

What Makes a Master Field Research Director?

— by Western Region Assistant RFC, Stephen Flanagan

Wanted: Master Field Research Director, Mechanically inclined, Tech-savvy, Number crunching-Farmer with communication chops.

How does that sound for a Field Research Director (FRD) job description? Oh yeah, and don't forget to document it all. Odds are that most of our current FRDs didn't read such a description when they started their jobs. In reality the most consistent and productive FRDs who crank out excellent field data books are exemplars of this hybrid, and rare skill set. A combined set of mechanical, documentation and crop growing skills make up the researcher's trifecta of effective characteristics.

Where exactly does the role of a researcher intersect with baling wire and tractor driving? Although it's

unlikely that gene splicers will spend much time on a tractor, there are many IR-4 trials that require knowledge of RPMs and tractor speeds. If there's not a tractor involved there very well may be walking speed, nozzle size and boom pressure to balance the protocol's application requirements. Those researchers with long term experience in the program will also recall the challenging trials that required unusual booms or equipment layouts beyond the parameters of a straightforward, single application trial. Mechanical skills and a bit of hands-on configuring go a long way when the protocol ventures into uncharted waters.

If you're a top-notch code wizard you will likely be headed to Google

or Pixar, but a top notch Field Research Director will have a similar ability to communicate and document in the digital age. Our field GLP studies combine technical tools with data delivery using a good ol' old fashioned paper notebook. The FRD who remembers to snap a few pictures with their camera (or smarty pants phone) and forward them to the Study Director is well on their way to elevated tech-Savvy status. This same photograph can then be printed (with some explanatory notes) and inserted into the notebook. Most of these technical tools require a certain amount of "tweaking" to learn exactly what capabilities exist. How close is that GPS unit to a known spot? Does that Kestrel wind speed

continued on pg 8



Inside this issue...

3 NCR SLR Meeting

4 Spotlight:
Rhododendron

6,7 Workshops

10,11 Workshops

12 Tolerance
Successes



Dragon Fruit: bloom, James Kam & Julie Coughlin training vines, and fruit at the University of Hawaii.

Dear Friends,

I am excited to share with you highlights from the four wonderful workshops IR-4 held this autumn in Chicago. During the week of September 20, IR-4 successfully facilitated the first Global Minor Use Workshop, the annual IR-4 Food Priority Workshop and the second IR-4 Biopesticide Workshop. On October 7th and 8th, IR-4 held its biennial Ornamental Horticulture Priority Setting Workshop. Over 350 people from more than 30 countries attended one or more of the workshops.

There are detailed articles of the workshops (see What a Week of Workshops! And Then Another One (pages 6, 7, 10 & 11)) and articles on some of the Regional Priority Setting meetings (North Central Region page 3 and Southern Region page 5). The goal of all these workshops/meetings is to provide direction for the selection of research priorities on the most important pest management needs on specialty crops. I want to acknowledge the efforts of many of my associates in the planning and running of the workshops. Dan Kunkel, was the Chair of the Global Workshop Organization Committee that planned the program and developed a new global minor use database that tracks global minor use pest management voids. Van Starner once again did an excellent job in coordinating the Food Use Workshop. Kudos to Michael Braverman and Krista Coleman for their efforts on the Biopesticide Workshop. Also great job to Cristi Palmer in the Ornamental Horticulture Workshop; this workshop gets better and better. Special recognition to Cheryl Ferrazoli, Susan Bierbrunner and the four IR-4 Regional Field Coordinators (Edith Lurvey, Michelle Samuel-Foo, Satoru Miyazaki and Rebecca Sisco) for their contributions in all four workshops.

Some highlights of the workshops included the tropical crop caucus from all regions of the world coming together and identifying a single minor use priority for research, Jason Sandahl of USDA-Foreign Agriculture Service announced that USDA is providing IR-4 \$500K to help IR-4 launch a Global Minor Use Fund to support global research efforts. Special recognition goes to Dr. Mary Hausbeck who was presented the 2015 SOAR Award for her excellence in Service, Outreach, Altruism and Research. Also receiving the 2015 SOAR Award is Dr. Robin Bellinder. Sadly, Dr. Bellinder passed away on November 13, 2015. Her family received the award posthumously.

During the workshops, I spoke several times on the numerous IR-4 challenges and transitions surrounding IR-4. Together, we need to continually look for ways on improving efficiency in order to accomplish our mission. We have begun planning for an organizational assessment that will look at many aspects of the IR-4 research programs and suggest improvements.

