

New Regional Field

Coordinators

IR-4 is looking a bit different these days with two new Regional Field Coordinators.

The North Central Region

has appointed Dr. Anthony (Tony) VanWoerkom to replace Satoru Miyazaki.



When asked to provide a little information about himself, Tony wrote,

"For the past ten years I have been a fruit entomologist with Michigan State University, where I received my Bachelor's, Master's, and Ph.D. in Entomology. I began my IR-4 experiences in 2011 as a technician, working with the field data notebooks and field work while conducting efficacy work and finishing my master's degree. In 2014 I gained the position of Field Research Director, continued efficacy work, and began my Ph.D. program. In 2016 I became a proud father while attempting to write my Ph.D. dissertation (I did it!). My Ph.D. was directly related to IR-4 as I studied the

Management of Pesticide Residue Levels for Michigan Apples and Cherries to meet global Maximum Residue Levels. I am very honored and excited to begin my new position as the Regional Field Coordinator for the NCR and also have baby #2 on the way (it's a boy)! I am building up a lot of energy for the excitement coming.

When I am not working, I love to collect and identify insects and wildlife with my wife Rachel and 2 year old daughter Charlotte. I am also a fisherman and love to play hockey and basketball. I grew up along the shores of Lake Michigan in Holland, MI so I also try to get back to my favorite place at the beach."


You can reach Tony at vanwoer3@anr.msu.edu, 517-336-4611 (MSU) or 269-561-5040 (Trevor Nichols)

The Southern Region

has appointed Dr. Janine Spies who is working with the interim SOR RFC, Roger Batts, to transition into the position and expects to take the reins in the fall.

Janine comes from the University of Florida where she received her Ph.D. in Entomology and has since been a Postdoctoral Researcher working for Dr. Oscar Liburd. During her time at UFL, she evaluated integrated pest

management strategies in fruit and vegetable production, with a focus on organic agriculture. Janine has spent many years getting to know specialty crop stakeholders in the southern region and is excited to continue her contributions to pest management. In her spare time, she enjoys hiking, being outdoors with her husband and dog, and collecting insects.

You can reach Janine at jrazze@ufl.edu and 352-294-3991. 



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Dear Friends,

Am I going too far out on a limb to acknowledge that there are many great changes occurring in the world around us? These changes are in so many different aspects of our day-to-day life. Some of these changes are good, making our lives easier or more efficient. Others may have long-term implications that could be good, or not so good. We will leave it up to future generations to make that final judgment.

One of my favorite quotes is from Jack Welch, retired CEO of General Electric. The quote reads, *"If change is happening on the outside faster than on the inside the end is in sight."* IR-4 has been a leader and agent of change and we must continue to "read the tea leaves" and make modifications that allow the IR-4 Project to remain relevant in this ever-changing world.

Back in 1982, IR-4 established a dedicated Biorational Program to focus efforts on biological products for pest management. The investment provided human and financial resources to develop data and support registration of these products that were predominately microbes or biochemical. IR-4 was definitely a change agent in this area, helping technology discovered by the public research sector to gain EPA approval and market acceptance. Some IR-4 assisted products have had great commercial success, including *Aspergillus flavus* strain AF36 to displace aflatoxin, and the biofungicide REGALIA.

IR-4 believes that the future involves enhanced opportunities for biopesticides in conventional agricultural production systems, often in association with chemical pesticides. In May, IR-4 announced it was making changes in its Biopesticide and Organic Support Program. The research focus of the Biopesticide Program will be moved into a new program called "Integrated Solutions". Also moving into the Integrated Solutions are some of the efficacy and crop safety screening projects from the Food Use Program. Under this program, IR-4 intends to integrate biopesticides and chemical pesticides as a tool to reduce the impact of pest resistance to control tactics and manage residues in the final foods without compromising pest management capabilities. The first Integrated Solutions research will be in 2019, with priorities established at the September 2018 workshop. In 2019, IR-4 will continue to fund some traditional biopesticide research products. It is expected that by 2020, the Integrated Solutions will be fully functional. Please note, IR-4 will continue to provide regulatory support for new technology from USDA, universities and small business and set aside resources to support organic production systems with their pest management needs.

Other changes within IR-4 include two new Regional Field Coordinators. The North Central and Southern Regions have announced that they have hired Anthony (Tony) VanWoerkom and Janine Spies, respectively, in this critically important role. Tony replaces Satoru Miyazaki and Janine replaces Michelle Samuel-Foo. Please help me in welcoming these two new IR-4 team members. Also, join me in thanking John Wise and Roger Batts for their assistance as interim Region Field Coordinators. Another new member to the extended IR-4 team is Nancy Fitz. Nancy has been appointed as EPA's Minor Use Team Leader and replaces Barbara Madden who retired last September. You can read more about them in the cover story.

