IPM Assessment Leadership Team
Maricopa Agricultural Center
July 2, 2013

In attendance: *Al Fournier, Peter Ellsworth, Dawn Gouge, John Palumbo, George Frisvold, Jack Peterson and Wayne Dixon*

I. Team Member Updates: Role and Interest in IPM Assessment

Peter (chair, Agronomic Crops IPM Leadership Team): Many assessment needs related to field crops involve the APMC Pesticide Use Database. Peter is also involved in the Crop Pest Losses project; those surveys (for cotton, melons and lettuce) ask PCAs about pesticide and pest management practices, yield losses and economics. We infer whether anything that we have done has contributed to changes in practice that we document. We are increasingly using clicker technology to assess stakeholder needs and practices. Peter is interested in using clickers in the field at outdoor meetings to get the same kind of feedback. Some of the questions could be done ad-hoc. It need not be on your PPT, as long as you keep track of the questions. Al will have to look into how this could be done on the fly without a pre-developed question list. Example is Bill teaching glyphosate resistance over the winter and needing data to document changes in behavior that may have resulted from those trainings. There is a need for Turning Point training among faculty to encourage effective use of the clickers.

Dawn (chair, Community IPM Leadership Team): Beyond termiticide pre-treat information which was recently acquired, we do not have data for community IPM pesticide applications. There is plan for limited reporting of active ingredients that have been detected in sampling (DEQ table 5). The golf course industry will soon start to be regulated under the Dept. of Ag, and will require the same kind of reporting as agricultural users (L-1080 form). Self-applied grower applications are generally not reported, but some growers choose to report. If Dawn or others went to a school and informed them that it is an option to report, would they do so? She could make the case to schools that they should ask their PCOs or in-house personnel to report their usage. Jack Peterson: If reported, we would enter the data. They could literally fill out a 1080, but it would be better to have a simpler custom form. Some tribes used to report 1080 data to ADA (most do report it internally). Gila River and Ak Chin supply records, CRIT used to (do they still?), Salt River never did. If schools were entering data into 1080, it would be important to use the word "school" or better yet, enter "school" in the crop field. Q: Are turf & ornamental product numbers in the ADA database? Yes.

Other than pesticides, what else could we measure? Possible examples include: student absenteeism, school nurse data (cannot obtain this because of privacy issues), pest levels reported. Could school nurses mine the data on our behalf, remove identifiers and provide a summary report? It is worth looking into. There is an online reporting tool about asthma that is available for use by school nurses, but it is not used by many. There is an EPA RFA out related to measuring large amounts of data from many school sites connecting school environmental factors with health impacts, including air quality and pesticide residue data. If the Community IPM Team gets involved in this, could the pesticide detection lab in Yuma handle our samples (for a fee)? We would need yes/no detection data based on swabs, or vacuum samples. John: We

are not set up for this now. For each pesticide, they need to develop HPLC information to establish the peaks. It would take significant funding to make this happen. Barry Tickes is running the program. There are liability issues involved. They set up contracts that help pay for a person to run samples. Contact is Doug Marsh. What is their capacity? Swab, soil, clothes, plants, to check for pesticide residues. They can do quantitative analysis. It can be funded by pre-paying sample processing. Sounds promising. Dawn will look into it.

Dawn suggested we might develop an APMC "QR code" that could be scanned to report number of attendees at a training. It would require some kind of app. Wayne showed the group the capacity of the Outputs database for recording and recalling such data on training, publications, grants and other outputs. The database is on a secure server at MAC and cannot be accessed off site. We discussed making it the responsibility of the AiEs for each of the Teams to make sure that the information gets entered.

John (chair, Vegetable IPM Leadership Team): John was involved in an EIPM Invasive Species Special Project proposal out of Florida that was related to bagrada bug. John is involved in Crop Pest Losses for lettuce and melons, the past nine years. He will be exploring trends in the lettuce data for a talk at ESA this fall. He cannot speak for Mike and Barry with respect to their data on diseases and weeds, respectively. John also mines the pesticide use data, which has been very beneficial. It has been used to write reports posted online, a bagrada one has been cited in 3 journals recently. Al: There is a need for us know about how any data we generate from the pesticide use database are being used, outputs produced, etc. We call it the Arizona Pest Management Center Pesticide Use Database. (Given enough time, John explains this to people.) Let's not call it "1080 data" because people think of that as regulatory. We should put a suggested citation on the web for people to reference.

George (Agricultural and Resource Economics Department): How hard would it be to assemble cotton data by target pest, compound, and county? Target pest field is not as reliable as we would like because of CDMS: if a pest is not on the label, an incorrect pest may be indicated on the submitted form. George is interested in Bt cotton and how insecticide use has changed over time following its introduction. This is motivated by a rate of return study on PBW eradication. This is a discrete enough thing that it could be done as an economic analysis. We could aggregate at the section level using Arizona Cotton Research and Protection Council data that we have access to. George needs to follow up with Peter on costs related to bt cotton. George has been working in weed resistant management projects at the national level – but has no data for AZ. Last year we added a portion of the Cotton Pest Losses survey dedicated to glyphosate resistant Palmer amaranth. In the near future, Wayne, Lydia and Peter will be meeting to discuss analysis of these weed data from the CPL survey – George would like to join them.