Switching gears, congratulations are in order for the IR-4 Project Management Committee Chair, David Soderlund, who was recognized as a 2015 Fellow of the Entomology Society of America. The news release on this prestigious award can be found at entsoc.org/esa-recognizes-2015-fellows.

Finally, I want to give a shout out to my friend and colleague, Dr. Mary Duryea who retired this summer. Mary served for many years as the IR-4 Southern Region Administrative Advisor. Most recently, she was Chair of the Administrative Advisors. Mary has provided great support and advice for IR-4 and has helped us navigate the Project through some of its greatest challenges. We will miss Mary's insight and ideas. One of Mary's last duties was to recruit her replacement, and she did a fine job in recruiting Dr. Jackie Burns of the University of Florida to take on the Southern Region Administrative Advisor role. Jackie has instantly engaged in IR-4 activities and continues Mary's legacy of sound advice and guidance.

All the best,

Jerry



A Review of the 2015

NCR Liaison Meeting — by Kathryn Homa, Fungicide Coordinator, IR-4 Project Headquarters

On August 24-25, 2015, the North Central Region (NCR) held its annual NCR IR-4 Liaison Meeting at Michigan State universities' (MSU) Biotechnology Institute, in Lansing. The meeting began with an introduction of the meeting attendees that included John Wise, the Director of the IR-4 NCR, Satoru Miyazaki, The NCR Regional Field Coordinator, Sue Erhardt, the Regional Lab Research Coordinator, Michael Chen, the NCR Quality Assurance Coordinator and several NCR State Liaison Representatives, a number of NCR field research directors and Kathryn Homa, IR-4's Fungicide Coordinator.

Following the approval of 2014 minutes and appointment of the operating committee for nominations and awards, the 2015 IR-4 Award Presentations were made. The two 2015 NCR

who received the Meritorious Service Award, and Blair Harlan, the Field Research Technician working with Mary Hausbeck at MSU, who received the Technical Service Award.

A majority of the first day of the meeting was spent nominating the NCR food-use research priorities in preparation for the 2015 IR-4 Food Use Workshop that was held in Chicago September 22-23, 2015. Herbicide priorities included project requests on root crops, onion subgroups, leafy greens, Brassicas, beans, strawberries, rye, herbs, canola and marigold. Fungicide priorities included project requests for ginseng, potato, onion subgroups, leafy greens, Brassicas, beans and peas,

tomatoes, blueberry, strawberry, asparagus and hops. Insecticide priorities included project requests for tomato, squash, stone fruits, berries, sweet corn and hops.

After all priorities were selected, the

IR-4 Project Status Update was given by Kathryn Homa of IR-4 Headquarters. This presentation communicated the continued need for IR-4 as a major resource for supplying pest management tools (conventional, biopesticide, organic) for specialty crop growers and minor uses. IR-4 is facing new

challenges including harmonization of MRLs with trading partners, pest resistance issues, new emerging and invasive pest pressures, more complex residue studies, new regulatory challenges and label use restrictions. Other major discussion points included the fact that registrants are increasingly registering specialty crop uses with their own funds and are relying more on IR-4 to provide performance data to support new uses. Because of this, IR-4 will be directing more resources to funding performance research in 2016. Other highlights of the presentation included yearly accomplishments in the IR-4 Food Use, Biopesticide, Ornamental Horticulture and Public Health Pesticide Programs, involvement in international activities and IR-4 transitions with personnel and funding to increase efficiency, service stakeholders and address budget issues.

The remainder of the day was focused on a number of topics including the IR-4 NCR leader laboratory reports for pesticide field and laboratory programs, a quality assurance report, the NCR field research center reports and the NCR IPM Center program update. Then NCR specialty crop growers had some time to discuss their major needs in the region. Mites, whiteflies and thrips were identified as major pests in both organic and conventional systems. The major

continued on page 5



award recipients were Sue Erhardt, the NCR Regional Laboratory Coordinator at MSU,



A Thousand and One Arabian Rose Trees?

— by Cristi Palmer, IR-4 Ornamental Horticulture Manager

Well, not exactly, but throughout the world there are more than 1,000 species of *Rhododendron*, or “rose trees”. Commonly known in cultivation as azaleas and rhododendrons, *Rhododendron* species are grouped with ericaceous plants (heath, heather, cranberry, and blueberry) and can be evergreen or deciduous. *Rhododendrons* are distributed worldwide in temperate to tropical climates. In addition to the large number of species, many inter-species hybrids and cultivars have been bred for improved bloom size, color, fragrance and foliage form.