Another significant change is the launch of the new IR-4 website (see feature article). We hope you find the new site easier to use while maintaining the general depository of being all things to specialty crop pest management. The new site allows us great flexibility for changing content so your comments and suggestions for additions/adjustments are welcome.

I hope to see many of you at the upcoming priority setting workshops in St. Louis, MO, September 19-21. This year's workshop will included the kickoff of the Integrated Solutions research in addition to traditional Food Use priorities and a smaller set of biopesticide priorities. Please see the IR-4 Website (ir4project.org) for more details.

That's all for now,

Jerry



In Memoriam:

Dr. David C. Thompson

— by Keith Dorschner, IR-4 Entomology Program Manager and Mary Hausbeck, MSU Distinguished Professor

Dr. David C. Thompson served as the IR-4 Plant Pathology Program Manager at IR-4 Headquarters for nearly 20 years. He was an excellent plant pathologist who was known and respected for his imaginative and consequential work on behalf of specialty crops and the IR-4 Project.

Dave authored many successful proposals to the EPA that extended and maximized the utility of data generated by IR-4 studies. His soaring intelligence and passion for his work were obvious and appreciated by his clientele and colleagues.

Dave died unexpectedly at his home on June 23 from complications following surgery.

Farmers held a special place in Dave's heart. As a young man, Dave helplessly watched as his father, attempting to supplement the family income by farming, lost an entire cucumber crop due to plant disease. This disaster prompted Dave to study plant pathology in college and he earned a Ph.D. in the discipline. His mission was to help growers avoid the crop loss and resulting economic hardship that his family had experienced.

Fate may have led Dave to a career with the IR-4 Project where he could put his passion for helping farmers and his knowledge of plant pathology to good use. Close to the end of Dave's IR-4 career, he submitted a proposal to EPA referred to as the "Mega

Submission". This was no ordinary submission!

The Mega Submission was a tolerance petition with multiple data packages covering five active ingredients with 78 new tolerance proposals covering hundreds of specialty crops. This was a gargantuan accomplishment that is unlikely to be eclipsed.

Dave's accumulated professional knowledge was wide and deep, yet he was always humble and eager to learn more. He put his expertise to good use and never lost site of the IR-4 mission. One IR-4 stakeholder with operations in the U.S. and Canada confided that he considered Dave to be a National Treasure for both countries, such was his dedication and impact in solving plant disease issues facing specialty crop growers.

He was always available to mentor and guide his University colleagues working with diverse crops and emerging pathogens. Dave's gift of time to his colleagues extended his skill set and resulted in lasting friendships.

As accomplished as Dave was in the realm of plant pathology and IR-4, he also excelled in his life outside of work. He was an Eagle Scout and one of the first 50 people to complete the Appalachian Trail in its entirety.

Dave was a dedicated outdoorsman, gardener, and hunter. He had a love and respect for wild animals and all creatures were welcomed



and fed wherever Dave lived. (Deer, however, were well-advised to hunker down during hunting season.) He also loved his numerous cats and his young black lab, Petunia. Dave was a compassionate man and an excellent and tireless caregiver to his wife, Anne, who suffered terribly from rheumatoid arthritis. Shortly after his retirement, Anne passed away, and Dave returned to Thompson, CT to live in and rehabilitate the old family farm. It was a labor of love that Dave successfully completed before his death. Should the old farmstead last another 200 years, it will be due to Dave's vision and workmanship.

Dave was a loving father to his son, Eric, and stepchildren, Heidi and Cody. His many friends and family members will remember his lasting legacy of service to agriculture and devotion to those close to him. While our sadness and sense of loss are profound, we take comfort that Dave is now with his beloved Anne and that his suffering is over.

Dr. David C. Thompson of Thompson Road in Thompson, CT now lies in the small East Thompson Cemetery. Dave is forever home and at rest. We are better for having known him. 🌿

Tri-state Ag Tour

— by Thomas Pike, IR-4 Assistant Coordinator, Entomology and Van Starner, IR-4 Assistant Director, Research Planning and Outreach



On June 20th, representatives from IR-4 traveled by a 55-seat bus from the Greenbelt train station of the D.C. Metro, hosting a contingent of EPA employees, to a number of farms and research sites on a grand Tri-State Agriculture tour. For many, it was their first time seeing certain crops or farming strategies that they may only have read about or had only a passing familiarity. For everyone involved, this tour provided a unique opportunity to interact with farmers and researchers who are directly impacted by their work.

