

Ornamental Horticulture Workshop & Tour

— by Cristi Palmer, IR-4 Ornamental Horticulture Manager

The 2013 Ornamental Horticulture Workshop, held in Coconut Grove, FL, embarked on a new way to establish priorities for the 2014 to 2015 biennial research cycle. And it was the best way yet!

The workshop started with an optional tour where about 2/3rd of attendees boarded a bus at 7:30 am. For the first stop, we visited the USDA-APHIS-PPQ Inspection Station at the Miami International



Inspecting cuttings at the USDA-APHIS PPQ Inspection Station. *Photo by Mika Pringle-Tolson*

Airport. The director, Pedro Juan Millan Garcia, was a gracious host outlining the functions of the Inspection Station to ensure propagative materials are free of known and unknown arthropod, microbial and mollusk hitchhikers.



Acres and
acres of
potted plants
at Costa
Farms. *Photo
by Brian
Eschenaur.*

The second stop included lunch and a tour of the landscape at R.F. Orchids; many folks browsed the retail displays and took home living souvenirs. The third and final stop was a fast moving dash through Costa Farms; a quick pace to ensure we were under cover when a torrential downpour overtook us!

During the first 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. Next we discussed the pros and cons for conducting efficacy or crop safety research on 36 current and potential new projects across entomology, pathology and weed science. To have these discussions flow smoothly, IR-4 staff created new handouts: Project Sheets summarizing the need, research and registrations to date, and 15 Product Lists outlining the key features of tools currently available for certain diseases and pests. The 31 project sheets were created to cover 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



Orchid at R.F. Orchids. *Photo by Cristi Palmer*

potential research avenues during the workshop. The moderators for each discipline included: Cristi Palmer (Pathology), Michelle Samuel-Foo (Entomology), and Edith Lurvey (Weed Science). At the end of the day after the relative merits of each project were captured on poster-size paper and fastened to the walls, a Sticker Caucus was held so that workshop

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Executive Director Notes

Dear Friends,

By the time you read this it is likely that everyone will be starting their year-end activities including reports and preparing for the holidays.

Not much has changed in IR-4 funding. We are operating on a broad federal government Continuing Resolution. Since 2011, IR-4 funding has been reduced by 9.5% while at the same time expenses have skyrocketed. The result is a leaner, smaller program with fewer resources going toward new research. Hard decisions were made in not replacing some vacant positions and scaling back research facilities.

Going forward, Congress has a lot of issues to reconcile before they deal with a fiscal year 2014 Agriculture Appropriation Bill. It's anyone's guess when and if a consensus funding agreement will be reached. However, another round of Sequestration cuts will hit in January unless some agreement is forged.

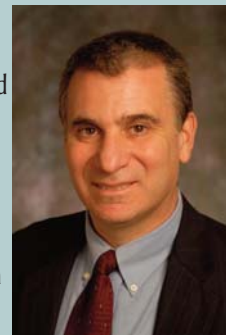
The government shutdown in October resulted in lost research due to the furlough of USDA-ARS scientists. This jeopardized at least four field trials that need to be repeated. The shutdown also delayed some critical review decisions by EPA.

We want to thank everyone who has completed the IR-4 Strategic Planning survey. We have had nearly 500 responses. This is well above the level survey experts classify as good. We recognize that those multiple reminders were annoying but they did the job! Now the fun part begins; the process of going through the responses and drafting up the next Strategic Plan. Our goal is to get a DRAFT plan out for review and comment in first quarter 2014. Thus everyone will have another opportunity to provide input to influence the future direction of IR-4.

I also want to thank everyone who participated in research priority setting for 2014. The cornerstone events were the IR-4 Food Use and the Ornamental Horticulture Workshops. Both of these workshops were well attended with significant discussion on the specific projects. My personal opinion was that both workshops were the most successful in memory.

It has been a great year celebrating IR-4's 50th anniversary. We've had many events to recognize this milestone. One remaining task is the release of a special publication detailing IR-4's 50 years of sustained success. We anticipate this will be published by the end of 2013.

All the best,
Jerry



Workshop

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attendees could vote for the research projects IR-4 should undertake during 2014 – 2015. During the second morning of the workshop, the outcomes for each discipline were projected and we finalized the research priorities after further conversations.

The Entomology Projects include Thrips Efficacy, Armored Scale Efficacy, New Product Crop Safety. The Pathology Projects include Botrytis Efficacy, Leaf Spot &

Anthracnose Efficacy, New Product Crop Safety. For Weed Science, the Pre-Emergent Liquid Herbicide Crop Safety will be focused on Tower EC and Dimension 2EW, while the Ornamental Grass herbicide Crop Safety will screen Dimension 2EW, Gallery, and Pendulum 2G.

After the priorities were finalized, the group talked about IR-4 protocols and reports and ways to improve them for the upcoming year. The latter topic was led by Mika Pringle-Tolson. Improvements for protocols include more explicit

use directions for timing and special parameters for testing including disease or pests populations. For reports, the importance of including researcher observations and conclusions was highlighted along with ensuring batch numbers for tested registered and experimental products are recorded.

All in all, the 2013 IR-4 Ornamental Horticulture Workshop was successful in fostering good discussions and finalizing research priorities. 🌱

Ch-Ch-Ch-Chia: Popular Holiday Gift Becoming an Important Specialty Crop

— by Kathryn Homa

It's the beginning of the holiday season: snowflakes are fluttering in the wind, children are caroling in the distance, twinkling lights are outlining houses in the neighborhood and gingerbread cookies are baking in the oven. As you sit down to relax with your cup of hot cocoa to watch A Christmas Carol, you realize that a part of the holidays is missing. But what could it be? Suddenly, you hear a familiar commercial: "Ch-ch-ch-chia! Chia Pet...the pottery that grows! It's fun and easy. Soak your Chia, spread the seed, keep it watered and watch it grow! Grow a ram, a cat or a puppy! Chia Pet is available at all major retailers! Makes a great gift!" Strangely, after that commercial, you say to yourself "the holidays must be close!"

Ah, the Chia Pet...a terracotta figurine in the shape of an animal, person, cartoon or tree that contains a grooved area where chia seeds are planted. When sprouted, the chia resembles fur or hair. The Chia Pet is well-known. It's been around since 1977 and every holiday season, approximately 500,000 Chia Pets are sold.



However, the "chia" of the Chia Pet has been around much longer.

