

Cross-commodity Research & Extension Program Working Group 2008-2009

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Situation and Environment:

Effective communication across commodities (and disciplines) is increasingly essential to the development of effective and relevant research and Extension programs in Arizona. Pest management issues, soil and water management, economics, seed production, and labor issues (among others) demand attention across multiple agricultural crops and systems. The Cross-commodity Research & Outreach Program (CROP) working group was initially formed in 2000 to address the need for timely communication of scientific information that spans across both crops and disciplines, and has been very positively received by agricultural clientele. The group's major goal is to anticipate and proactively resolve problems unique to cross-commodity interactions. The existence of this group has helped to break down traditional boundaries between disciplines and commodities and has increased the dialog between stakeholders and Extension personnel. This proposal seeks funding to facilitate ongoing communication activities of this important group, including CROP advisory meetings, which provide critical stakeholder input to help identify, prioritize, and address important interdisciplinary issues in Arizona agriculture. This will help to ensure that Cooperative Extension can remain responsive to the ever-changing needs and priorities of Arizona's crop-producing clientele.

Inputs:

- Time and energy of working group members.
- Time invested in ACIS website.
- Funding requested (\$1,500). \$750.00 received for the 2008/2009 year.

Outputs:

Activities:

- Stakeholder discussion meetings and internal workgroup planning meetings
- Extension meetings will be impacted by cross-commodity issues and priorities.
- Frequent communications via email, conference calls, etc.
- Posting of critical crop/pest management information on ACIS website.
- Past CROP Working Group activities have resulted in several important products, including the development and dissemination of cross-commodity pesticide use guidelines, the establishment of the extensively-used Arizona Crop Information Site (ACIS), and the formation of the Arizona Pest Management Center (APMC).

Education: We anticipate the educational outcome of this working group will be Extension meetings related to cross-commodity issues. Additional educational products produced will depend upon grower's needs as identified through ongoing dialog facilitated by this group.

Participation: U of A team members listed above will engage stakeholders representing all agricultural counties in discussion of cross-commodity issues. Clientele served by this working group include producers (all crops), commodity groups and organizations, PCAs, county Extension personnel, and allied agricultural industries.

Outcomes - Impacts:

Short-term: The activities of this working group are expected to increase awareness and knowledge of important cross-commodity issues among stakeholders; to facilitate ongoing input from stakeholders on ever-change issues and needs across crops; and to enhance interdisciplinary communication among research and Extension personnel system-wide, including enhanced county agent interactions.

Medium-term: Working group efforts are expected to improve pest management practices and address other needs and issues that span crops and disciplines; this should lead to improved yields and increased client satisfaction. Enhanced interaction among interdisciplinary Extension personnel across campus, research centers and counties is expected to lead to additional projects and interactions.

Long-term: Improved production will enhance the economic well-being of clients and contribute to the state's economy and environmental welfare. Increased client satisfaction will improve relations between Extension, the university, and the citizens of Arizona, and help raise the status of Cooperative Extension programs. Improved environmental stewardship is another anticipated outcome.

Budget for 2008/2009: \$750.00

Working Group Outcomes from 2008/2009:

- Using five year of pesticide use reporting data combined with GIS maps of agricultural crops, we conducted an analysis of grower behaviors to measure adoption of the guidelines. Preliminary analysis shows significant, though less than complete, adoption of the guidelines, suggesting some impact of intensive extension education efforts in 2003-2005 (see <http://ag.arizona.edu/crops/presentations/SpatialX-commodityFlo.pdf>).
- 2008 Desert Agriculture Conference, May 8, Casa Grande. John Palumbo and Peter Ellsworth lead a discussion on the topic of insecticide resistance and the potential need to revise cross-commodity whitefly management guidelines. This stakeholder session including Pest Control Advisors, ag chemical industry representatives and Cooperative Extension personnel, and included an impromptu pole of stakeholder practices and perceptions on the issue. A follow-up session was held with PCAs and industry representatives in Yuma on June 18, 2008. About 10 people participated in this session.
- In summer 2008, Al Fournier conducted in-depth interviews with 12 PCAs from across Arizona. The interviews focused on cross-commodity whitefly management guidelines and PCA perceptions, management practices, and recommendations for revising the guidelines. Preliminary data analysis of interview data indicated that 83% of PCAs were aware of the guidelines and that 67% consider the guidelines in their decision-making processes. Factors positively affecting adoption of the guidelines included participation in the development of the guidelines, an increase in available product choices across crops, and low whitefly pressure in

recent years. Factors that had a negative impact on guidelines adoption included the influence of growers on product choice, price, availability of generic neonicotinoids, and various situational factors. PCA responses challenged some of the assumptions of the guidelines, particularly about PCA ability to perceive and consider the mixture of crops within a 2-mile radius of an application (which is how a crop community is defined in the guidelines) and their knowledge of applications made by neighboring growers. Most PCAs interviewed said there was a need to update the guidelines to include new chemistries and control options.