After an early start, the first leg of the trip took us to Newark, DE, to visit the USDA/ARS Beneficial Insects Introduction Research Lab on the University of Delaware campus. This research lab, headed by Kim Hoelmer, acts as a quarantine facility for holding exotic predators and parasitoids (as well as their invasive prey) that are intended for use in classical biological control

programs. Classical biological control involves controlling a pest through the use of predators and/or parasitoids from the native range of the pest and introducing them to control the problem. However, the quarantine and testing process prior to being able to perform releases is extensive, as releasing non-native species into a new environment can have unintended consequences.

The lab is working to find solutions to a number of pests in both agricultural and forest ecosystems, such as brown marmorated stink bug, spotted wing drosophila, emerald ash borer and the newest invasive pest, spotted lanternfly. Tour attendees were rotated through several stations where we were given an overview of the lab's goals, shown the rearing facilities and the quarantine facility itself.

The next stop on the tour took us further north into Lancaster County, PA, to Cedar Meadow Farm near Holtwood and the Susquehanna River. During lunch, provided by the Lancaster Burger Company, attendees were able to watch Steve Groff's neighbor, an Amish farm owner, cut and bale alfalfa using a team of horses. Following lunch we accompanied Steve on a wagon ride tour of his farm. At this point, the darkening sky began to produce the



Steve Groff's neighbors harvesting and baling alfalfa

first drops of rain; nevertheless, we soldiered on and continued with the tour. Steve's farm employs two strategies that he sees as critical to his success. The first is the use of a permanent cover cropping system. Cover crops are useful for preventing soil erosion but are also a great way to provide soil nutrients, suppress weeds and either repel pests or attract their predators. All of these things decrease inputs that would otherwise be necessary such as fertilizer and pesticides. The second (and far less conventional) strategy is no-till farming. While no-till farming isn't new, the scale and length of time that Steve has been employing this strategy is



An example of a no-till field. Note, the previous crop has been rolled over

certainly unique. Several fields haven't been tilled in 25 years! Instead, the cover crop is simply rolled over and the cash crop planted (including pumpkins, butternut and other varieties of squash, melons, etc.). Steve attributes his success to these two strategies and it's hard to argue with the results. While on the farm, we also got a chance to see field

border plantings that encourage pollinators and other beneficials, edible-podded peas, dry bulb onions, and hoop house tomatoes, including a discussion about whether or not a hoop house is

continued on next page

considered a greenhouse. Having successfully dodged any significant rain, we disembarked from the wagons and continued south.

Our final major stop was at Hopkins Produce near Aldino, MD. While playing with a very friendly farm dog named Shelby, Dave Hopkins highlighted the various crops grown on the farm, showed us his small hop yard (construction of a brew pub on the



farm property is in the works!), and answered questions about his pest management programs and pesticide use. Sweet corn, tomatoes and various cucurbit crops are the mainstay for sale at their produce stand, which unfortunately opened a week or two after our visit. The main draw for us at Hopkin's was Dave's son's burgeoning barley malting business. We were given the

opportunity to visit the malt house and were walked through the malting process from start to finish. Of particular interest was the need for disease-free barley grain, and they discussed the need for disease-resistant varieties and fungicide use, especially for head scab. Bidding Dave and Shelby farewell, the tour moved on with a stop at Brad's Farm Market in Churchville, MD, where many browsed and purchased produce, while others learned about their farm operation with an impromptu tour/discussion about their hoop house tomatoes, other vegetable crops, ornamental plants and strawberries.

After all were satisfied with their fresh produce purchases, we proceeded to the Water's Edge Events Center in Belcamp, MD, for a dinner buffet looking to share additional thoughts and observations about the unique farms and practices seen today. Once finished with food, refreshments and a stroll out the 100-yard-long pier, attendees were returned on the coach to the Greenbelt metro station to allow those from the EPA to depart for home...Just as the skies opened up and soaked everyone. 🌿



Inspecting the malting barley

Vegetable Award Recognition



Alvin Simmons (l) and Amnon Levi examine a watermelon plant. Photo by Taaliah Campbell.

