

University of Arizona  
Arizona Pest Management Center Summit  
Meeting Proceedings  
Maricopa Agricultural Center  
June 6, 2006  
[cals.arizona.edu/apmc/Summit](http://cals.arizona.edu/apmc/Summit)

### **The Arizona Pest Management Center**

The mission of the University of Arizona's Arizona Pest Management Center (APMC) is to support College of Agriculture and Life Sciences (CALs) faculty in their efforts to develop and deliver outstanding Integrated Pest Management (IPM) programs that address the needs of Arizona's citizens. This includes IPM programs serving agriculture, urban communities and natural areas.

The APMC engages with faculty, partner organizations, clientele and other interested stakeholders to:

- Research, develop, and help implement innovative IPM systems in Arizona
- Solicit and document input on pest management needs in Arizona
- Secure external funding to support pest management research and outreach programs
- Evaluate & improve pest management programs, and assess their impact on end-users
- Improve communication among all IPM stakeholders, including UA faculty, state partners, clientele groups, the Western IPM Center and federal IPM program

All IPM programs at UA are part of the APMC. A steering committee, the IPM Coordinating Committee, guides the activities and resources of the APMC, and is made up of faculty and stakeholders with expertise in entomology, plant pathology and weed science. The APMC maintains five program foci: Detection & Diagnostics, Agricultural IPM, Community IPM, IPM Assessment, and Pesticide Education. Within each focus, program teams actively develop, manage, support and implement IPM programs. The IPM Program Manager, who also serves as Associate Director of the APMC, is dedicated to maintaining the APMC infrastructure and provides leadership and manages daily activities and communications. With the IPM Coordinator and co-Director of the APMC, the IPM Program Manager reports and responds to federal interests and inquires about our state's IPM programs.

Our IPM programs are staffed by an energetic but limited number of faculty and staff from multiple departments, agricultural centers and counties. The APMC helps keep our programs strategically focused, relevant, and well positioned to compete for IPM funding both regionally and nationally. *Our goal is to create a working environment in which the science and implementation of IPM can thrive in Arizona.*

## **Purpose of the Workshop**

### **Purpose**

The purpose of this workshop was to assemble University of Arizona faculty members involved in pest management related research and outreach, along with key stakeholders from urban, agricultural and natural resource sectors, in a forum to identify program needs and priorities, and to discuss the role of the Arizona Pest Management Center (APMC) and Extension in addressing these challenges.

### **Format**

The general format for this one-day workshop was a morning plenary session with broad presentations related to the APMC and integrated pest management and afternoon focus sessions during which participants identified IPM priorities in four areas:

- Agricultural and Cross-commodity IPM
- Community and School IPM
- Noxious and Invasive Weeds
- Urban Horticulture IPM

### **Desired Outcomes**

1. Identify pest management priorities to inform and help focus Extension efforts.
2. Synergize partnerships between UA Extension and sister agencies and stakeholder organizations.
3. Communicate the goals and structure of the APMC as a resource for faculty and partner organizations.
4. Increase awareness of funding resources for pest management and related programs.
5. Create dialog for stakeholder input into all our pest management programs.
6. Increase faculty expertise on stakeholder interaction and program evaluation.

## **Morning Plenary Session Summary**

The complete Powerpoint files for all plenary presentations are available online at [cals.arizona.edu/apmc/Summit.html](http://cals.arizona.edu/apmc/Summit.html). What follows are brief abstracts for each presentation.

### **The Arizona Pest Management Center**

**Dr. Al Fournier, IPM Program Manager & Assoc. Director APMC, University of Arizona**

The Arizona Pest Management Center is the result of a strategic reorganization of IPM resources at the UA to enhance pest management research and education. This virtual center brings faculty

and diverse stakeholders together to identify pest management needs, secure resources, and implement effective IPM activities in urban, natural, and agricultural sectors. This organizational structure helps us prioritize, partner, and secure competitive resources by taking advantage of current trends in federal grant programs. Prioritization of IPM activities is a critical function that allows us to make the best use of limited resources. To be successful, we need to connect with clientele and partner to develop and deliver outstanding research and education programs attuned to their needs. This approach leverages our limited resources and also attracts external funding to help us achieve more with less.