Chia (*Salvia hispanica*), also known as "lime-leaf sage" is an annual herb in the mint family (Lamiaceae formerly Labiatae). At maturity, plants reach approximately 1 m tall, contain opposite, serrated leaves that are 4 to 8 cm long and 2.5 to 5 cm wide and clusters of blue, purple or white spike flowers. Cream to grey seeds are oval in shape and 2 mm long by 1 mm wide. Thousands of years ago, chia was a major cultivated crop along with corn and beans. It was an important source of food, medicine and oil in Mesoamerican culture. Cultivation was reduced after Spanish colonization. However, the crop is still cultivated in Argentina, Australia, Bolivia, Columbia, Guatemala, Mexico and Peru. Chia has also reportedly been cultivated in Southeast Asia. Because of its high oil and nutrition content and recent breeding efforts to alter photoperiod sensitivity, chia has become a "new" specialty crop in U.S. Some are even describing chia as the 'it' food of 2013.

Once considered a novelty product, chia seeds were mainly sold in health food stores. However, recently, there has been an increasing interest in this crop due to the budding interest



Original Chia pet puppy.
www.chiapet.com

in nutritional foods and preventative medicine. Grown commercially for its seeds, this specialty crop is high in omega-3 fatty acids, soluble fiber and antioxidants. The seed and seed products including the oil are known to have one of the highest sources of omega-3 fatty acids compared to canola, soy or flax. Consumption of omega-3 has been shown to provide many health benefits including improved functioning of the immune and nervous system and a lower risk of heart disease, cancer and stroke. Chia is currently sold as a dietary supplement. Seeds are used in snack foods, beverages, sauces, salads, soups, cereal and flour. Chia sprouts are commonly consumed in salads and sandwiches. Chia is also used in the animal feed industries, including the equine industry. Because of these many benefits, the market for chia is expected to grow over the next several years.

Chia is currently not in a crop group. This means that residue trials must be conducted on chia in order to obtain a pesticide tolerance. However, chia is being proposed as a member of the revised Seed Spice Subgroup 19C (seed, seed pods, arils). This means that in the future, residue trials must be conducted on the proposed representative commodities celery, seed or dill, seed in order to obtain a pesticide tolerance on chia. For more crop grouping information please contact the Crop Grouping Manager, Bill Barney, at Barney@aesop.Rutgers.edu. 🌱

Both photos were found at <http://www.uky.edu/Ag/CDBREC/introsheets/chia.pdf>

ir4.rutgers.edu

Excellence in IPM Award

The Entomological Foundation is pleased to announce that Doug Walsh is the recipient of the 2013 Award for Excellence in Integrated Pest Management. He received the award at the 61st Annual Meeting of the Entomological Society of America in Austin, TX on November 10, 2013.

This award, which is sponsored by Syngenta Crop Protection, is based on outstanding contributions which have a direct relation to integrated pest management (IPM). Dr. Douglas B. Walsh received his BS in biology from the University of California, Santa Cruz in 1985 and his PhD in entomology from the University of California, Davis in 1998. Doug was hired as an assistant professor at Washington State University in 1998. He is currently a professor of entomology at WSU, holding a 50% organized research/ 50% extension academic appointment. Doug is the research director of the Environmental and

Agricultural Entomology Laboratory located at the Irrigated Agriculture Research and Extension Center in the Yakima Valley near Prosser, Washington. He is the extension integrated pest management coordinator for Washington State and the Washington state liaison representative to the USDA IR-4 Program. Doug has an extensive and varied IPM research and extension program, assisting regionally important commodities including hops, alfalfa, grapes, mint, and livestock. Doug also directs environmental impact studies on alfalfa leafcutting and alkali bees, the key pollinators of alfalfa produced for seed. Doug's efforts in IPM have resulted in the reduction of over 100,000 pounds of insecticide use in the Pacific Northwest annually. Doug serves on various advisory boards including the National Alfalfa and Forage Alliance, Salmon Safe, and LIVE (low input viticulture and enology) programs. Doug has



served the Pacific Branch of the ESA as President in 2010, Executive Committee Member (2007- 2009) Nominations Committee Chair (2010- 2011) Representative to the National Awards Committee (2006-2009) and Awards Canvassing Chair (2001-2006 and 2011). Recently Doug was selected to represent the Pacific Branch on the ESA Governing board from 2014 through 2016. Doug accounts his success as a scientist to the mentoring he received from the University of California, exceptional colleagues, hard working staff and graduate students, loving friends and family, and rock solid support from Washington State University and the commodity organizations he serves. 🌱

2014 Food Use Research Plan

—by Van Starnes,
IR-4 Assistant Director

The 2013 IR-4 Food Use Workshop (FUW) was held Sept. 17-18, in Albuquerque, NM. Through a pre-workshop on-line project nomination process, IR-4 stakeholders selected the most important projects for discussion at the workshop. Out of more than 500 researchable projects, about 200 were given at least one "A" nomination and these were the focus of workshop deliberations. This year IR-4 stakeholders selected a total of 46 priority "A" projects to satisfy some of the most critical

pest management needs of U.S. specialty crop grower stakeholders.

Those "A" priorities form the core of the 2014 food use field/lab research program. Upgraded projects (from IR-4 Regional upgrades and Priority Upgrade Proposals) were added to this plan in October. The 2014 slate of residue studies, efficacy/crop safety trials and field trial/analytical laboratory assignments was finalized per discussions between IR-4 regional and headquarters staff at the annual National Research Planning Meeting Nov. 6-7.

IR-4 will continue to fund a small efficacy and crop safety (E/CS) research program in 2014. The primary focus will be on field trials required by product registrants before new uses supported by IR-4 residue studies can be added to labels. If sufficient funds are available, additional E/CS trials will be conducted to address the highest priority needs ("H+" priority) as identified at the FUW.

The complete report of all E/CS trials, FUW Priority "A" projects, upgrades and others added to the 2014 research plan can be found on the IR-4 website homepage by clicking the link "2014 Tentative Schedule Trials." 🌱

Non-Destructive Field Measurement of Pesticides on Fabrics

—by Karl Malamud-Roam, IR-4 Public Health Pesticides Manager

The application of pesticides to clothing, bed nets, and other fabrics has become an increasingly important approach to repelling and killing blood-sucking arthropods over the last twenty years, and IR-4 Project staff are researching novel methods to measure pesticide concentrations on treated fabrics. This is important because, even with modern technology for binding chemicals to fabrics, the concentration and effectiveness of pesticides on treated garments or nets drops with time due to frequent washing and hard use.