Dr. Alvin M. Simmons (Interim Coordinator for USDA-ARS Minor Use Pesticide Program) and collaborators were named the "American Society for Horticultural Science Outstanding Vegetable Publication Award" winners for their research paper Amnon Levi, Alvin M. Simmons, Laura Massey, John Coffey, W. Patrick Wetcher, Robert L. Jarret, Yaakov Tadmor, Padma Nimmakayala, and Umesh K. Reddy; 2017; Genetic Diversity in the Desert Watermelon *Citrullus colocynthis* and its Relationship with *Citrullus* Species as Determined by High-frequency Oligonucleotides-targeting Active Gene Markers; J. Amer. Soc. Hort. Sci.

142(1):47-56). The award was in recognition of the most outstanding paper on vegetable crops published by the Society in 2017. The team was recognized at an awards ceremony on July 31, 2018 at the 115th American Society of Horticultural Science Annual Conference in Washington, DC. The results of the research are useful for breeding programs working to enhance disease, pest, heat, or drought resistance in watermelon cultivars. 🌿

We have launched!!! After much discussion, input, change of direction and stick-to-itness, the IR-4 Project has launched its new website. The Website Committee, consisting of Tammy Barkalow, Jerry Baron,



Michael Braverman, Krista Coleman, Sherri Novack, Cristi Palmer, Mika Tolson, John Wise and, earlier in the project, Karl Malamud-Roam, was diligent at attending conference calls, providing design suggestions, and making decisions regarding direction and scope. Initially, the project was bid out to three advertising agencies, whose bids were all many thousands of dollars, topping out close to the cost of 27 field trials. Realizing this and the fact that IR-4 had not received an increase in funding for many years, the Committee sought to go in a more affordable direction, one that would have less impact on the entire Project program.

The next direction was to approach designers at Rutgers University School of Environmental and Biological Science (SEBS) who would be able to complete an update for about the cost of one field trial. The only caveat was the SEBS Dean had just inquired of them to redesign his website and

his site would take precedence over IR-4's; and we were already many years into the redesign.

Soon after this decision, Sherri Novack received a "See our new Website" email from Meister Media. She approached them to ask about their costs and was surprised how willing they were to work with IR-4.

Around the same time as this committee was seeking alternatives, Cristi Palmer, IR-4's Environmental Horticulture Manager, received a grant to develop a website for Protecting Pollinators (protectingbees.njaes.rutgers.edu). Funded through a NIFA SCRI Grant, Cristi reached out to Meister Media who gave a reasonable price quote for developing a responsive design with a new visual identity for the Protecting Pollinators site. She and the team of Yu-Han Lan and Amy Abate began creating the bee website from scratch using the WordPress platform. They were well into completing the site when Cristi recommended Meister Media for the IR-4 web redesign. One of the breakthroughs was the ability for WordPress to house the current IR-4 database content through wireframes.

After a reasonable quote for the now scaled-down IR-4 website redesign, Meister Media designers began the task of making the busy, overcrowded IR-4 website into a simpler more user friendly design. As designs were made available, the Website Committee members, along with those interested in providing input from the IR-4 Food, EnvironHort, and Biopesticide programs, met to discuss the designs and helped the designers understand how users of the website might navigate through it. This took many iterations, but soon the design came together.

Those who contributed to moving former content to the new site and

developing new content to engage current and new users were: Amy Abate, Krista Coleman, Nick Drost, Shiayi Huang, Yu-Han Lan, Karl Lindauer, Sherri Novack, and Cristi Palmer.

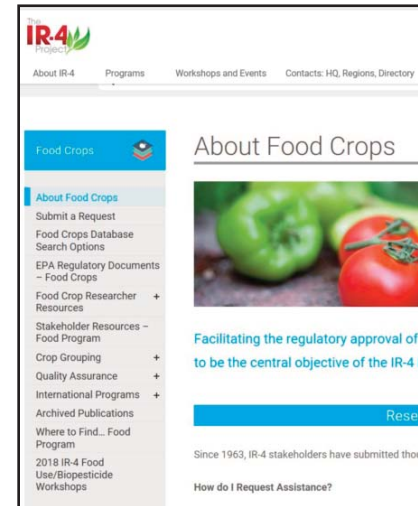
Prior to launch, the Website Committee sent out emails for more people to look at the redesign and provide feedback. People who had not been on the Website Committee sent comments and suggestions. Several people provided helpful input including: Susan Bierbrunner, Megan James, Marylee Ross, Van Starner and Mika Tolson. Once the input was incorporated, the site was launched on June 28, 2018.

Team members felt there were different uses within each of the programs, so each program's pages were designed to meet those uses.