II. APMC Pesticide Use Database and other Updates

Wayne provided an update on the pesticide use database, grant projects and other activities over the past year. Information was shared in a Powerpoint presentation and several handouts [we will provide links to these on our website]. Some principle points included below.

- Wayne, in cooperation with ADA, has been able to integrate PDFs of single L-1080 forms right into the APMC Pesticide Use Database, which has facilitated error checking and correction.
- A large investment of time this past year evaluating and correcting errors associated with lettuce records (because of PRiME project describe below).
- Through Dawn's contacts, we secured a large dataset of residential termite pesticide applications, which Wayne has placed into a database.
- Wayne created a program and database for Mexican pesticide use data to support evaluation in Peter's EPA Border IPM grant.
- Wayne demonstrated the Outputs and Outcomes database where we store, track and retrieve information on faculty and team outputs such as meetings, presentations, publications, etc.
- **PRiME project.** Through an Arizona Specialty Crops Block Grant, in collaboration with Paul Jepson and Michael Guzy from Oregon State University, we have done a first-of-its-kind eco-toxicological risk analysis of 21 years worth of lettuce pesticide use data. Results show declines across multiple risk indices, which are based on actual registrant data from EPA econtox database. (Handouts include mapped and charted results of data analysis.)
- Wayne also created an Image Share database for storing and retrieving images. If there is interest, this could be pushed to CALS server and shared across APMC participants.
- Working closely with Peter, Wayne developed a program to deploy the Cotton Pest Losses survey as a local application. A work in progress. There are refinements needed. It will simplify post-processing of data.

Image share program. Peter: there are a lot of online digital databases, such as Flikr. Why not use one of those? Wayne: in Terms and Conditions, you may forfeit the rights to the images. If it stays internal, we can limit it to our own needs. Need to look into commercial options to.

Citations database: get logons for Lucy, Shaku and Lydia to start to field-test it.

Skill sets: we would like to benefit from Wayne's programming skills to develop apps, etc.

Questions: John - pesticide use database: can we differentiate between soil and foliar applications? There is a soil application check box on the 1080, but it seems that soil applications for dinotefuron for example, are being under-reported. It is not getting done 100%. Is drip a soil application and / or a chemigation? Chemigation can be indicated by the equipment number if it is assigned an equipment tag number, which Jack says they are not all tagged currently. Jack is working on this as a regulatory issue. Grower applied: no equipment tag required.

Impact statements. (Make sure we put dates on it.) It has been difficult to connect individual impact statements into tweet style items that are connected to social media. Peter still thinks we need think in these terms. It does not good to only communicate our impacts to each other. Peter suggested to John: work with Susan McGuinley on a Veg IPM impact statement to release through the college. George: Institute of the Environment does a good job getting information out. He will provide a contact person for this. Goal for this group: a Veg Impact statement this

winter. John not too keen on it. He does not want to put it in the context that UA extension is responsible for these changes. And he need not.

Signature program commits us to expanding the Crop Pest Losses surveys to other states and commodities within the Western Region. Leading candidate is potato industry in ID WA, OR. Goal is to spread to a new state

Example with Marco – Al needs to know about any changes in funding.

Leverage calculator. Sponsored projects has a grants database. Peter can provide a contact person. Update and finalize.

Logic Model. Get input from the other IPM Teams. Need some measure of how well people are aware of impacts of IPM in the state. Can people identify the benefits of IPM? In the public: agricultural public, school IPM public, general public. Ask for input.

Jack will talk to Hugo, programmer for OPM. Building a database for the PMPs to report to.

Next meeting: Hopefully more frequent, could include some in service component in the meeting. E.g., get some training from George on economic analysis.

Informal meetings of Assistants in Extension.

General announcement: Christopher Bibbs – new grad student working on Extension Assistantship in Wendy Moore's lab providing diagnostic services. We should prepare an email indicating his contact information and send to leadership teams and a few select others (Stacey). Who is in charge of Master Gardeners in the state? Al will contact Rick Gibson to find out. Goal is beyond insect ID, to develop relevant diagnostic resources to help the teams. Ta-I, John's post-doc should connect with Christopher.

Pesticide Use advisory database – we need to organize a meeting of the Yuma group and the central AZ group. Resistance management will be a big topic on the agenda. Maybe the week of Aug 5 (Thur or Friday) or 12. Send a Doodle where responses are blind.

Doodle for the next meeting. Dec / Jan check with PCE.