

Progress on GMUS Action Items



IR-4 continues to make progress on Action Items from the 2007 Global Minor Use Summit (GMUS) held in Rome. Two of the five action items included capacity building in biopesticides and reduced risk pesticides and development of a pilot project on global residues to support the concept of global zoning. The need for a capacity building program was initiated by Lucy Namu of the Kenyan Plant Health Inspectorate Service (KEPHIS) in Nairobi, Kenya. A grant from Dr. Jason Sandhal of the USDA Foreign Agricultural Service (and Oregon cherry farmer) funded the costs of IR-4's involvement.

Capacity Building in Biopesticides

The current focus of this effort has been concentrated in Africa. There is interest in expanding the use of biopesticides in Africa but countries differ in the degree of development of regulations for the registration of these products. Registering biopesticides under the same set of regulations that they have developed for conventional products has hampered their registration. Aflatoxin is a naturally occurring toxin caused by the fungi *Aspergillus flavus*. It is a

major concern in corn and peanuts in the US, and has been a severe problem in Africa. The IR-4 Project, in cooperation with Dr Peter Cotty of USDA-ARS and the Arizona Cotton Research and Protection Council, helped register a microbial biopesticide AF36 which helps reduce aflatoxin causing fungi. More recently, Dr Ranajit Bandyopadhyay of ITTA, Nigeria has isolated several potential biocontrol strains of fungi in African soils and asked how IR-4 could assist in starting the registration process for his strains in Africa. These 3 programs were developed into the core and theme for two biopesticide workshops. Led by IR-4 and with the assistance of some slide sets from EPA's Biopesticides and Pollution Prevention Division, the core program was a 5-day workshop on explaining how biopesticides are regulated in the US including biochemicals, microbials and plant incorporated protectants. Dr Peter Cotty explained how AF36 works and how the US EPA regulations were applied to the registration of AF36. The 3rd phase of the workshop was conducted by Dr Bandyopadhyay — where he described the large number of African isolates he has collected and current efficacy data to manage aflatoxin in corn. This was followed by group discussion on what information is likely needed for the registration in Africa. These workshops were conducted in Kenya at the headquarters of KEPHIS in Nairobi on August 11-15 (also attended by regulatory authorities of Egypt, Ethiopia, South Africa,

continued on page 3



Dr Michael Braverman, Manager of the IR-4 Biopesticide and Organic support Program (center), explaining how to conduct field residue trials to Lucy Namu of KEPHIS (right). Dr Jason Sandhal of USDA-FAS(left) observed the training programs which are funded by USDA-FAS



Inside this issue...

- 2** Focus on Ornamentals
- 4&5** 10 Years of Touring
- 7** IR-4 Leaders Receive Awards



From l to r, Dr Ranajit Bandyopadhyay of ITTA, Nigeria, Dr Peter Cotty, USDA-ARS and Lucy Namu, KEPHIS.

Spotlight on Ornamentals: Poinsettia

— by Cristi Palmer, IR-4 Ornamental Horticulture Manager

Native to Central America, poinsettia (*Euphorbia pulcherrima*) has become one of the most beloved holiday plants in the United States. With dramatic red bracts and crisp dark green leaves, poinsettia cheers us as the days grow ever shorter. Americans can choose from among dozens of varieties to raise our holiday spirits. And we do ... our holiday poinsettia purchases total more than \$250 million annually.

A brief history

Euphorbia pulcherrima, originating in the Taxco del Alarcon region of Southern Mexico, was used by the Aztecs as a source of a purplish dye for textiles and cosmetics and as the base for a medicine to treat fever. This plant may have remained in obscurity if it had not been noticed by Joel Roberts Poinsett (1779 - 1851), the first United States Ambassador to Mexico (1825 - 1829). During a visit to Taxco del Alarcon in 1828, Poinsett became intrigued by the bright red bracts brilliantly displayed during the short days of winter. Although Poinsett had attended medical school

to follow in his father's footsteps, he developed a deep interest in botany. His passion led him to eventually found the institution we now call the Smithsonian Institute. It also led him to collect *E. pulcherrima* during 1828 and take this unique plant home to his plantation in Greenville, South Carolina. Poinsett propagated cuttings from his collection to share with friends and botanical gardens. This plant has subsequently been dubbed the "poinsettia" in the United States and most of the English-speaking world to honor Joel Robert Poinsett.

IR-4 Research

IR-4 has worked to develop efficacy information on some key pest problems affecting poinsettia during production: Phytophthora root rots, Pythium root rots, Q and B biotype whiteflies, and western flower thrips. For Phytophthora and Pythium root rots, newer products like Fenstop and Segway were compared to the standards Stature and Subdue MAXX in order to develop data to support labels. For Q whiteflies, IR-4 screened



35 products, including Judo and Safari, contributing significantly to the information used to create a Whitefly Management Plan for ornamentals production.

With the IR-4 research efforts, United States growers will continue to have healthy crops, so we all can continue to brighten our holidays with cheerful, live poinsettia displays.

For more information about the IR-4 Ornamental Horticulture Program, visit <http://www.ir4.rutgers.edu/>

Sources used for this article:
http://www.pauleckepoinsettias.com/html/hist_fset.html,
<http://mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm> ▲

IR-4 and EPA Registration Process: Reaching New Highs in 2008

The year isn't even finished and IR-4's food use program has already hit a registration record high. As of October 1, 2008 EPA actions added specialty crop tolerances (MRLs) to 34 chemicals. These new tolerances, on petitions submitted by IR-4, should be able to support nearly 900 new crop uses. This work reflects a five year trend of steady and considerable increases in the number of chemical reviews coming from EPA (see table on back page). Furthermore, this year's record numbers do not include Section 18's or Biopesticides and there were no

major "super crop groups" (data extrapolations) reviewed for any chemical over the past year.