Food Crops
The navigation of the databases in the Food program has stayed much the same as the previous site. The **Food Crops** landing page has a link in the side bar

New Webs

— with contributions from Cristi Palmer, IR-4
Krista Coleman, IR-4



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ite for IR-4

IR-4 Environmental Horticulture Manager, & IR-4 Program Assistant



that takes you to a **Where to Find** page that includes links to commonly used tools. Committee members and other users of the Food Crops pages felt there should be navigation for **Researchers, Growers, and Extension Personnel** similar to the pages in the EnvironHort Program, so pages were added according to those groups' uses.

EnvironHort Program

For the EnvironHort Program, Cristi and her team completely revamped the flow. The first stop, until a user bookmarks their favorite well-used page, is the main landing page for the EnvironHort Program (<https://www.ir4project.org/ehc/>). This page has an overview of the three main areas (Registration Support, Invasive Species, and Pollinator Protection) and links to the various types of content on the site. In addition to moving the previous content and giving it a facelift, the team added content and tapped into new presentation styles

available with the new platform. For example, instead of providing static links to pdfs of our EnvironHort research project summaries, each one is now represented as a post containing the abstract so users can decide to download the

full pdf summary.

The flow for users is very different from the old site. A hierarchical flow was created to organize content based on the resources most highly used by different user groups (growers, researchers, extension educators, and registrants). There are also links for **Grower Needs, Biennial Workshop, Research Summaries** and **Search the Database**. If you are ever in doubt where to find information, you can search for it in the bar just below the main menu or check out the **Where to find...** tab.

Grower Resources contains guidance on interpreting the research data presented throughout the site along with a section containing the Research Summaries.

Researcher Resources contains the Research Selection Portal, an area to search and view Protocols, information on equipment options for small plot experiments, guidance for submitting Research Reports, and a section on how to Acknowledge IR-4 in presentations and documents.

Extension Resources contains Downloadable Literature, Project Information Sheets (overviews of research projects and their status), Program Presentations, slides/presentations that can be downloaded and inserted into extension presentations, and a

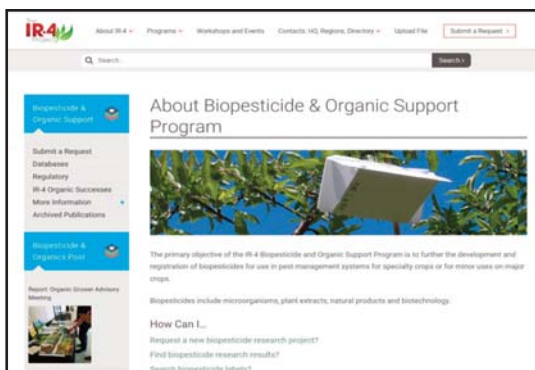
section on how to Acknowledge IR-4 in presentations and documents.

Registrant Resources contains the annual cycle and guidance on registrant related activities during this cycle. It also contains links to protocols and how to Acknowledge IR-4 data in presentations and documents.

Biopesticide & Organic Support

If you are looking for Biopesticide and Organic Support information regarding trials, current requests, labels, and regulatory projects you can find it in the **Databases** on the sidebar in this respective section of the site. Here, you can also **Submit a Request** for research on a pest that has been bothering you or those you know! The **Regulatory** option on the side bar will allow members of the public sector to fill out a form for assistance with registration of new biopesticide products. Content from these pages will be integrated into the Food Crop and EnvironHort pages after the Fall Workshops to reflect the new Integrated Solutions approach that was announced in May.

The most important thing about the new site is it is a "Living Site" and is easily changed. If you find something in need of adjusting, please contact Sherri Novack at novack@njaes.rutgers.edu or 732.932.9575 x 4632.



Let us Know...

Please visit the site at ir4project.org and let us know what you think. 🌱

Concluding the STDF Capacity Building Work, Success, Lessons Learned, and Going Forward

— by Daniel Kunkel, IR-4 Associate Director; Michael Braverman, IR-4 Program Manager; and Jason Sandahl, USDA Foreign Ag. Service

IR-4 involvement in international harmonization of pesticide residues enables IR-4 to develop additional data, saves resources and promotes trade for US growers. Working cooperatively, IR-4 can leverage other countries' contributions to reduce specific costs in the United States. For example, IR-4 has been working in cooperation with Canada for over 15 years on several projects annually. This partnership has achieved great savings (estimated at \$500,000 per year) to IR-4's research program. More importantly, the cooperative projects usually open up access allowing US growers to export their produce to the cooperating country(s). It is IR-4's vision that, at the end of these projects there will be a global network of capable minor use programs that can partner, when appropriate, with IR-4 to address domestic and international grower needs. This cooperation has helped many domestic crops and in some cases it has helped fill in extrapolations with actual data.