Together, azaleas and rhododendrons are considered one of the top broadleaf evergreen horticulture crops in the US with over \$141 million wholesale value annually (USDA NASS, Census of Agriculture 2009 (bit.ly/statstool)).

In cultivation, there are three primary groups: evergreen rhododendrons, deciduous hybrid azaleas, and evergreen hybrid azaleas. Evergreen rhododendron species are understory plants in many eastern US forests and are commonly used in landscape

plantings in shady spots.

Both deciduous and evergreen azaleas may be placed in shady areas



but are often transplanted in more sunny locations, which can lead to stress and increased problems with lace bugs. A fourth group (*Vireya* rhododendrons) are unusual in that they are epiphytic tender shrubs. *Vireya* rhododendrons originated in Southeast Asia in tropical regions, but they grow mostly in cool mountainous regions as epiphytes on tall trees or low growing shrubs.

Azaleas and rhododendrons are in the same genus which means they have fairly similar characteristics. However, along with other morphological and genetic traits, they can be separated based on the number of stamens present in the flowers: azaleas have 5 stamens, and rhododendrons have 10.



Azaleas and rhododendrons are prone to several diseases and pests. Root pathogens include *Phytophthora*, *Rhizoctonia*, and foliar pathogens include *Botrytis*, *Botryosphaeria*, rusts and various fungi causing leaf spots. Pests include root-feeding insects such as the larval stages of black vine and strawberry weevils, Japanese and oriental beetles, and foliage or shoot feeding insect such as the adults stages of previous mentioned insects, lace bugs, aphids, scale and leaf miners. IR-4 has sponsored efficacy research on some of these

pathogens and pests. In particular, many experiments have been conducted to screen efficacy for various *Phytophthora* species including *P. ramorum*, a pathogen which causes foliar blighting.

Weeds impact production of azaleas and rhododendrons pots. Crop safety studies using over the top or directed herbicide applications are necessary for growers to know which products to use during dormant periods or during periods of active growth.

Crop safety studies have been conducted with 15 fungicides, 61 herbicides, and 10 insecticides.

In addition, IR-4 has sponsored research on *Rhododendron* species

with plant growth regulators to increase plant branching. Products containing 6-BA or cyclanalide exhibited variable impact from decreased to increased

branching and products containing GA₄ + 7 had no impact. In other words, some additional work is needed to determine best rates and/or timing to foster improved branching characteristics with different species and cultivars.

Rhododendron species have been well-studied crops through IR-4 due to their popularity over the years. As priority projects shift to different pathogens and pests, we will continue to work to develop efficacy and crop safety data for relevant problems. 🌱

NCR Meeting continued from page 3

pathology issues included the need for good *Pythium* products. Pesticide resistance was also a major issue.

The following day was spent discussing the SLR Reports and the recommendations for IR-4 failed field trials, which was put together through an Ad Hoc committee that was formed to look at ways to reduce/eliminate avoidable problems in IR-4 field trials. The remainder of the meeting focused on the need for increased funding due to more and more complicated residue studies, additional protocol reviews before the protocol is finalized, and the desire for additional minor/specialty crop trials conducted in the NCR region.

Following the NCR meeting, Kathryn Homa met with Dr. Mary Hausbeck (plant pathologist) to view efficacy work at MSU field sites and discuss current grower issues. Some of the major issues included bacterial diseases in apple and tomato, downy mildew and *Phytophthora* in cucurbits, *Pythium* in brassicas, *Alternaria* in carrot, purple spot in asparagus, and downy mildew in hops production, which is becoming a popular crop in the NCR growing region.

If there are inquiries pertaining to the 2015 NCR IR-4 Liaison Meeting, please contact John Wise at wisejohn@msu.edu or Satoru Miyazaki at ncrir4@msu.edu. 🌱

Highlights from the 2015 IR-4 SOR Priority Setting Meeting

— by Michelle Samuel-Foo, IR-4 Southern Regional Field Coordinator

The IR-4 Southern Region (SOR) holds a face-to-face priority setting workshop on alternating years at rotating locations throughout the Southeastern US. The goal of the workshop is to select and rank projects of regional importance, whether they are for GLP residue work or performance research needed for registration. These selections are considered SOR priorities at the national IR-4 Food Use Workshop. In off years, the SOR region decides on priorities via a combination of regional field

coordinator moderated, discipline specific conference calls and or webinars. In 2014, an online qualtrics survey was utilized to help with this task, where participants were able to view eligible products online and input nominations for crops of interest with comments.