Conventional chemical assays can determine pesticide levels with great precision, but destroy treated garments in the process. Bioassays with caged mosquitoes measure effective pesticide levels but are not practical for field use. Since it is generally impossible to determine the concentration of pesticide on fabrics by appearance, texture, or smell, it is critical to develop non-destructive field methods for making these measurements.

IR-4 began work in this area because of a request from the U.S. military for assistance with regulations which prohibit field retreatment of factory-treated clothing, including U.S. military uniforms. While it is considered safe to reapply permethrin up to every six weeks on most clothing for periodic outdoor use, regulators have questioned whether excessive field retreatment of factory-treated

garments could expose wearers to unacceptable skin contact and dermal absorption of pesticide. Thus, changing the labels to allow retreatment will likely require methods to determine if the pesticide levels on garments have dropped to the point where retreatment is needed because of dropping effectiveness, and is also safe. In addition, there are significant questions about whether treated nets continue to function effectively throughout their lifespan, and sensitive non-destructive methods might clarify when a net needs to be replaced.

In addition to bioassays, where the fabrics are exposed to living insects



Permethrin-treated U.S. Army Combat Uniform (ACU)



Insecticide-treated Bed Net

or ticks, other indirect approaches to estimating concentration include tracking the number of washings for a garment, or time in use, as proxy indices for pesticide level.

Unfortunately, data collected on used uniforms indicates that neither of these variables coincides perfectly with pesticide level. Therefore, recent research has also evaluated two other approaches – colorimetry and electromagnetic spectra. Colorimetry refers to color changes when specific reagents are used to react with small areas on the fabric and the color intensity shows the chemical concentration.

Electromagnetic spectra in the infra-red (IR), ultraviolet (UV), or X-ray ranges reflect the atoms or bonds in specific compounds, and may be used to “fingerprint” chemicals, so that the absorption of radiation energy at specific wavelengths can be used to measure concentrations. Because of their rapid bioactivity (killing insects before they can bite), low mammalian toxicity, and durability, pyrethroids are the pesticides of choice for treating

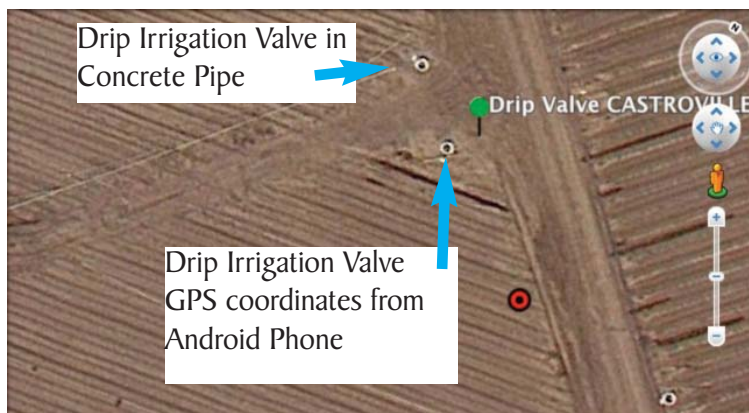
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Using Google Earth to Verify Your GPS

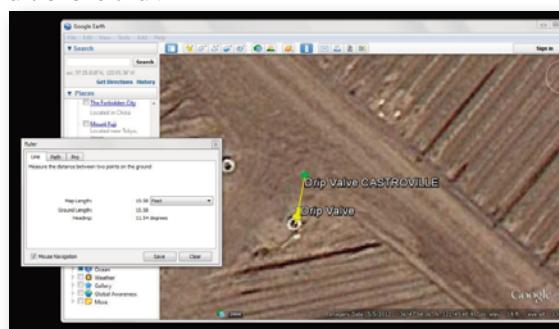
—by Stephen Flanagan, Western Region Assistant Regional Field Coordinator

With the advent of the smart phone and free mapping tools like Google Earth, field researchers have powerful tools for verifying permanent markers and for making detailed plot maps. This Tech update covers using a smart phone to verify your permanent marker with your smart phone.

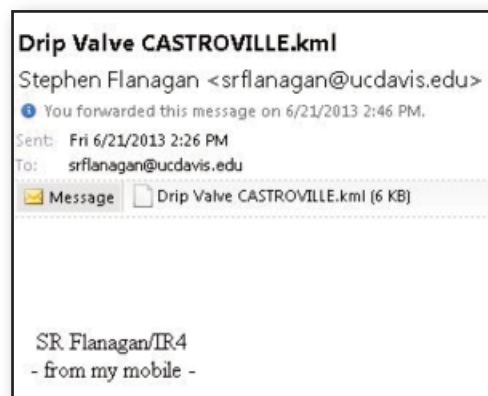
You're standing at a permanent marker and you record this point on your smart phone's GPS app. Now what? How accurate is your smart phone in locating this point? In this example we'll confirm the location of an irrigation valve which was used as a permanent marker for a California artichoke trial.



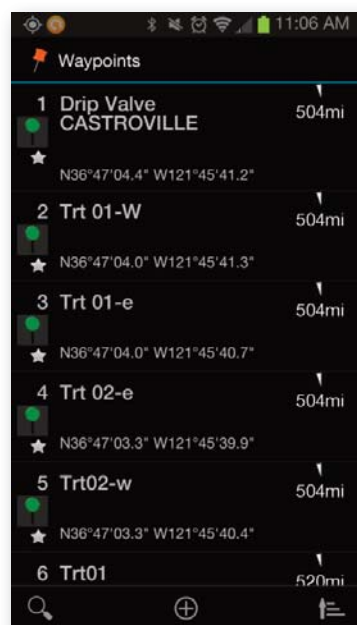
Aerial view of drip valve and GPS waypoint



Using Google Earth to calculate distance



Exported file from phone.



Android waypoint screen.

How close is your GPS reading to your landmark?

What's the actual distance difference? Use the Google Earth ruler selecting the two points and you'll see that the phone coordinates were off by ~16 feet, but clearly close enough for someone to find the valve.

How to send a set of Google Earth coordinates to your desktop computer.