The global residue data generation projects, supported by the Standards and Trade Development Facility (STDF), started three years ago (see IR-4 Newsletter article winter of 2014) in Asia, Latin America and Africa. These countries held the objective of generating pesticide residue data needed to establish Codex MRLs. These projects, aimed to improve the technical expertise in pesticide residue data generation, review and

interpretation, as well as explored ways to better support minor-use crops, enabled partner countries to contribute to the Codex MRL-setting and adoption process, and strengthened national pesticide residue monitoring programs.

These projects trained participants in conducting GLP pesticide residue field trials, established committees to provide administrative and technical support, and also provided assignment of responsibility for making project selections. The second year encompassed the initiation of the studies with actual GLP field trials and analytical work. The final year's data was collated into reports and submissions were made to the JMPR and local regulatory authorities.

Now that many of the projects have come to completion, how did they do?

The first region to start work was the Association of South East Asian Nations (ASEAN). They submitted studies with spinetoram on mango and lychee from Thailand to JMPR in 2016 and Codex MRLs are now established. ASEAN also did studies with the pre-mix of azoxystrobin and difenoconazole on dragon fruit in Indonesia and Vietnam. That study was also submitted to JMPR in 2016 and Codex MRLs are now in place. ASEAN similarly did studies with pyriproxyfen on mango where Malaysia and Singapore collected field samples and Singapore

conducted the laboratory analysis. The Philippines, Malaysia and Brunei also cooperated on a study with pyriproxyfen on papaya. These pyriproxyfen studies have been submitted to JMPR and are expected to be reviewed later this year with the hope that Codex MRLs will be established in 2019.

In Latin America, Colombia finished a study with spinetoram on avocado that was submitted to JMPR in 2016 and Codex MRLs have been established. They also conducted pyriproxyfen studies in Panama on pineapple while Costa Rica and Guatemala cooperated in a study on banana. These reports have been submitted to JMPR and are expected to be reviewed in 2018 and hopefully will have Codex MRLs in 2019.

In Africa, Ghana, Uganda, Kenya, Senegal, and Tanzania are completing a study with sulfoxaflor on mango. Those countries are working hard to make a December 2018 submission to JMPR.

As a study aside from STDF, a project in Egypt developed data for azoxystrobin plus difenoconazole on guava, which was also submitted in 2016. The JMPR noted a slight difference in the label compared to the residue data and JMPR are reviewing the new label for consistency in 2018. Hopefully, Codex MRLs will be established in 2019.

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Lessons Learned and Challenges.

There were also challenges such as allocating funds in a timely manner to get the research done. In many cases, there were changes in personnel who then need to be trained and get up to speed on doing GLP residue work, which resulted in a loss of continuity. Having support at senior levels was also critical. In many cases, the personnel were not used to the high degree of documentation required for GLP research or having oversight by Quality Assurance.

In December of 2017, seventeen senior government officials signed a joint statement acknowledging the productive work of the World Trade Organization's (WTO) STDF in building knowledge and capacity for developing countries in the area of pesticide MRLs. U.S. Secretary of Agriculture, Sonny Perdue, issued the following statement in response to the joint statement signed at the 11th WTO Ministerial Conference

in Buenos Aires: *"USDA applauds the joint statement on pesticide MRLs issued today at the WTO ministerial in Buenos Aires. The 17 signatory countries have come together to recognize that farmers worldwide must be able to access the full range of available tools and technologies in order to remain productive and competitive. But too often, that access is hampered by non-scientific regulatory barriers."*

Marlynn Hopper from the office of STDF of the WTO commented, *"We were delighted to see this reference to the Standards and Trade Development Facility (STDF) in the Joint Statement from MC-11, signed by 17 governments. It's wonderful to see this concrete illustration of how the three STDF MRL projects in Africa, ASEAN and Latin America - with USDA, IR-4/Rutgers University and the many other public and private sector partners - helped to build*

knowledge and capacity on pesticide MRLs in developing countries, and also played a catalytic role in encouraging more regional and international collaboration on this topic."

Going forward, Phase 2.