### **IPM: What Does the “I” Stand for?**

**Dr. Peter Ellsworth, IPM Specialist / State IPM Coordinator & Co-Director APMC, Dept. of Entomology, University of Arizona**

While IPM is accepted worldwide as the best way to protect crops, there are many definitions of IPM and ambiguous interpretations. The key to IPM is that it represents an *integrated* approach to pest management, using many types of control strategies in a synergistic way. There are many levels and scales of IPM implementation (Kogan 1998, 2001). The highest level of IPM, what we should strive for, deals with multiple pests and control methods within the context of a whole cropping system or ecosystem. The federal IPM Roadmap identifies strategic directions for IPM research, implementation, and measurement for all pests in all settings, and focuses on reducing risk from pests and pest management strategies. Federally funded IPM programs must be evaluated to determine if they are meeting these goals. IPM activities at UA are connected to the federal IPM program through the Western IPM Center and the Arizona Pest Management Center.

### **What’s Most Important in IPM?**

**Rick Melnicoe, Director, The Western IPM Center**

What’s most important in IPM depends on a person’s perspective. IPM is broader than insect pest management and includes pest interactions in daily life in agriculture, natural and urban areas. Because public funds for IPM are limited, priorities must be established. The Western IPM Center (WIPMC) is one of four regional IPM Centers in the U.S. One role of the WIPMC is to work with stakeholders to identify and document priorities. These priorities become integrated into calls for proposals for federal IPM grant programs that the WIPMC oversees and/or administers. Funds are available to develop Pest Management Strategic Plans (PMSPs). These are commodity- or issue-based documents developed by stakeholders that prioritize research and education needs. Through PMSPs and similar processes, the WIPMC solicits public input into regional IPM funding priorities.

### **Diagnostics & Identification: A Key to Pest Management**

**Carl Olson, Assoc. Curator, Dept of Entomology, University of Arizona**

The University of Arizona has personnel and resources dedicated to diagnostics of insect pests, plant diseases and weeds. (Links to diagnostic contacts are available through Olson’s presentation.) The Arizona Plant Diagnostics Network (AZ-PDN) has recently been established as part of a regional (Western Plant Diagnostics Network) and national (National Plant

Diagnostics Network) response to new threats and emerging pest problems. Accurate identification is the first step in any IPM process. Misidentification can lead to improper and ineffective pesticide applications and ongoing pest problems. Because IPM is ecologically based, the emphasis should be on integrated *population* management to achieve long-term solutions. Education is critical to any IPM program. Media exaggeration often plays on people's fears of insects or pest problems, and may encourage an emotional response rather than sound science .

**The Greening of the Marketplace: Increasing Demand for IPM & BMP**  
**Dr. Tom Green, President, The IPM Institute of North America**

The IPM Institute of North America is an independent non-profit organization that fosters recognition and rewards in the marketplace for goods and service providers who practice Integrated Pest Management, or IPM. The Government Accounting Office has criticized federally funded IPM efforts as poorly coordinated, with little emphasis on measuring outcomes. Various studies have indicated the presence of pesticides and other synthetic chemicals in streams, drinking water, household dust, and the human body. There are uncertainties about long-term health impacts of these pesticides and exposure to untested combinations of pesticides and other chemicals. Still, there are many success stories and evidence of improvement by public agencies, industry and consumers. The federal IPM Roadmap now sets broad, measurable health, economic and environmental goals for IPM. The majority of new pesticide registrations qualify as “reduced-risk” or biopesticides, according to U.S. EPA. Wholesale buyer demand for IPM, and eco-labeling have become strong trends, marketing products to the public that meet a set of environmental standards. Certified organic is the oldest and largest of the eco-labels. These programs promote a sustainable approach to pest management, reward good management practices and reduce liability. The IPM Institute assists companies and non-profit organizations to develop, operate and succeed with market-based incentives for IPM and other practices. The Institute also runs the IPM Star Program, evaluating and certifying school and childcare IPM programs. The Mesa Public School District received an IPM Star Award at today's meeting.