- Based in part on these interviews and interactive stakeholder sessions, we have identified a need and set a goal to update and advance the cross-commodity management guidelines to incorporate new chemistries for whitefly control, including the diamides. This exciting class of chemistry includes several compounds with a novel mode of action that sets them apart from other available synthetic insecticides. In 2009 a USDA Pest Management Alternatives Program (PMAP) proposal by Li, Ellsworth, Palumbo & Fournier was funded (\$199,200) to further develop and understand the role of these chemistries. An expected outcome of that 2-year project is the revision of the cross-commodity whitefly management guidelines. Further research and stakeholder discussions will help us identify the best way to integrate these new tools into our cross-commodity IPM and resistance management plans.

Publications and Presentations

Ellsworth, P. Lygus Management: A Western Perspective. Presented by invitation at the Open Forum - Management of the Sucking Bug Complex across the Cotton Belt, 2008 Beltwide Cotton Conferences, Nashville, Tennessee. January 9, 2008. URL: http://ag.arizona.edu/crops/presentations/08Nashville_Western_Lygus_vFlo.pdf

Ellsworth, P.C. & S.E. Naranjo. 50 years of the Integrated Control Concept: Moving the Concept and Implementation forward in Arizona. North Carolina State University Department of Entomology seminar, Raleigh, NC. April 13, 2009. URL: http://ag.arizona.edu/crops/presentations/09IPM_NCSU_50-yrsvF16lo.pdf

Ellsworth, P.C. & S.E. Naranjo. IPM in Arizona Cotton: Successful adoption of selective controls for multiple key insect pests. Presented at 6th International IPM Symposium, Portland, OR. March 26, 2009. URL: <http://ag.arizona.edu/crops/presentations/09IPMPortlandBiorationalvF7lo.pdf>

Ellsworth, P., J. Palumbo, A. Fournier & Y. Carriere. Cross-commodity Insecticide usage: Spatial Analysis of Management Practices, Control & Risks. Presented at WERA-069 Western IPM Coordinators Meeting, Chino Hot Springs, Alaska. May 20, 2008. URL: <http://ag.arizona.edu/crops/presentations/SpatialX-commodityFlo.pdf>

Equipment:

A fifty seat audience response system was purchased in combination with the Cotton ICM working group. This system will be used to collect data and information from stakeholders at commodity meetings across the state. The system will provide the team with immediate feedback on the needs of stakeholders across the state. They system will be used for the first time at a Vegetable Meeting on July 16, 2009 at the Maricopa County Cooperative Extension office.



CROSS-COMMODITY RESEARCH & EXTENSION PROGRAM (CROP) WORKING GROUP 2008-2009

SITUATION	INPUTS	OUTPUTS		OUTCOMES – IMPACT		
		Activities	Participation	Short	Medium	Long Term
<p><i>What is the problem or need?</i></p> <p>An ongoing need for communication to identify, prioritize and address issues related to pests, soil and water management, and economics, that often span across commodities and disciplines. The CROP working group has been formed to serve this need, and actively facilitates dialog on critical issues among researchers, Extension personnel and stakeholders at all levels across all crops statewide.</p>	<p><i>What we invest</i></p> <p>Time and energy of specialists and agents to support communication efforts and identify stakeholder priorities related to cross-commodity issues.</p> <p>Dollars for travel and meeting logistics.</p>	<p><i>What we do</i></p> <p>CROP Advisory Group meeting; Stakeholder discussion meetings; Working Group planning meetings; Extension meetings; frequent email and telephone communications.</p> <p>Products include cross-commodity pesticide guidelines (continually re-assessed) and additional partnerships, educational products posted to ACIS website and projects (e.g. CIL Working Groups), based on identified needs.</p>	<p><i>Who we reach</i></p> <p>CROP Working Group participants; stakeholders representing several Arizona counties: crop producers, PCAs, commodity groups and organizations, allied industries, and county Extension personnel.</p>	<p><i>What the short term results are</i></p> <p>Increased awareness and knowledge of important cross-commodity issues among stakeholders.</p> <p>Valuable input from stakeholders on key issues and needs that span across crops.</p> <p>Enhanced interdisciplinary communication among Extension personnel system-wide, including enhanced agent interactions.</p>	<p><i>What the medium term results are</i></p> <p>Working group efforts are expected to improve pest management and address other needs and issues that span crops and disciplines.</p> <p>Improved yields and increased client satisfaction.</p> <p>Enhancement of interaction among interdisciplinary Extension personnel across campus, research centers and counties lead to additional projects and interactions.</p>	<p><i>What the ultimate impact(s) is</i></p> <p>Improved production will enhance the economic well-being of clients and contribute to the state's economy.</p> <p>Increased client satisfaction will improve relations between Extension, the university, and the citizens of Arizona, and help raise the status of Extension programs.</p> <p>Improved environmental stewardship.</p> <p>Ongoing dialog will facilitate proactive problem prevention across crops.</p>