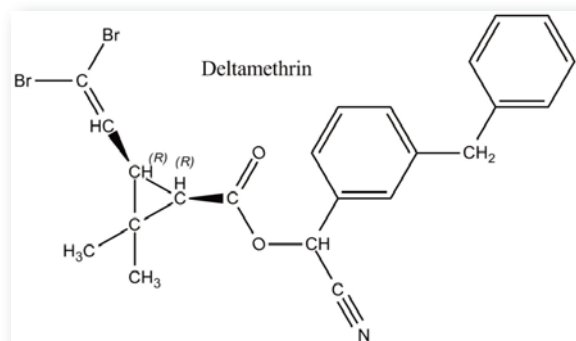
1) Use your phone or gps handheld to record a waypoint located at your permanent marker, here's a screen capture from a Samsung phone:
2) Use the export function to send the way point (#1 in this example) in KML format, usually this is sent via email on a phone, but probably a data stick or

external cable for a handheld GPS.

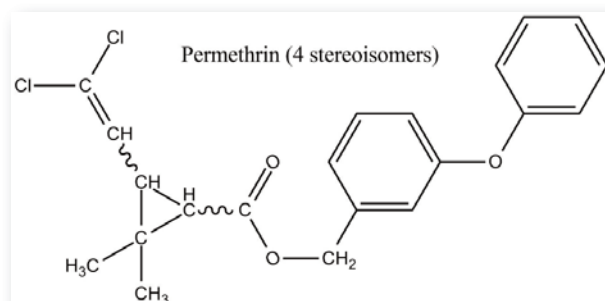
3) The email will have the an attached file of the point you've marked, which when you double click the attachment will ask you to open in Google Earth (note you need to download and install Google Earth beforehand) You should then see a map of your site with this point mapped. At this point use the ruler tool to compare how your GPS coordinates vary from the actual point located on Google Earth, as shown above. For verification purposes several waypoints taken over several hours or different days would give a good idea of how close your GPS is depending on the number of satellites it fixes at any one time.

This information and other GPS-Phone mapping tricks are available at: <http://wrir4.ucdavis.edu/resources/>

Fabrics continued from page 5



Deltamethrin, with Bromine and Cyano group



Permethrin, without Bromine or Cyano group



Hand-held Infra-Red Spectrometer (Agilent Instruments)

fabrics, and the most commonly used are permethrin (used on military uniforms and, increasingly, on civilian clothing and bed nets), and deltamethrin and alpha-cypermethrin, which are used only on nets. While these materials are in the same chemical class and act in a similar manner on insects, differences between the chemicals may be significant in which test methods work best. For example, X-ray fluorescence is very effective for measuring compounds with bromine atoms, such as deltamethrin, but less sensitive for the chlorine atoms in permethrin. Colorimetric methods have been well-validated, on the other hand, for chemicals with the cyano bond in deltamethrin, but have been more challenging for permethrin.

While it may be possible to solve these technical challenges and measure permethrin on fabrics precisely with X-rays or colorimetry, the IR-4 team has worked primarily with hand-held mid-IR scanners. Our initial results have been promising using treated and untreated uniforms, as well as garments that have been treated and then repeatedly washed, and will be presented to the military and CDC soon. In addition, we are beginning to explore the potential of UV fluorescence. While it is not clear whether any of these techniques alone will answer the need for sensitive determination of concentrations of all pesticides on all fabrics, it is clear that the need is significant, and it seems likely that some combination of these

methods will be in operational use in the future. 🌱



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Coffee Berry Borer and M

—by Stephen Flanagan, Western Region

The Coffee Berry Borer (CBB) is a worldwide beetle pest of coffee which until recently had somehow managed to miss the state of Hawaii. In spite of worldwide research efforts the current control standard for CBB is the organochlorine insecticide endosulfan. Endosulfan uses are being phased out in the US and IR-4 would not pursue any projects with this active ingredient. With a confirmed CBB infestation in South Kona on the big Island of Hawaii in 2010, the coffee crop in Hawaii is now threatened and new control strategies are of key importance.

Coffee is currently grown on over 6000 acres on all of the major Hawaiian Islands. This worldwide crop was brought to Oahu in 1813 by Francisco de Paula Marin and the current crop yields 6-7 million pounds of green coffee beans.

The IR-4 project team in Hawaii has been involved in screening trials to evaluate new active ingredients for coffee berry borer control and also conducted Cyazypyr residue trials in 2012. In addition to this work on a new active ingredient, the IR-4 group is currently conducting a re-registration trial for pyrethrin + piperonyl butoxide (PBO) on coffee. Pyrethrin is an organic insecticide (formulated alone without PBO) which has a fit in organic coffee production for the quick knockdown of CBB and other larval pests.

Even with these critical efforts, the outlook and research work needed to find consistent CBB control is fraught with difficulties. (See:

<http://www.ctahr.hawaii.edu/site/CBB.aspx>). Beyond the basic biology of this pest, the IR-4 group exercises care to insure that their research efforts and travel to different islands does not spread CBB beyond the current infestation on the Big Island.

On a recent field visit for one of the many pyrethrin+PBO/coffee field applications, IR-4 University of Hawaii researchers Mike Kawate and James Kam met with Kauai Coffee management personnel to discuss the status of IR-4 projects. The discussion at Kauai Coffee focused on CBB work and growing concerns on Kauai regarding the use of restricted materials such as Gramoxone (paraquat).

Kauai does not currently have a CBB infestation, but Kauai Coffee vice president Wayne Katayama and farm manager Greg Williams expressed their interest and concern about this new invasive pest. Along with discussions about the difficulty of CBB control (the females lay eggs inside the coffee berry which then develop inside the berry, protected from sprays) Mike Kawate explained the difficulty of conducting residue and screening trials for CBB.

Mike has conducted screening work



Weed pressure in coffee field

on numerous materials for coffee pests but the team is currently not conducting efficacy testing until their Kauai pyrethrin+PBO trial is complete. There is a standing quarantine for coffee material originating from Kona, and since any CBB efficacy work would be completed on Kona the IR4 group can't simultaneously work on both islands. The risk of potentially infesting Kauai if the group was working with CBB on Kona is too great.

Like many land grant institutions the University of Hawaii struggles to meet grower needs like the CBB infestation set against the backdrop of budget cuts,



Commercial cooperator Kauai Coffee.

New Challenges in Hawaii

on Assistant Regional Field Coordinator

technical challenges, and for Hawaii the unique logistical challenges related to inter-island travel and quarantines. The coffee, pyrethrin+PBO study was a particularly expensive and challenging study in that the protocol called for a total of ten applications spaced 3-4 days apart.