## **Focus Sessions: Integrated Pest Management Priority Setting**

### **Introduction**

APMC Summit participants engaged in afternoon “Focus Sessions” to identify IPM priorities in four different areas:

- Agricultural and Cross-commodity IPM
- Community and School (urban/structural) IPM
- Noxious and Invasive Weeds
- Urban Horticulture IPM

Participants in each session were led by a facilitator, who coordinated a 3-step activity: (1) individual brainstorming; (2) small group discussions; (3) listing and voting on priorities as a group. (Full instructions for the priority setting activity are included in Appendix C.) Participants were instructed to use the National IPM Program goals (as described in the IPM Roadmap) and a short list of other considerations as the criteria for ranking identified needs (Appendix D).

Participants were asked to vote for their top three priorities, casting three votes for their #1 choice, 2 votes for #2, and a single vote for #3. Votes were then tallied and priorities ranked accordingly. In addition to identifying needs and ranking priorities, each focus group was encouraged to develop “creative solutions,” or ways of addressing the priorities effectively.

## **Organization of Priorities**

In each of the following sections, the finalized list of priorities is presented, followed by a discussion of “creative solutions” to address these needs and a discussion of the discourse that took place.

### **Agricultural and Cross-commodity IPM**

The Agricultural & cross-commodity focus session participants broke into smaller groups based on their commodity interests:

- Alfalfa (4 participants)
- Citrus (6 participants)
- Cotton (8 participants)
- Vegetables and melons (12 participants)

#### Major Priorities (no. of votes)

1. Multi-pest IPM Research & Education [Level II & III IPM, sensu Kogan (1999)] (24)
2. Veggie/Melon: better herbicides & insecticides for thrips & aphids (24)
3. Prevention and management of herbicide resistant weeds (13)
4. Educational needs - intercrop pest interactions, resistance, and labor (13)
5. Prevent, detect, and mitigate exotic pest introductions (7)
6. Improved lygus control in multiple crops and their interactions (7)

#### Creative Solutions

- Enhance public (e.g., federal) funding
- Explore tax credits
- Develop industry support for grants
- Provide more IPM training for field workers
- Facilitate and participate in the Pest Management Strategic Plan (PMSP) process (w/ additional funding & human resources)
- Develop and implement urban / youth education (about pest management / agriculture)
- Genetic improvement of crops (breeding and engineering for pest resistance)
- Get the attention of University of Arizona and College of Agriculture and Life Sciences administration
- Streamline interagency funding and create incentives for these partnerships
- Facilitate and reward interdisciplinary IPM research and education

- Fund multi-tactical projects
- Expand involvement in exotic pest survey work including industry and university

### **Community and School (urban/structural) IPM**

#### Major Priorities (no. of votes)

1. Education (70)
  - a. General public awareness
  - b. Commercial professionals
  - c. School and community administrators
2. Develop industry standard for IPM (35)
3. Leverage funds for change agents to initiate implementation projects in communities (25)

#### Creative Solutions (by priority)

1. Education Solutions
  - a. Focus on educating school staff to adopt and implement IPM
  - b. Educate the general public to increase awareness and understanding of IPM
  - c. Use innovative methods to educate (e.g., “reality” TV show about IPM)
  - d. Educate people to recognize IPM as a health benefit
  - e. Access key school district administrators and educate them about IPM
  - f. Work to get increased buy-in for IPM by initiating pilot implementation projects
  - g. Incorporate the study of invertebrates into school curriculum
2. Develop industry standard for IPM in structural environments
  - a. Encourage movement toward “standardized IPM services”
  - b. Develop systems of accountability
  - c. Provide recognition for good IPM practitioners
  - d. Promote RFP approach (vs. bid process) for purchasing agents to promote adoption of quality IPM services
3. Leverage funds
  - a. Engage stakeholders to identify needs and support efforts
  - b. Compete for national level funds, e.g., USDA grants
  - c. Explore creative funding sources
  - d. Promote legislation for funding for IPM

#### Discussion

Participants in this focus session included pest management professionals, school district operations personnel, city employees, tribal representatives, state and federal agency representatives, university and cooperative extension professionals. They developed priorities focused on pest management needs in commercial structural environments, such as schools and municipalities, rather than homeowner issues and concerns. The needs identified by participants fell into three main areas: education, industry standards, and leveraging funds.