The Global Minor Use Workshops have illustrated the continued need of such work and the Global Minor Use Fund has provided more opportunities for cooperative work. For example, in Latin America there are projects being initiated to address several of the tropical priorities from both of the Global Minor Use Workshops. These include: spinetoram on banana, papaya and pineapple to control fruit fly and some lepidopteran insects; trifloxystrobin plus fluopyram on papaya to control anthracnose; and oxathiapiprolin on cacao bean (cocoa) to control pod rot. The countries contributing to this work include: Bolivia, Costa Rico, Colombia, Ecuador, Panama and Peru. 🌿

Table 1. Studies resulting from the STDF grants provided to Asia, Latin America and Africa

Study	Countries participating	Status
spinetoram on lychee	Thailand	Codex MRLs established in 2018
spinetoram on mango	Thailand	Codex MRLs established in 2018
spinetoram on avocado	Colombia	Codex MRLs established in 2018
azoxystrobin plus difenoconazole on dragon fruit	Indonesia and Vietnam	Codex MRLs established in 2018
azoxystrobin plus difenoconazole on guava	Egypt	Codex MRLs awaiting re-review with new GAP on Label
pyriproxyfen on papaya	Philippines, Malaysia and Brunei	Codex MRLs expected in 2019
pyriproxyfen on mango	Malaysia and Singapore	Codex MRLs expected in 2019
pyriproxyfen on pineapple	Panama	Codex MRLs expected in 2019
pyriproxyfen on banana	Costa Rica and Guatemala	Codex MRLs expected in 2019
sulfoxaflor on mango	Ghana, Uganda, Kenya, Senegal, and Tanzania.	Expect to submit to JMPR in late 2018

'A global partnership that supports developing countries in building their capacity to implement international sanitary and phytosanitary (SPS) standards, guidelines and recommendations as a means to improve their human, animal and plant health status and ability to gain or maintain access to markets.'

Washington State Pest Control Tour

From July 23 through the 26th, IR-4's Stephen Flanagan, Michael Horak, Sherri Novack and Thomas Pike attended the Washington Pest Control Tour.

Day one took attendees on tours of perennial crops of the Yakima Valley, starting with a visit to the Olsen's Brothers farm to see hops, blueberries, apples, cherries, and pears. After lunch, attendees saw spearmint, peppermint and a still that processes the mint into oils. The last stop of day one included viewing a carrot harvest.



Day two began with vegetable and seed crops of the Columbia Basin, then led to potato packing and harvesting, which was followed by a visit to the South Columbia Basin Irrigation District to discuss water and its value to the area.



Lara Kaminsky from the Cannabis Alliance provided a discussion of various cannabis products, which are legal in Washington State. However, no samples were shared.

The last stop of day two was at Schreiber & Sons farm, where Alan grows a number of specialty crops. The famous farm party and hog roast followed the farm tour.

On the last day of the tour, IR-4 Commodity Liaison Committee vice chair, Todd Scholz, joined the tour to discuss lentils, dry peas and chickpeas (pictured below). Todd



enjoyed reminding attendees that the United Nations declared 2016 the International Year of Pulses (IYP 2016). The hope of the IYP 2016 was to position pulses as a primary source of protein and other essential nutrients. Challenging tour goes to the Half Cup Habit of eating one and a half cups of pulses a week, Todd provided half cup measuring utensils in goody bags, along with other materials about pulses and their health benefits.

The tour was packed with information about producing specialty crops in this region of Washington and the various challenges farmers face due to water shortages and pests that impact their crops.

The sponsors of the tour were: Washington State Tree Fruit Research Commission, Washington State Potato Commission, Washington Friends of Farms and Forests, USA Dry Pea and Lentil Association, Washington Asparagus Commission, Washington Hop Commission, Washington Winegrowers and Washington Alfalfa Seed Commission. Many thanks to Alan and the sponsors for a great tour. 🌱

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Editor: Sherrilyn Novack
IR-4 Public Relations and Communication Manager, 732.932.9575 x 4632, novack@njaes.rutgers.edu

Newsletter Committee:
North Central Regional Director,
John Wise, 517.432.2668.

Western Regional Assistant Field Coordinator, **Stephen Flanagan**, 541.688.3155.

Southern Region
USDA-ARS Interim Minor Use Coordinator,
Alvin Simmons
843.402.5307
Research Administrator II
Robin Federline 352-294-3983.

Commodity Liaison Committee member,
Mike Bledsoe, 407-493-3933, Village Farms.