This year the SOR meeting saw a group of about 60 stakeholders travel to sunny Coconut Grove Florida on Aug 18th and 19th, for a day and a half of project

continued on pg 9

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First Global Minor Use Workshop: Seeking Pest Management Solutions for Growers Around the World

The week began on Sunday, September 20, 2015, with the first ever Global Minor Use Workshop. Over 170 people from more than 30 countries gathered in Chicago and participated in the Global Minor Use Workshop. The goal of the Global Workshop was to develop plans for cooperative research targeting one study each on tropical and temperate growing climates and one in greenhouse environments.

The Global Workshop was organized by IR-4 and several other international partners and funded by USDA's Foreign Ag Service (FAS) and industry sponsors. It was held in association with IR-4's annual research priority setting workshop for specialty food crops

What a Week of Workshops! And Then Another One

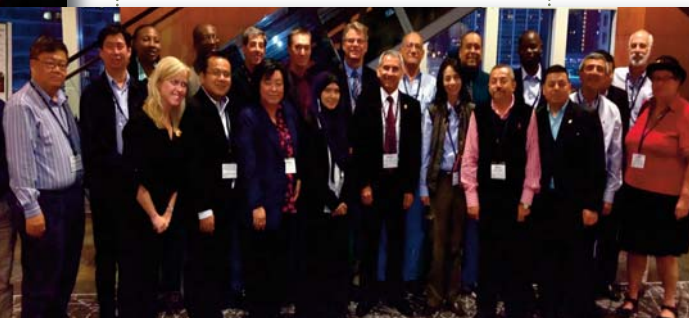
and biopesticides. Conducting the Global Minor Use Workshop was an "action item" identified at the Second Global Minor Use Summit (GMUS2) that was held at the FAO headquarters in Rome, in 2012. The idea of countries working together to share data and conduct field studies came out of the model formed between the IR-4 Project and the Agriculture and Agri-Food Canada's Pest Management Centre (PMC). This collaboration, which began in 1996, saves both countries valuable resources and facilitates trade of high value specialty crops. The success between IR-4 and PMC has influenced additional collaborations between IR-4 and Australia, Costa Rica, Brazil and Mexico.

The Workshop was one of the many steps in global cooperation to solve minor use needs. US specialty crop growers and their international counterparts seek harmonization of pesticide standards, regulations and MRLs. Differing standards may block the use of newer lower risk products that are a critical

component in modern pest management systems. Other ongoing efforts involving IR-4 include capacity building in developing countries led by Michael Braverman and Edith Lurvey.

Activities at the Global Workshop concentrated on reviewing a newly developed database of priority global minor use pest management needs, another GMUS2 "action item". This database was created through a worldwide survey conducted months before the workshop. Forty countries shared information about their specialty crop pest management voids and needs for solutions. Information from the database was used to determine what the most important pest needs were and to seek possible solutions for joint research. As needs were discussed, many countries responded by offering existing data to assist in solving pest management problems.

FAS sponsored numerous delegates from developing countries. Lucy Namu, principal analytical chemist with Kenya Plant Health Inspectorate Services (KEPHIS) noted, "This workshop will enable us to obtain more crop protection tools, which will help open markets for our products. The workshop



Participants of the STDF Residue Project from Africa, Asia and Latin America with the IR-4/USDA-FAS Capacity Building Team Attending the Global Priority Setting Workshop.

also gave us an opportunity to understand how priorities can be identified in order to help all countries and we all appreciated the interaction with those from other countries.”

Many of the developing countries participated in the selection of a research project for tropical crops. IR-4, through its network developed under the Standards Trade Development Facility, funded capacity building and training programs, and agreed to be the “lead country” for the tropical project and will provide the oversight and direction for the project. The priority project and “lead country” is still pending for the temperate and the greenhouse crops.

Jason Sandahl, USDA-FAS Office of Capacity Building and Development, announced that the USDA-FAS has provided a contribution of \$500K to a Global Minor Use Fund. He proposed this as “seed” money, and challenged other countries to contribute to the fund in order to fund global research projects. The Global Minor Use Fund will be administered through the IR-4 Project at Rutgers University.

The workshop also provided clearer direction for the organizers in reorganizing the selection process for future global workshops. Most agreed the Global Minor Use Workshop was invaluable, and the beginning of conversations and collaborations that will unite countries and build trust.

EPA Risk Assessment Forum

Immediately following the Global Minor Use Workshop, Barbara Madden, Minor Use Coordinator, EPA Office of Pesticide Programs, offered an enlightening seminar about EPA data review. Her intent was to help IR-4 stakeholders better

understand the EPA decision-making process, and how it relates to IR-4 submissions. Based on feedback after the seminar, her presentation was valuable and well received.