Education was clearly identified as the number one priority. IPM education for the public at large is needed to continue to generate an interest and growing demand for IPM services; education of school and urban facility staff on their role within their IPM program; education in the form of garnering buy-in from key facility staff to ensure that their IPM program is prioritized commensurate with the resources invested by internal staff and external partners (extension, state agency, federal, etc.). Innovative education tools were discussed for both consumers and school staff (e.g., IPM Reality Show) and students (e.g., by incorporating invertebrate studies into the school curriculum).

The second identified priority was the need for industry-wide IPM standards in schools, facilities and buildings. Tools, such as inspection checklists and other forms of record keeping need to be developed or refined to address a consistent standard. Protocols have been developed to facilitate the consumer assessing the wide variety of services available. However, they are now widely available. Commercial companies claiming to provide IPM services should be held accountable to certain established standards. Promoting contractual Requests for Proposals is recognized as a helpful alternative to the “lowest-bid” option when entities are trying to partner with a company providing IPM services.

Leveraging funds to accomplish IPM goals was the third priority agreed on by this group. There is room for improvement in using stakeholder involvement to leverage IPM program funds.

Competing for more national level funds and exploring innovative funding sources (such as the green cleaning industry) as partners in the “environmental health” effort would increase funding options. Legislating leveraged IPM funds was another pathway the group discussed.

## **Noxious and Invasive Weeds**

### Major Priorities (no. of votes)

1. Secure funding for all phases (pest plant detection, management, restoration, etc.) (17)
2. Develop a statewide mapping and distribution database (16)
3. Complete and submit the “State of Arizona Strategic Plan” for statewide management of pest plants (14)
4. Conduct research on pest plant biology, ecology, identification and treatment statewide (12)
5. Increase public awareness of, and provide education about, pest plants (8)
6. Develop statewide early detection, rapid response process (7)
7. Improve communication and coordination among state, local and federal groups to facilitate partnerships (private, NGOs, agencies, etc.) (6)

### Creative Solutions (by priority)

1. Secure funding for all phases (pest plant detection, management, restoration, etc.)
  - a. Seek tax-based funding

- b. State lottery funds
  - c. Complete the Arizona Invasive Plants Strategic Plan for statewide management of pest plants. This document will position state and local government agencies, universities, non-profit organizations and private land owners in Arizona as eligible entities for obtaining funds from federal weed abatement programs which require applicants to be participants in coordinated, state-wide, multi-partnered, strategic pest plant management plan activities.
  - d. Develop a Pest Management Strategic Plan (PMSP) for noxious and invasive weeds; apply for funds from the Western IPM Center to support this activity. Once a PMSP exists, this can be cited in research proposals as documented stakeholder input and will improve our chances of obtaining federal grants.
2. Develop a Statewide mapping and distribution database. What's needed to achieve this (requires funding):
    - a. Personnel
    - b. GPS units
    - c. Centralized database manager (e.g., SWEMP)
  3. Complete and submit the "State of Arizona Strategic Plan" for statewide management of pest plants
    - a. This document is already in progress. It needs to be completed and submitted.
    - b. Lobby for governor approval
  4. Conduct research on pest plant biology, ecology, identification and treatment statewide
    - a. Funding is needed! Especially funds that will support multi-year research projects, graduate student funding, etc., to develop good information.
    - b. The APMC can be a source for limited research funds (pilot projects, preliminary data to support larger grant proposals, etc.)
    - c. Explore and pursue competitive funding opportunities
  5. Increase public awareness of, and provide education about, pest plants
    - a. There is a role for Extension in public education/outreach on these issues (bulletins, fact sheets, websites, etc.)
    - b. Develop public service announcements
    - c. Reach urban populations
    - d. Master gardeners as "first detectors," as public educators about weed issues
    - e. Home owner's associations
    - f. Nurseries
    - g. Parks Departments
    - h. Schools
  6. Develop statewide early detection, rapid response process
    - a. Larry Howery has begun to coordinate this effort through the Noxious & Invasive Weeds Working Group
    - b. Explore organization role for the APMC
  7. Improve communication and coordination among state, local and federal groups to establish partnerships (private, NGOs, agencies, etc.).
    - a. Explore organization role for the APMC



## Discussion

Funding was described as the most urgent need to address all phases of noxious and invasive weed research, management, implementation and education. Several ideas for increasing funding were generated, including completion of a State of Arizona Strategic Plan for statewide management of pest plants, development of an official Pest Management Strategic Plan (PMSP) with support of the Western IPM Center, and submission of an IPM proposal to the Arizona Pest Management Center to support research to generate preliminary data as a foundation for larger funding requests. Other funding ideas included state-based tax funding and state lottery funds.