IR-4 HQ, 732.932.9575
Research Assistant, **Krista Coleman** x 4631
Fungicide Coordinator, **Kathryn Homa** x 4604
Associate Director, **Dan Kunkel** x 4616
Environmental Horticulture Manager, and
Technical Copy Editor **Cristi Palmer** x 4629
Technical Coordinator/Entomology,
Ken Samoil x 4614
Assistant Director, **Van Starner** x 4621

Totoncaxaxo—Ancient name for Begonia

— by Cristi Palmer, IR-4 EnvironHort Manager

Plant information

Ever heard of *Totoncaxaxo coyollin*? With different documentation



habits and the speed and persistence of modern communications, this may have been the name we know for one of the most common annuals in cultivation, begonia. This

was the name Franz Hernandez, a monk in Mexico, gave to begonia in 1557. However, in 1690 the French botanist Charles Plumier described begonias officially and named this genus after Michel Begon, a medium level administrator within the French government, who was an avid plant collector and catalogued the plants growing in the West Indies while posted in the French Antilles. He later sent Plumier and Joseph Donat Surian on a trip to collect plants and bring them back to France. Out of gratitude, Plumier coined the Latinized term begonia for this “unnamed” plant genus, thus contributing to the scientific



community and abandoning the earlier Mexican name which had not been scientifically documented in Europe.

The modern cultivated begonia cultivars began in the early 1800’s when additional plant explorers discovered new begonia species throughout the tropics and subtropics in Central & South America, Africa, and Asia. Horticulturists then crossed several different species to develop new flower colors, double flowers, and showier foliage. Plant exploration continued throughout the 1800’s, and Britain’s Richard Pearce discovered a new species, *Begonia veitchii*, in Cuzco, Peru and introduced it in 1886. Worldwide, there are currently more than 1700 recognized species and numerous interspecies hybrid lines with thousands of named cultivars.

Economics

According to the USDA NASS Census of Horticulture 2014, begonias in the US have a wholesale value of \$112M and are the fifth highest in terms of units (containers & flats) sold with more

than 39 million produced annually.

Main disease & pest problems

Begonias have several main disease problems including botrytis blight, bacterial blight from *Xanthomonas capestris pv begoniae*, powdery mildew, foliar nematodes, root rots caused by *Pythium* and *Rhizoctonia*, and numerous viruses of which some are spread by aphids and thrips.

Begonias are also plagued with several insect and mite pests: aphids, thrips, whiteflies, cyclamen mite, broad mite, mealybugs, black vine weevil, and Florida red scale are the most common.

IR-4 research

Although, in the early 1980’s IR-4 screened products for efficacy against botrytis and powdery mildew infecting begonia, all research IR-4 has sponsored since 2000 has focused on crop safety. Forty products were screened in 148 trials. Begonia exhibited no to slight injury in most of these trials with the exception of Dimension, Tourney, and Trinity. 🌿



Tolerance Successes

May - July 2018

The trade names listed here 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: May 23, 2018
Clopyralid Trade Name: Stinger
Crops: Pome fruit group 11-10, Radish roots, Stone fruit group 12-12, Low growing berry subgroup 13-07G, Stalk and stem vegetable subgroup 22A, Brassica leafy greens subgroup 4-16B, Leaves of root and tuber vegetable group 2, Chinese broccoli, Kohlrabi
PR#: 03624, 10437, 11681, 11682, 12085, 12086, 12087, 12088, 12089

Federal Register: May 24, 2018
Pydiflumetofen Trade Name: Miravis
Crops: Cucurbit vegetable group 9
PR#: 11156, 11157, 11158

Federal Register: June 7, 2018
Acequinocyl Trade Name: Kanemite
Crops: Guava, Tropical and subtropical small fruit with inedible

peel subgroup 24A
PR#: 08600, 08602

Federal Register: June 26, 2018
Fluroxypyr Trade Name: GoldSky
Crops: Teff
PR#: 10807

Federal Register: July 10, 2018
Pyroxsulam Trade Name: GoldSky
Crops: Teff (revised tolerances)
PR#: 11940

Federal Register: July 23, 2018
Flonicamid Trade Name: Beleaf
Crops: Clover (regional registration in the Pacific Northwest), Cottonseed subgroup 20C, Head and stem brassica vegetable group

5-16, Brassica leafy greens subgroup 4-16B except radish tops, Radish tops, Leaf petiole vegetable subgroup 22B, Leafy greens subgroup 4-16A except spinach, Celtnuce, Florence fennel, Kohlrabi
PR#: A9943, 12098, 12099, 12100, 12101, 12102, 12103, 12104, 12105, 11247

Federal Register: July 25, 2018
Florasulam Trade Name: GoldSky
Crops: Teff
PR#: 10807

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IR-4 Headquarters,
 Rutgers, The State University
 of New Jersey
 500 College Road East
 Suite 201 W
 Princeton, NJ 08540



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