The IR-4 Annual Food Use Workshop

IR-4 kicked off the annual Food Use Workshop (FUW) with a “Welcome to Illinois” from Alan DeYoung, a conventional and organic grower in Momence, IL. Barbara Madden provided EPA updates on key topics that impact specialty crop stakeholder priority research needs. She also provided information on crop grouping revisions, pollinators and antibiotics. IR-4 Executive Director, Jerry Baron, completed the day’s activities by presenting a “State of IR-4” address. Jerry also recognized researcher Dr. Mary Hausbeck, she, along with Dr. Robin Bellinder (who will receive the award in early 2016) are the 2015 IR-4 SOAR Award recipients.

The next day, following industry presentations, over 210 participants got down to the business of prioritizing research activities for 2016. This year’s FUW was particularly challenging as only 40 “A” priority projects could be assigned, down from as many as 65 in past years due to funding constraints. This, along with urgent research needed on newer crops such as marigold oil, chia, and quinoa, which have few pest management tools registered, made for an exhausting day of “horse trading”.

Participation for all the workshops was the highest in recent IR-4 history and included a number of new commodity representatives. Commodity participation is very



Dr. Mary Hausbeck received the IR-4 SOAR Award for her excellent Service, Outreach, Altruism and Research during the Food Use Workshop.

important to the process of meeting grower needs.

In addition to fewer priority “A” residue projects, more and more companies are asking IR-4 to produce performance data for inclusion in registration petitions. Recognizing this need, the IR-4 Project Management Committee agreed to a budget scenario wherein \$450K is dedicated to fund this research and less is dedicated for residue studies than in previous years. Five high priorities (H+) were identified for this performance research.

Most who answered the IR-4 FUW survey were satisfied with the overall workshop, the format, time that was allowed for networking, the location and venue. Many commented they liked the networking opportunities the best.

This year, the priorities were selected on day two of the workshop. Survey comments regarding this order stated that some felt it was better to choose priorities on the first day and have a night to sleep on it. They commented this would give people time to talk and propose ways to cooperate.

Many of the attendees of the Global Minor Use Workshop stayed on and

Master FRD

continued from pg 1

indicator come anywhere close to the weather station readouts? Am I the only FRD whose bean leaves look like toasted sesame buns?

Once weather data, storage temperatures and a plethora of other data points are collected, the researcher is required to deliver a completed notebook. This “knack of documentation” is the ability to sit down at a desk to complete the copious records and deliver a thorough accounting of the trial. The resulting field data book is the mark of a master FRD.

The third leg of the FRD tripod is certainly the farmer’s green thumb. This green thumb and “phyllophillic” embrace of all things green is essential for the FRD’s skill set. Even describing this as a green thumb is a stretch at times as our FRDs have grown oysters (muddy brown outsides, white and gray insides), dates (dark brown and glassy), avocados (black and green), and a host of other green and not so green specialty crops. A green thumb here translates into a curiosity about a new or unusual crop that will take some tweaking to successfully produce a commercially acceptable crop.

A recent “new crop” arrival in the west (also in the south) has been stevia which was successfully cultivated and harvested at UC Davis and the UC Kearney Research and Extension center. Stevia is an herbaceous perennial crop whose foliage is harvested for the

extraction of “steviol glycosides” which are the actual compounds that make stevia a natural sweetener. Both Davis and Kearney successfully established research plots for stevia residue trials. Seth Watkins and Guy Kyser established additional plots for UC Davis Weed Scientist Specialist Brad Hanson that were used to screen potential herbicide candidates. The stevia plots at Kearney thrived under David Ennes and Keri Skiles’ care to the extent that the untreated stevia may be sold back to the commercial stevia cooperators upon the completion of the residue trials.

Dan Groenendale at WSU tinkered with growing wasabi at the Irrigated Agriculture Research and Extension Center in Prosser Washington. WSU entomologist Doug Walsh utilizes Dan’s technical and growing skills to conduct efficacy and residues studies on hops, grapes and a wide array of specialty crops including wasabi. This uniquely grown, semi-aquatic brassica species was established by Dan in research greenhouses at Prosser. Dan then passed his experience onto Oregon State researchers who were also conducting wasabi residue trials. Wasabi has a lengthy growing period which extends beyond 18 months, during which disease and insect pressures had to be creatively addressed. The fact that both OSU and WSU produced this challenging crop is a testament to FRD tenacity in learning and tweaking the growth cycle of this new crop.