The reality for Field Research Director James Kam is that each application involved pre-shipping his equipment and test substance ahead of time to another island (The University of Hawaii IR-4 group is based on Oahu), flying in the dark to Kauai, making the application in the early morning and then flying back to Oahu. This work is conducted in sunny Hawaii, but the rigors of field research from seat 4B are a constant challenge for the Hawaii group which also includes Field Research Director Julie Coughlin. The coffee in this particular trial ripened a bit late this season and James' planned ten applications will now stretch into a total of sixteen applications.

If the challenges of CBB and tropical agriculture were not enough, Hawaii and specifically Kauai is facing a rise of anti-GMO sentiment that is embroiling conventional growers. What started as a local anti-GMO ordinance targeting GMO corn seed breeders has spread to an anti-pesticide, anti-conventional agriculture measure.

The county of Kauai passed measure 2491 in mid-October * which calls for a temporary moratorium on the use of GMOs along with pesticide use



Julie Coughlin and James Kam in action.

restrictions. These restrictions include pesticide application buffer zones, notification requirements and mandatory pesticide reporting requirements. Growers like Kauai Coffee do not use GMOs in their operations but their use of restricted materials like Gramoxone would fall under the measure 2491 regulations.

The reach of this local regulation has growers concerned about the loss of valuable crop production tools. In the case of Kauai Coffee the loss of Gramoxone for chemical sucker control would be a significant blow. Kauai Coffee management was anticipating this potential loss when they queried Mike Kawate about other potential compounds which could replace Gramoxone. Mike and the Hawaii team will have their hands full working on projects as complicated as CBB and additional projects such as finding a coffee suckering replacement.

The work of IR-4 is an ongoing effort to maintain tools for US growers like Kauai Coffee and coffee growers throughout the Hawaiian Islands. New invasive pests, and new political challenges like measure 2491 are two pieces of the challenge continuum which faces the IR4 project and its work supporting US specialty crop production.

* At the end of October, the Kauai mayor subsequently vetoed the bill citing potential legal flaws. 🌿



Mike Kawate measuring water.



No GMO signs in Kauai

2013 IR-4 Regional Awardees

IR-4 Southern Region Awards

— by Michelle Samuel-Foo and
Wlodzimierz Borejsza-Wysocki

Technical Service Award:

Letitia S. Adams-Waters (Tish) was appointed in November 1991 by Ms. Yoh Jau, the previous IR-4 Southern Regional Laboratory Research Director. As a chemist in the Florida IR-4 Laboratory, Tish's primary responsibility is residue sample analysis. Tish demonstrates very solid knowledge of analytical methods, possesses great skills in GC, GC/MS, LC/MS/MS and has acquired experience in trouble shooting of these instruments. Additionally, she has responsibilities for monitoring the temperature logs in their lab freezers at UF. She always conducts laboratory work under GLP and SOP requirements and pays full attention to laboratory safety. Tish has attended numerous professional, regional and national IR-4 conferences, trainings, workshops and webinars. Her dedication, hard work and professionalism have been very important to the laboratory at University of Florida and has significantly contributed to both the regional and national IR-4 program.

A native of Miami FL, **Reed Olszack** received his BS in Horticulture from the University of Florida. He has an impressive history working with the tropical fruit industry that dates back to 1976 when he worked as the Tropical Fruits Production Manager for JR Brooks Tropicals in Homestead, Florida, a position he held on to for 20 years. He has served as President of the Tropical Fruit Growers of South Florida (TFGSF) and as a member of the board of TFGSF for 20+ years. Reed also has a long history with

IR-4 as well, having served on the commodity liaison committee (CLC) representing the interests of tropical fruit growers.

In 2009, he moved into the Field research director (FRD) role at the IR-4 field reach center at The University of Florida, Tropical Research and Education Center, in Homestead FL. Reed is clearly an expert on tropical fruit production. He is very well respected in the industry and his advice is sought by many producers throughout south Florida. In 2012, he was critical to the reinvigoration of the IR-4 Field research center in Puerto Rico, and his dedication and work above and beyond his normal FRD duties, saw his arise as a logical choice for recognition at this year's IR-4 Southern Region meeting in Orlando FL.

Meritorious Service Award

Dr. Ric Bessin is an extension professor in the department of Entomology at the University of Kentucky in Lexington KY. His appointment is 100% extension and he has responsibilities in field and specialty crops. Ric currently serves as the extension IPM coordinator for Kentucky where he works with stakeholders to maintain an active pest management program for arthropod pests of fruit, vegetable crops, and field crops. He has assisted with the prioritization of IR-4 entomological research projects requests at regional meetings and has conducted IR-4 efficacy trials in Kentucky as part of the IR-4 Southern region program. Dr. Bessin also serves on the executive committee of the Entomological Society of America. Ric has served as IR-4 Liaison for

Kentucky for more than 9 years and is a dependable resource for helping to evaluate new and existing entomology project requests (PCRs) for the IR-4 Southern region.

IR-4 North Center Region

— by Satoru Myazaki

Technical Service Award

Jhony Mera manages the applied field pathology portion of the OSU Vegetable Pathology Program led by Dr. Sally Miller. A significant part of this program is the evaluation of fungicides for efficacy on a variety of vegetable crops. Jhony is responsible for field trials at three locations in the OSU-OARDC system, from initial planning through reporting. This involves many long hours at the computer and in the greenhouse and field. He interacts directly with growers and crop protection industry personnel to insure that trials are conducted as designed. He is an excellent supervisor to summer interns and other field staff members, and somehow manages to make long days in the hot sun a positive experience for them. For IR-4, Jhony has worked primarily with efficacy projects. These studies have been conducted efficiently and effectively, despite drought, flooding, unseasonably cool temperatures, unseasonably hot temperatures, insect pests and many other issues. Jhony has an excellent understanding of production requirements for many vegetable crops, techniques for inducing disease and evaluation of protocols. Some of his recent IR-4 projects include establishment of efficacy of acibenzolar against bacterial spot in peppers, propiconazole against several diseases in radish and quinoxifen

against bacterial spot in tomato. Jhony is one of the most highly dedicated technical staff members in vegetable pathology today. Through his tireless efforts, he has helped to move numerous crop protection products forward to benefit vegetable growers in Ohio and throughout the North Central Region.