Some identified needs relate to statewide coordination of weed detection and management efforts. Mapping of weed distribution and development of process for early detection and rapid response to weed issues were also listed as priority needs. Both the mapping effort and the detection/response network would involve the development of (separate) database systems. The need to improve communication and coordination among all groups (private, NGOs, state, federal and local agencies, Extension, tribes, weed management areas, etc.) and to establish better partnerships for achieving statewide management goals was discussed.

Fairly basic research on weed biology, ecology, identification and treatment are needed, as well as research related to restoration. Funding for personnel and equipment are needed to support this research. A comment was made that any real progress in weed research is dependent on fairly long-term funding to support graduate student projects and the like; one to two year grant funding makes it difficult to obtain rigorous data needed to develop biological and ecological understanding of the issues involved.

Finally, public education and awareness of noxious and invasive weed issues is important. Although our discussion of specific benefits of, and approaches to addressing, public education was limited, suggestions included the development of public service announcements to reach urban populations, Extension education/outreach programs, master gardeners, home owner associations, nurseries, parks departments and schools.

## **Urban Horticulture IPM**

### Major Priorities (ranking\*)

\*The number of votes for each item was not retained by focus session participants.

#### Education/implementation priorities

1. Create tools for public education (#1)
  - a. IPM recognition/certification program for golf courses and nurseries (#4)
  - b. Golf course superintendent IPM education (#5)
  - c. Educate cities on use of IPM (#8)
  - d. Develop standard for “Earth-friendly” (#9)

#### Research Priorities

1. Targeted research on various high-priority pests (#2)
  - a. Witches broom on Palo Verde
  - b. Pine blight
  - c. Mesquite decline
  - d. Glassy-winged sharpshooter
  - e. Ground squirrel
  - f. Whitefly
  - g. Chitalpa leaf blight
  - h. Pearl scale
  - i. Spider mites
  - j. Termites
  - k. Nematodes
  - l. Psyllids
  - m. Poa
2. Determine IPM thresholds for various high-priority pests (#3)
3. Pesticide review of turf and ornamental product availability (#6)
4. Research non-target effects of pesticides (#7)

### Creative Solutions

Because time ran short, the group did not generate specific “creative solutions” for each priority. However, it was noted throughout the discussion that funding for research and education continues to be a critical need.

### Discussion

This focus session included a diverse group including Extension personnel, master gardeners, and representatives from the Arizona Nursery Association and the turf and golf industry. It was a very lively group that generated several good ideas. The separate group discussions garnered approximately 45 different ideas. The entire group decided to include all 45 ideas in their presentation. Of the 45 ideas there were:

- 20 ideas that addressed different means of educating the public
- 15 that addressed different disease research ideas
- Several that addressed the Earth-Friendly standards

There was a natural dichotomy in the needs (to some extent reflecting the dichotomy of the group), which broke down into the two major areas of education needs and research needs.

## **Final Plenary Session: Presentation of Priorities**

Following the conclusion of the breakout Focus Sessions, the full group was reassembled for a tag-team presentation of the final priorities as they were developed in each of the breakouts. A representative from each group presented one to three slides, presenting priorities from their group. A PDF file of the final presentation is available at [cals.arizona.edu/apmc/Summit.html](http://cals.arizona.edu/apmc/Summit.html).

## **Program Evaluation**

A complete summary of program evaluation data is available at [cals.arizona.edu/apmc/Summit.html](http://cals.arizona.edu/apmc/Summit.html).

## **More Information**

For more information about this event, please contact:

Dr. Al Fournier  
Assoc. Director, APMC  
IPM Program Manager  
Arizona Pest Management Center  
University of Arizona  
Maricopa Agricultural Center  
520-381-2240  
[fournier@cals.arizona.edu](mailto:fournier@cals.arizona.edu)

Dr. Peter Ellsworth  
Director, APMC  
IPM Coordinator  
Arizona Pest Management Center  
University of Arizona  
Maricopa Agricultural Center  
520-381-2225  
[peterell@cals.arizona.edu](mailto:peterell@cals.arizona.edu)