The other essential element that ties together good mechanical, documentation and growing skills is

an ability to carry these actions out without losing a sense of humor. For all of us working within the numbered and numbing world of GLP generated data, there’s often a gotcha or corrective tone to our interactions. With certainty GLP does require us to painstakingly document each and every detail of a study. At times, this is particularly evident when we’d rather not announce to our colleagues that we’ve erred seriously (or simply) during our study conduct. The FRD who can respond to questions and reviews of their data with a straight face (and the occasional humorous quip) makes the whole process flow that much more smoothly.

It was that now retired FRD extraordinaire Chuck Farrar of UC Riverside who famously used the TE error code. When prompted to explain this unauthorized use of a non-sanctioned error code (it does not appear in the official IR4 notebook list) Chuck quipped back “tedium error.” Excellent data, clearly and cleverly delivered, with a sense of humor toward the vagaries of life under GLP marks the work of an excellent Field Research Director. The IR-4 program is well served by Field Researchers who can combine this unique skill set involving mechanics, documentation, and plants while delivering solid results within a professional, human context.

Thanks to all our FRDs who exemplify and strive toward this apex of field research skills. 🌱



Dan Groenendale and Wilson Peng working in the wasabi greenhouse.



Roger Batts, Ric Bessin and Melanie Ivey led the discussions.

evaluations. IR-4 Executive Director, Jerry Baron, opened the meeting with an update on the status of the IR-4 project. He outlined some of the challenges that the program is expecting to face in coming years with budgets and indirect costs to the program, and also talked about plans for re-structuring the way that IR-4 operates in order to continue to be relevant and to meet the continuing needs of IR-4 stakeholders.

A select group of registrants, both conventional chemistry representatives and those focused on biopesticides and organics, presented brief product and technical updates to the attendees. This was followed by a series of 10 minute presentations from IR-4 State Liaison Representatives (SLR) and other invited speakers who took the opportunity to highlight what they saw as the most critical pest and disease management needs for their individual states or industry. Mike Aerts, of the Florida Fruit and Vegetable Industry presented on the "Pest Challenges and Registration Needs for Florida Specialty Crops while Dr. Jonathan Crane, a horticulture science professor at the University of Florida (UF) and faculty advisor for the IR-4 residue program at the UF's Tropical Research and Education Center presented on the "Pest and Disease Challenges of the Tropical Fruit

Industry." Dr. Ric Bessin, IR-4 SLR for Kentucky spoke to the group about the "Emerging IR-4 priorities" for his state, including the need for conventional chemistry options for chia, a growing specialty crop in KY and OK. Other SLRs gave similar themed presentations, with the idea that state contacts had an opportunity to highlight the most important needs for their localities before the actual project prioritizations began.

With the aid of discipline specific leads Roger Batts, IR-4 field researcher/study director at North Carolina State University (weed science), Melanie Ivey, SLR at Louisiana State University (Plant Pathology) Ric Bessin (Entomology), and Michelle Samuel-Foo, regional field coordinator for the IR-4 SOR program, led discussions and project evaluations that lasted throughout the afternoon. At the conclusion of the priority setting, a total of 88 projects were selected as regional priorities for either residue testing or performance research. Projects that received at least one A nomination automatically moved on to the national workshop for further evaluation. If a project receives support at the national workshop, it typically enters the residue testing field program for 2016.

Day 2 of the meeting was focused primarily on Biopesticides, as a prelude to the national biopesticide workshop. Krista Coleman, who helps coordinate the Biopesticide effort at IR-4 headquarters (Rutgers University) presented the 2014 priorities that were identified nationally and conducted in the south. The discussions here identified weed management in row middles in organic crops and sugar cane as issues that require attention, in addition to spotted

wing drosophila in thin-skinned fruits and whitefly control in greenhouses.

The SOR IR-4 program honored 3 individuals at this gathering with recognition for outstanding contribution over the years. Dr.

Leopoldo Estorninos (pictured right), a weed scientist and field research director at Arkansas State University received the IR-4



technical service award for his work in developing data in support of registration petitions in EPA region 4, while Dr. Gary Vallad from the University of Florida's Gulf Coast Research and Education Center, received the IR-4 Meritorious service award for his long-standing dedication and contributions to specialty growers in the SOR.

Lastly, Dr. Marty Marshall, who recently retired as IR-4 SOR director, was recognized with an appreciation award for his years of service to the program. Dr Liwei Gu, an associate professor in the Food Science and Human Nutrition department at the University of Florida will assume this role beginning in 2016.