Meritorious Service Award

Hannah Mathers has earned a national reputation within the green industry for her contributions to pest management, particularly in the realm of weed control. As the OSU Extension State Specialist Hannah has, for several years now, provided leadership with the green industry as the Chair of the OSU Nursery Short Course (NSC). The NSC and the affiliated Central Environmental Nursery Trade Show (CENTS) attracts more than 11,000 attendees from across the United States. One of Hannah's particular and innovative contributions to NSC has been the establishment of a Spanish-speaking program, complemented by a summer green-industry bus tour.

Hannah and her team have conducted 393 experiments for the IR-4 program since 2002, leading to registration of SureGuard, BroadStar, Tower, FreeHand and Showcase. Results of IR-4 trials are a popular and common theme in many of her extension presentations, of which more than 70 have been at meetings outside of Ohio. Clearly Hannah has been an excellent ambassador for the IR-4 Program. Hannah has also provided leadership in development of new technologies; including herbicide treated mulches for landscape weed control, and herbicidal treatments for control of liverworts. As the consummate academic Hannah is very active in the department's teaching program,

and has pursued her own unique line of fundamental research; the linkage between glyphosate use and reduced winter hardiness/ bark cracking in apple and shade trees.

Northeast Region Awards

—by Edith Lurvey

Technical Service Awards

Zvonko Jacimovski has been an important contributor to IR-4 since 2008, when he joined the research team at Cornell University. He has had primary responsibility for the IR-4 field research program at the Cornell Field Research Center, conducting up to 20 residue trials a year, as well as efficacy/crop safety studies as needed. Zvonko is well organized and detail oriented which results in well documented Field Data Books, submitted in a timely manner. His books are always among the first to arrive in the Regional Coordinator's office. He regularly submits books where there are no GLP findings. In fact, he often receives compliments from the QA auditors on the quality of his books, which also reflects on the proficiency of his fieldwork.

Zvonko is a pleasant co-worker, willing and cooperative. His work fulfills the distribution requirements for most of the crops in EPA Region I, and leads to registrations for pest management tools in New York, the northeast and the nation.

Roxanne Fish joined the field side of the IR-4 program in 2010, coming over from the analytical laboratory when it closed. Although her background was chemistry, with her knowledge of GLPs, she was able to pick up Field Data Book quality control review quickly.

Her assistance to the Regional Field Coordinator has been invaluable. Roxanne has conducted the majority of the 2012 Field Data Book quality

control reviews for the northeast Field Research Directors. She picked up all those little details necessary to conduct a thorough review in record time. She is self-motivated, looking for new challenges as time allows. In addition, her support in doing all those little things necessary in an office allowed the RFC to concentrate her efforts on technical issues and outreach. She has provided invaluable assistance on a number of new projects including the set-up for the National Education Conference and the Latin American GLP Capacity Training. The Northeast Region would not be able to complete all of the tasks necessary without Roxanne's dedication and hard work. 🌱

New SLRs

Northeast Regional Field Coordinator, Edith Lurvey welcomes two new State Liaison Representatives (SLR) to the Northeast Region. Cheryl Smith is replacing Becky Sideman in New Hampshire and Daniel Frank is replacing Rakesh Chandran in West Virginia.

Cheryl Smith officially joined UNH Cooperative Extension in 1993. As Director of the UNH Plant Diagnostic Lab (UNH-PDL), she is responsible for the daily operation of the Lab. Cheryl's additional responsibilities include delivering outreach educational programs on plant health and providing training in the identification and management of plant diseases and disorders to commercial producers, Extension Educators and home horticulturists. <http://bit.ly/UNHsmith>

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Recognizing an Ornamental Leader with the IR-4 SOAR Award

On Thursday, October 10, 2013, IR-4's Executive Director, Jerry Baron, along with IR-4's Ornamental Horticulture Program Manager, Cristi Palmer, presented the IR-4 SOAR award to North Carolina State University, Plant Pathologist, Mike Benson. The IR-4 SOAR award recognizes persons who have contributed outstanding Service, Outreach, Altruism and Research to IR-4 stakeholders.



Mike's 40 years of Service at NCSU has contributed to helping woody nursery, forestry/Christmas tree and greenhouse growers understand how to manage Phytophthora diseases affecting their crops. According to BASF's Market Development Specialist, Kathie Kalmowitz, "Mike's attention the objectives of the trial, potential treatments that make practical sense and the details of his reports have made him a model for younger researchers entering academia. He takes on problems with a systems design to break out treatments that point to new solutions or greater knowledge of the host pathogen environment." Mike has been working with IR-4 for over 20 years.

Kathy also commented on Mike's Outreach efforts, which includes chairing or being an active participant on national focus groups that address serious and persistent pests found in ornamental

production. He has also been chair of the national working group of plant pathologist at the Crossnore/Kanuga biennial meetings.

Mike's mentoring and teaching are excellent examples of Altruism. Even though he has taught a pathology class for years, he always contacts industry, while preparing for his class, to ask for new developments/products he can pass along to inform his students. He has also had the opportunity to mentor many who are now working in industry. Mike also consistently goes above and beyond the base protocols to study additional tools which might manage disease. Working with IR-4, one of Mike's greatest contributions has been his Research in the area of root rots both Rhizoctonia and Phytophthora species. He has influenced this area of research for many years and has set a standard with his trials which reflect his expertise.

IR-4 congratulates Mike Benson on his outstanding contributions to IR-4 and growers throughout the country. 🌿

Welcome

On August 20, 2013, the IR-4 QAU welcomed Diane D'Angelo to its ranks. Diane joined IR-4 as a temporary QA assistant in February and became a permanent associate replacing Kathryn Hackett-Fields. Diane has numerous years of experience in EPA GLP (as well as FDA) and has worked for companies such as Schering Plough, American Cyanamid and Procter & Gamble. 🌿

The IR-4 Newsletter Vol 44 No. 4, Fall 2013

The IR-4 Newsletter is published quarterly for distribution to cooperators in our partner State/Federal/Industry research units, State and Federal officials, commodity groups, and private citizens. Material from the IR-4 Newsletter may be reproduced with credit to the publication. Major funding for IR-4 is provided by USDA-NIFA and USDA-ARS in cooperation with the State Agricultural Experiment Stations. New Jersey Agricultural Experiment Station Publication No.P-27200-13-04, supported by state, US Hatch Act, and other USDA funds.

