State University. He is as Assistant Specialist in the Department of Tropical Plant and Soil Sciences at the University of Hawai'i at Mānoa. Ted also serves as the Hawai'i State Coordinator of USDA's Western Region Sustainable Agriculture Research and Education (WARE) program. His areas of interest are ecology and yield and quality of food crops. Teaching responsibilities include Organic Food Crop Production, Vegetable Crop Production, Weed Science and Herbs, Spices and Flavorings. At the Sustainable and Organic Farming Systems Laboratory, Ted has led and cooperated on projects which involve research in the use of locally-produced nutritional supplementation to improved crop production. He also mentors undergraduate students in the Sustainable and Organic Farm Training (SOFT) project, a student-managed farm.



Ethel Villalobos

Ethel Villalobos was born and raised in Costa Rica. She received her PH.D. from UCLA, where she studied behavior and ecology of Hymenoptera, including solitary bees and wasps. Her previous work experience includes leading undergraduate and graduate courses in tropical biology under the auspices of Duke University and the Organization of Tropical Studies. In 2008, Ethel became the Co-PI for what is now the University of Hawaii Honeybee Project. Ethel's work for this project includes research on sustainable methods for Varroa mite and small hive beetle control. as well as working with growers to develop best management practices and reduce pesticide input.



Koon-Hui Wang

Koon-Hui Wang is an assistant professor for Sustainable Pest Management in the Department of Plant and Environmental Protection Sciences at the University of Hawaii at Manoa where she also received her M.S. and Ph. D. degree. Her research interest is in sustainable approaches for managing above and below ground beneficial organisms and pests. Her specialty is in managing plant-parasitic nematodes and soil health through manipulation of cover cropping systems. Currently she has several cover crop projects looking at the benefits of intercropping cover crop and cash crop to enhance soil nutrient recyclers, deter insect pests, while providing favorable habitat for pollinators.



Kawika Duvauchelle

Born and Raised on the island of Moloka'i. Graduated from University of Hawaii at Manoa with a Bachelors in Botany. Started work with the Hoolehua Plant Materials Center (PMC) in 2000.

Worked through the ranks and is currently the Natural Resource Specialist of the Hoolehua PMC and responsible for plant-selection and technology-development studies.

About

Western IPM Center

Located at the University of California, Davis, the Western IPM Center, one of four regional Integrated Pest Management Centers, has been firmly committed to facilitating the identification of stakeholders' pest management needs, concerns and priorities throughout the West, including the unique circumstances of Hawai'i and the Pacific Basin. They have responded to pest management needs by supporting IPM activities to address them.

University of Hawaii CTAHR

The founding college of the University of Hawai'i, CTAHR had its beginning in 1907 as the College of Agriculture and Mechanic Arts of the Territory of Hawai'i. CTAHR began with a budget of less than \$50,000 (about \$1 million in 2006 dollars), five provisional students, two preparatory class instructors, and 90 acres. A century later, CTAHR's growth is evidenced by a total budget of nearly \$48 million, the graduation of over 10,500 alumni, a personnel roster of over 500 faculty and staff and facilities which include 22 research stations, farms and centers, and nine extension offices. As Hawai'i's land grant college, CTAHR's many and varied programs are all designed to achieve the vision of CTAHR, which says that "College of Tropical Agriculture and Human Resources will actively help Hawai'i diversify its economy, ensure a sustainable environment, and strengthen its communities, and will be the premier resource for tropical agricultural systems and natural resource management in the Asia-Pacific region." To this end, CTAHR's scientists, students and graduates have helped start agricultural programs in Hawai'i and places such as Africa, Iraq, Okinawa, East Timor and throughout the U.S.-affiliated Pacific nations.

Hawaii Department of Agriculture, Plant Industry Division

The programs of the Hawai'i Department of Agriculture's Plant Industry Division are designed to protect Hawai'i's agricultural industries, natural resources, and the public from the entry and establishment of detrimental plants, animals, insects, weeds, and other pests; and to assure the safe and efficient use of pesticides in Hawai'i.

This division plays an important role in monitoring cargo and passengers at all ports of entry for the illegal importation of potentially harmful pests. They also help local farmers export horticultural materials through their plant nursery inspection program; help control and eradicate insects and diseases through biological, chemical or mechanical means; and provide seed analyses and certification services for nursery plants. The division certifies pesticide applicators, licenses pesticide products for sale and distribution in Hawaii, and monitors use of all pesticides and sales of restricted-use pesticides.

NRCS Pacific Islands Area

The Natural Resources Conservation Service of the United States Department of Agriculture partners with Conservation Districts and others to provide technical and some cost-share assistance to private landowners. The main goal of NRCS is to protect, enhance, and preserve our soil, water, air, plants, and animals using sound science and expertise. The Pacific Islands Area includes the State of Hawai'i; the territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia and the Republics of Palau and the Marshall Islands.



College of Tropical Agriculture
and Human Resources