The IR-4 SOR will meet again in 2017 to repeat this process. Priority setting for 2016 will occur via an online process and teleconferencing. Stakeholders can expect to begin receiving information regarding this in mid-spring 2016. 🌱

Workshops

continued from pg 7

for residue studies than in previous years. Five high priorities (H+) were identified for this performance research.



Seeking compromise during the FUW, Western Region SLR, Doug Walsh (Washington state), talks with North Central Region researcher, Mary Hausbeck, about the needs specific to their regions.

Most who answered the IR-4 FUW survey were satisfied with the overall workshop, the format, time that was allowed for networking, the location and venue. Many commented they liked the networking opportunities the best.

This year, the priorities were selected on day two of the workshop. Survey comments regarding this order stated that some felt it was better to choose priorities on the first day and have a night to sleep on it. They commented this would give people time to talk and propose ways to cooperate.

Many of the attendees of the Global Minor Use Workshop stayed on and



Weed science breakout group.

participated in the FUW. Those who commented in the survey felt the FUW method of prioritizing research, by using crop groups, was a better way to prioritize research projects. Seeing this helped the organizers of the Global Workshop to strategize future Global Workshops in this manner.

Planning is already underway for the 2016 Food Use Workshop and it is expected to be held in the US Western region.

The Biopesticide and Organic Support Workshop

On September 24, 2015, IR-4 held its second Biopesticide and Organic Support Workshop to identify the most important research priorities for conventional and organically grown crops. One hundred and sixty-three people attended the final workshop of the week.

Until last year, priorities were selected through a request for proposal system, which included three stages of research: Early, Advanced and Demonstration Grants. IR-4 turned to the priority based grant system for 2015 trials. These priorities were selected in a workshop and included spotted wing drosophila (SWD) for fruit crops, fireblight on apples, chestnut blight as an ornamental priority, RNAi based technologies in all crops, varroa mite control in honeybee colonies, mosquito control and bacterial diseases of fruiting vegetable crops. Studies were conducted on these priorities and the results were presented to the workshop participants.

Participants were then asked to form breakout groups for entomology, plant pathology and weed science. Groups were asked



Biopesticide and Organic Support Workshop leaders 1 to 4, Dan Kunkel, Krista Coleman, Michael Braverman and Bill Barney.

to answer the following questions:

Should IR-4 continue funding the same projects in 2016 that were funded in 2015?

Within the list of priorities, have any become a more serious problem that needs more attention?

Are there certain priorities that are of national importance versus regional interest?

Are there any new products that have a lot of potential to the degree that a particular priority should be ranked higher than others?

Where do resistance problems exist that need alternatives or how to integrate biopesticides, conventional products and cultural practices to manage the pest?

Within the groups of Fruit, Vegetable, Organic, and Other what are the most important priorities?

Following the breakout groups, participants were asked to vote for the top priority needs for Biopesticide & Organic support research. The results found the top priorities were SWD in fruit, fire blight in organic production, chestnut blight, weeds in all crops, and bacterial diseases in fruiting vegetable crops.

Those who answered the workshop survey, thought the workshop provided a venue to learn about new products, and research results

and they liked the networking opportunities. They felt there needed to be more time for discussion, and to better understand how the Biopesticide program is funded.

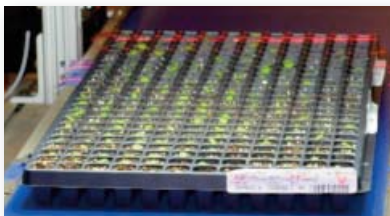
And Then The Ornamental Horticulture Workshop

The 2015 Ornamental Horticulture Workshop, held at the Hyatt Regency Schaumburg-Chicago started with an optional tour on October 6, visiting the Ball Horticulture seed treatment facility, Morton Arboretum, and three facilities of Midwest Groundcovers. At Ball, participants split into two groups to tour 1) the seed storage and packaging facilities to view a machine that counts and measures seed as fast as 2000 seeds per second and 2) the seed coating stations where naked seed is slowly coated with inert ingredients and an outercoat to facilitate automatic seeders.

In the breeding greenhouse at Morton Arboretum, the enthusiastic Joe Rothleutner is developing new trees with improved characteristics. The afternoon stop included Midwest Groundcovers headquarters, the Natural Gardens, and their primary production facilities in Virgil, IL where they clearly demonstrated a commitment to growing high quality plants of



Morton Arboretum: one of the many displays incorporating colorful pumpkins and gourds with fall blooming flowers. —Photo by Cristi Palmer



Ball Horticulture Company: examining seed germination. — Photo by Cristi Palmer

many types using the best strategies available.