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Time 2 Change and Update on the EU Minor Use Programme

Article taken from Rainer Bahnemann presentation and ECPA website.

On October 22, 2013, BASF SE, Vice President, Rainer Bahnemann presented on behalf of the European Crop Protection Association (ECPA), a seminar at the IR-4 headquarters entitled, "Time 2 Change". The purpose of the seminar was two-fold in that Rainer wanted to bring IR-4 up to date on a new direction for the ECPA and to seek advice from IR-4 on how to move along their proposal for an EU minor use programme."

The European Crop Protection Association (ECPA) represents the crop protection industry at the European level. Its members include most crop protection companies and national associations across Europe. ECPA promotes modern agricultural technology in the context of sustainable development; to protect the health of humans and the environment and to contribute towards an affordable healthy diet, competitive agriculture and high quality of life."

"ECPA members support fair, science-based regulation as a guarantee to the consumer and the crop protection user, of high standards and safe products." (www.ecpa.eu).

The current societal issues in the EU equate pesticides with poison, thus increased regulation. The executive committee put out this

statement in 2011, "Our license and freedom to operate is at stake, and so is that of farmers: Without a shift in our behavior the restrictive regulatory burden will only increase further and limit the future of our R&D business." Recognizing this, the ECPA initiated Time 2 Change, beginning by changing their internal thinking on pesticides. They unveiled this initiative at a stakeholder conference in November 2011.

The key themes in their Time 2 Change initiative includes 4 areas:


1. Improve farmer & public health
2. Increase food safety, quality & affordability
3. Protect & conserve water
4. Enhance biodiversity

One example of change, will financially affect their company and sales forces, but in doing so helps sustain the environment. The ECPA companies have asked their sales people to encourage growers to voluntarily provide unsprayed vegetative buffer strips along all water boundaries of 2-5 meters. This will significantly reduce diffuse pollution from run-off. Another example is their efforts at being transparent with analytical standards (particularly metabolites) in water. Previously, the companies did not provide their analytical standards to water monitoring programs. They now are providing these standards to accredited and certified labs. ECPA is also providing demonstration farms to promote biodiversity. The project consists of 26 farms mostly in the UK, Germany and France and provides a

forum for demonstrating Best Management Practices and opening dialogue with growers and other stakeholders.

While the rollout of the Time 2 Change project has been successful with notable milestones, there is still no minor use programme such as IR-4 in the EU. A few years ago the European Commission submitted a report to the European Parliament on the establishment of a European fund for minor uses. The European Parliament has taken no action on the recommendation.

This is an ongoing effort and IR-4 continues to provide assistance to those seeking our help.

To learn more about the European Crop Protection Association visit www.ecpa.eu. 

Save the Dates

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A look at the Field Research Center at University of Puerto Rico

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

As an associate professor in the department of Crops and Agro-environmental Sciences at the University of Puerto Rico, Mayaguez, Dr. Wilfredo Robles is continually immersed in the world of agriculture and pest management. When the opportunity arose to re-invigorate the Puerto Rico IR-4 Field Research Center (FRC) in 2012, this weed scientist jumped on the challenge despite not quite knowing where it would lead. Wilfredo delved head first, brimming with anticipation and today he, along with his very competent technical assistants, Luis Almodóvar, and Alexander "Tito" Rodriguez, are able to claim success in conducting IR-4 maximum residue level (MRL) field trials as part of the IR-4 Southern region team. The decision to re-invigorate Puerto Rico as part of the Southern region was borne out of the fact that in recent years, there have been continued requests from the tropical fruit industry and commodity groups to help secure pesticide registrations for their growers. Additionally, the need to clearly differentiate between multiple trials at a single location is an issue that IR-4 has become focused on, and it was widely thought that having an additional location in EPA region 13 to accommodate GLP residue trials on tropical fruits would be advantageous. The Puerto Rico FRC appeared to meet this need and prompted Michelle Samuel-Foo, the Southern region field coordinator, to present the case for having a FRC in Puerto Rico to IR-4's management. In

2011 the plan was accepted and the center was re-established in preparation for the 2012 field season.

The 2012 and 2013 field seasons were not without their challenges for IR-4 Field Research Directors (FRDs) nationally. From heavy rains and flooded field plots, to bagworm infestations to government mandated cessation of field work, FRDs across the country struggled to complete the field trials that were assigned to them. All embraced the challenges and plowed forward however. The situation at the University of Puerto Rico's IR-4 FRC was manageable in comparison to some of the challenges other FRCs across the country were dealing with, and the team has been able to successfully complete their slate of 12 GLP field trials (4 in 2012 and 8 in 2013) with few hitches.

For 2012, a non-traditional arrangement was agreed to in order to get the team fully initiated to complete their first years' GLP residue trials. Reed Olszack, the FRD at the University of Florida's Tropical Research and Education Center (TREC) in Homestead, FL was tapped to serve as a remote FRD for the team in Puerto Rico, as he is an experienced tropical fruit grower who understands GLPs. This arrangement involved having TREC's 'Standard Operating Procedures' (SOPs)

modified to detail processes that would cover the work being done at Puerto Rico. Reed, Wilfredo and Luis worked closely with Michelle to generate a working document that would satisfy the GLPs for this site. The unconventional plan, although demanding in time and personnel resources, worked well. Reed was able to travel to Puerto Rico to be present for critical phases of all 4 GLP trials that were completed in 2012: Prompamocarb-HCL Guava, Cyantraniliprole Coffee, Indaziflam Coffee and Diquat Banana. The coffee studies proved a bit of a challenge for everyone as not much coffee is commercially grown in South Florida. Fortunately, the team was able to rely upon the experience of Evelio Hernandez, a research associate and coffee specialist at the University of Puerto Rico's experiment station in Adjuntas, PR for assistance. Mr. Hernandez had been previously involved in IR-4 GLP coffee trials when the IR-4 FRC in Puerto Rico was operational in the early 1990s. Reed remained in frequent communication with the Puerto Rico team to ensure plans progressed to create master



Map showing the locations of the Agriculture Experiment Stations (AES) around Puerto Rico where IR-4 MRL studies are being conducted. Provided by Wilfredo Robles

IR-4's Newest Research Center



L-R: Dr. Wilfredo Robles, Luis Almodovar, Evelio Hernandez and Reed Olszack discussing plans for the conduct of an IR-4 residue trial on coffee, in Adjuntas Puerto Rico. *Photo by: Michelle Samuel-Foo*

schedules, have GLP compliance letters with tentative dates submitted etc. Bi-weekly conference calls and training events between the team members and Michelle became routine and continued up until the team gained experience and familiarity with the details of conducting IR-4 MRL trials under GLP standards. This arrangement placed substantial demands on Reed's time, as he needed to balance his work schedule in Homestead, FL with his collaborative trials in Puerto Rico.