During the morning of the workshop, registrant representatives presented new active ingredients and highlighted opportunities for existing products. Then, the results of the Grower & Extension Survey were presented, and participants discussed the pros and cons for conducting efficacy or crop safety research on 41 current and potential new projects across entomology, pathology and weed science. To have these discussions flow smoothly, IR-4 staff developed project sheets (bit.ly/ornhorsheet) that summarized recently studied projects and potential new projects based on the annual Grower & Extension Survey and newly received project requests. Also, new projects for each discipline were raised as potential research avenues during the workshop. The moderators for each discipline included: Cristi Palmer (Pathology), JC Chong (Entomology), and Tim Miller (Weed Science).

After the relative merits of each project were captured on poster-size paper and fastened to the walls the regions ranked projects of interest, a "Sticker Caucus" was held so that attendees could vote for the research projects IR-4 should undertake during 2016 – 2017. During the second morning of the workshop, the outcomes for each discipline were displayed and protocol directions were finely tuned.

The Pathology Projects include Botrytis efficacy, Bacterial Disease efficacy, New Product crop safety. The Entomology projects include thrips efficacy, foliar feeding beetle efficacy, new product crop safety. For Weed Science, the pre-emergent liquid herbicide crop safety continued with a primary focus on liquid herbicides with certain granular herbicides investigated, while the Ornamental grass herbicide crop safety will continue to screen Dimension 2EW, Gallery, and Pendulum 2G on those grass species already started.

After the priorities for the Ornamental Horticulture Program were finalized, the group led by Michael Braverman and Krista Coleman discussed and prioritized projects for the Biopesticide and Organic Support Program. The highest ranked projects were similar to the ones determined at last year's Biopesticide Workshop. In particular, there was a decision to continue the research on managing chestnut blight. The two approaches for chestnut blight management include resistance from an oxalate oxidase gene and using a virus to reduce the activity (hypovirulence) of the fungi (*Cryphonectria parasitica*), that causes chestnut blight.

In all, the 2015 IR-4 Ornamental Horticulture Workshop was successful in fostering good discussions and finalizing research priorities.

People who provided feedback liked the registrant presentations, networking opportunities and the flow and organization of workshop.

Please visit ir4.rutgers.edu for links to presentations, posters and photos of the workshops. 🌱

July - September 2015

The trade names listed below are provided as a means to identify the chemical for which a tolerance has been established. A trade name listed here may not be the name of the product on which the new food use(s) will be registered. Only labeled products may be used on a food crop. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical.

Federal Register: July 08, 2015

S-Metolachlor

Trade Name: Dual Magnum

Crop: Lettuce, Fruiting vegetable (except tabasco pepper) group 8-10, Cucurbit vegetable group 9, Low-growing berry (except cranberry) subgroup 13-07G, Sunflower subgroup 20B
PR#: 01676, 03659, 06656, 08982, 09406, 10099, 10218, 11280, 11281

Federal Register: July 22, 2015

Novaluron

Trade Name: Rimon

Crop: Avocado, Succulent bean, Carrot, Fruiting vegetable group 8-10, Pome fruit 11-10, Cherry subgroup 12-12A, Peach subgroup 12-12B, Plum subgroup 12-12C, Cucurbit vegetable group 9 (revised tolerance) **PR#:** 09246, 09522, 09780, 10237, 11025, 11026, 11414, 11415, 11416

Federal Register August 06, 2015

Fluazifop-p-butyl

Trade Name: Fusilade

Crop: Sweet potato (revised tolerance) **PR#:** 02328

Federal Register: August 14, 2015

Fludioxonil

Trade Name: Scholar

Crop: Carrot, Stone fruit group 12-12 **PR#:** 11181, 11449

Federal Register: August 26, 2015

Difenoconazole

Trade Name: Inspire, Quadris

Crop: Globe artichoke, Ginseng, Stone fruit group 12-12, Tree nut group 14-12 **PR#:** 10387, 10446, 11441, 11442

Federal Register: September 09, 2015

Cyprodinil

Trade Name: Switch, Inspire, Vanguard

Crop: Globe Artichoke, Pomegranate, Guava, Acerola, Feijoa, Jaboticaba, Passionfruit, Starfruit, Wax jambu, Stone fruit group 12-12
PR#: 06983, 07127, 10387, 10613, 11440, 11443

Federal Register: September 17, 2015

Halosulfuron-methyl

Trade Name: Sandea

Crop: Pome fruit group 11-10, Small vine-climbing fruit (except fuzzy kiwifruit) subgroup 13-07F (East of the Rockies only)
PR#: A7768, A9722

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