The IR-4 team in Puerto Rico managed its program using four Agricultural Experiment Stations (AES) around the island. This allowed for targeting of different commodities represented in Puerto Rico but also meant that the FRD team had to travel around the island in order to access the MRL field plots. Most of the residue trials are centered on established permanent plantings at the AES of Adjuntas, Corozal and Juana Diaz. Coffee trials, including harvesting and processing, are done in the mountainous mid-west region of the island at the AES, in Adjuntas, which is about 2 hours by car from the capital city of San Juan. This is also where the test substance storage facility for the IR-4 project in Puerto Rico is located. This is a secure site that was established in the 1990s and the group made the

decision to keep the facility at its existing location. Banana trials are conducted in the mountainous east-central region of the island at the AES in Corozal. Tropical fruit MRL trials such as guava and avocado are conducted in the southern coast of the island at the AES, in Juana Diaz. The IR-4 FRC's main office is located in the AES in Isabela which is in the north-west region of the island. The AES in Isabela is about 2 hours from Adjuntas, Corozal and Juana Diaz, but conveniently just 10 minutes from the shipping facility where the samples are delivered typically within a week of harvest for delivery to the analytical labs in the mainland US. Shipping frozen samples from Puerto Rico to the mainland US, poses some unique challenges as deliveries of dry ice are made only once a week from San Juan to the western parts of the island. The commodity samples are shipped via the Federal Express facility (Borinquen Airport Hangar) in Aguadilla, Puerto Rico. This geographical separation of the sites, along with the need to air-ship samples and the fact that the FRC's main office with the freezers are all spread out, means that one has to pay careful attention to logistics and vigilant scheduling is a prerequisite for any field work or sample shipping.

In 2013, the FRD team in Puerto Rico operated fully independent of TREC. Reed and Dr. Jonathan Crane, the tropical fruit specialist at the University of Florida's TREC, and a longtime supporter of IR-4, remained available to help provide support, advice and to aid with trouble shooting issues as they developed. Dr. Robles and his team were assigned eight GLP residue trials in 2013 with avocados and lychee being added to their crop repertoire. As with the

ir4.rutgers.edu



IR-4 SOR Quality Assurance Coordinator Kathleen Knight, conducting GLP training with IR-4 Field Research Director Dr. Wilfredo Robles in Adjuntas Puerto Rico. *Photo by Michelle Samuel-Foo*

establishment of any new GLP center (or the reinvigoration of a dormant center), there is typically a steep learning curve, but the Puerto Rico center has proven its ability to meet the challenge. Having the full support of the University of Puerto Rico's administration, including the department head and deans of the College of Agricultural Sciences and Agricultural Experiment Stations along with the supporting staff at the various experiments stations at the University Puerto Rico, the IR-4 Southern region quality assurance team and other FRDs, all contributed greatly in seeing that the center was primed for success. Here's looking forward to 2014 and beyond. 🌱

SLRs *continued from page 11*

Daniel Frank joined the WVU Extension team in March 2012. He serves as both an Extension Specialist and an assistant professor in the Davis College of Agriculture, Natural Resources and Design. Frank provides service to the local community and state by conducting research, helping growers to control pest problems and monitoring areas for invasive species. He is also catering to the growing interest in organic pest control and nonchemical alternatives by designing a research program that evaluates pest management tactics that can be used in organic pest control situations. <http://bit.ly/dfrankwvu> 🌱

IR-4 Successes August - October 2013

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: August 28, 2013

Pyraclostrobin

Trade Name: Cabrio, Headline, Pristine

Crops: Globe artichoke, Belgian endive, Persimmon, Bulb vegetable group 3-07, Fruiting vegetable group 8-10, Citrus fruit group 10-10, Pome fruit group 11-10, Caneberry subgroup 13-07A, Bushberry subgroup 13-07B, Small vine climbing fruit (except fuzzy kiwifruit) subgroup 13-07F, Low growing berry subgroup 13-07G, Oilseed group 20

PR#: 09689, A8662, 09093, 10560, 10561, 10562, 10563, 10564, 10565, 10566, 10567, 10568

Federal Register: September 11, 2013

Prometryn

Trade Name: Caparol

Crops: Snap bean, Dill

PR#: 08978, A3040

Federal Register: September 18, 2013

Quinoxifen

Trade Name: Quintec

Crops: Low growing berry subgroup 13-07G, Small vine climbing fruit (except fuzzy kiwifruit) subgroup 13-07F, Fruiting vegetable subgroup 8-10

PR#: 11065, 11064, 09289

Federal Register: September 18, 2013

Chlorantraniliprole

Trade Name: Altacor, Coragen, Prevathon

Crops: Citrus fruit group 8-10, Pome fruit group 11-10, Cereal grain (except rice and corn) groups 15 and 16

PR#: 11036, 11037, 10204

Federal Register: Oct 2, 2013

Methoxyfenozide

Trade Name: Intrepid

Crops: Herb subgroup 19A (except chives), Date, Caneberry subgroup

13-07A, Sorghum (sweet and grain), Dried shelled pea and bean subgroup 6C (except soybean, black-eyed pea, and southern pea), Small vine climbing fruit (except fuzzy kiwifruit) subgroup 13-07F, Low growing berry subgroup 13-07G, Pome fruit group 11-10, Fruiting vegetable group 8-10, Rapeseed subgroup 20A (indirect or inadvertent residues only), Sunflower subgroup 20B (indirect or inadvertent residues only), Atemoya, Sugar apple, Cherimoya, Custard apple, Ilama, Soursop, Biriba

PR#: 07241, 10154, 10470, 07525, 11149, 11150, 11151, 11152, 11153, 11154, 11155, 07065, 07066, 11173, 11174, 11175, 11176, 11177



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Major funding for IR-4 is provided by Special Research Grants and Hatch Act Funds from USDA-NIFA, in cooperation with the State Agricultural Experiment Stations, and USDA-ARS.



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