So what's the reason for the increase? The answers can be linked to The Pesticide Registration Improvement Act (PRIA), along with a lot of hard work by EPA personnel. PRIA now requires EPA to schedule submissions for review. Once a manufacturer or IR-4 submits a petition and it is logged in, EPA is required to make a decision for that petition within PRIA timelines. A number of more recent chemical

approvals were petitions IR-4 submitted to EPA years ago. Under the Food Quality Protection Act (FQPA) of 1996, EPA needed to focus its resources on low risk pesticides, particularly insecticides that could be used to reduce the use of organophosphate and other higher risk products. Given the number of priorities EPA was faced with as a result of FQPA, many IR-4 petitions were put on hold. One example is a diuron prickly pear cactus petition that IR-4 submitted years ago. Year in and year out this petition was not

continued on back page

continued from page 1

Tanzania and Uganda) and IITA, in Ibadan Nigeria on August 18-22 Nigeria (also attended by regulatory authorities of Benin, Ghana, Mali and Senegal). The workshop was successful on several levels both to Africa and the US. Good progress was made on developing follow up items from the workshop including initiating an East African and a West African working group to develop and harmonize biopesticide regulations for the region extending beyond the countries that attended. The plan is to streamline the application process for registrants so

that region-wide registrations for biopesticides become the norm in Africa. Many countries in Africa do not currently import US grain that has been genetically modified and one of the barriers has been the lack of regulations for these products which are biopesticides.

Global Residue Project

IR-4 is currently planning to conduct a global residue study with trials in over 20 countries to support the concept of global zoning. If successful, the results could demonstrate that residue trials can

be conducted in countries that represent zones rather than individual countries and help promote the development of global MRLs. A draft protocol was utilized during a training session in Kenya and Nigeria which included a review of the facilities, plot layout, sprayer calibration, harvesting and sample shipping, and how to capture raw data in a Field Data Book.

This action item was one of five that were identified at the 2007 GMUS. To learn about the others visit ir4.rutgers.edu/GMUS/GMUSportal2.htm. ▲

Strategic Planning Conference Agenda

Future Directions for IR-4 Support of Specialty Crop Pest Management and Minor Uses. Held December 9-10, 2008, at the Doubletree Hotel, Pentagon City, VA. Register online at ir4.rutgers.edu.

December 9th

10:00 AM – 11:30 AM
Registration
11:30 AM – 12:45 PM
Luncheon – Trends in Research Support for Specialty Crops within USDA
1:00 PM – 1:45 PM
State of the IR-4 Project
1:45 PM – 5:30 PM
Factors Influencing the Future Availability and Use of Pesticides for Specialty Crops and Minor Uses
1:45 – 2:15
Efficacy and Crop Safety Data Needs to Support Specialty Crops
2:15 – 2:45
Pesticide Performance Data Development at Public Institutions
2:45 – 3:15
Influence of Secondary Standards on Pesticide Use
3:00 – 3:15
Break
3:15 – 3:45
Global Development and Harmonization of Pesticide Registration

3:45 – 4:15
Organic Agriculture Production
4:15 – 4:45
Plant Incorporated Protectants-Biotechnology
4:45 – 5:15
Public Health Pesticides-Minor Use Needs
5:15 – 5:30 Discussion
6:00 PM – 7:00 PM
Reception

December 10th

7:00 AM – 8:00 AM
Continental breakfast
8:00 AM – 5:00 PM*
SWOC Analysis of IR-4 by Stakeholder groups
Reports on SWOC Analysis
Discussion on Priorities for the Future of IR-4
Distillation of Future Priorities for the IR-4 Project
Wrap-up

* Twenty minute breaks are scheduled to start at 10:00 AM and 3:00 PM and Lunch at 12:00 Noon

The IR-4 Newsletter Vol 39. No. 4 Nov. 2008

The IR-4 Newsletter is published quarterly for distribution to cooperators in our partner State/Federal/Industry research units, State and Federal officials, private interest 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-CSREES and USDA-ARS in cooperation with the State Agricultural Experiment Stations. New Jersey Agricultural Experiment Station Publication No.P-27200-08-02, supported by state, US Hatch Act, and other US Department of Agriculture funds.

Editor: Sherrilynn Novack

IR-4 Public Relations and Communications,
732.932.9575 x 4632,
novack@aesop.rutgers.edu

Newsletter Committee:

Northeast Regional Field Coordinator,
Edith Lurvey, 315.787.2308.
North Central Regional Director,
Bob Hollingworth, 517.432.7718.
Western Regional Assistant Field Coordinator,
Stephen Flanagan, 541.752.9291.
Southern Regional Field Coordinator,
Charlie Meister 352.392.2399, and Assistant
Robin Adkins 352.392.1978.
USDA/ARS Field Representative,
Ben Fraelich, 229.386.3609.
Commodity Liaison Committee member,
Dave Trinka of MBG Marketing,
269.434.6791.
AL State Liaison Representative,
Charles Gilliam
IR-4 HQ, Assistant Director,
Van Starner and
Technical Coordinator /Entomology,
Ken Samoil
732.932.9575.

Special Tenth Year EPA/IR

2008 marks 10 years of IR-4 organized educational bus tours for EPA/IR-4/USDA personnel. The tours allow people to see specialty crops and meet the growers who produce them. This year, in celebration of the tenth year, the tour was organized as a two-day event to accommodate featured stops of early morning Autumn cranberry harvesting in New Jersey. The idea to view a cranberry harvest began as a bit of a joke, when EPA's Minor Use Team Leader, Barbara Madden, mentioned "someday, I'd like to see how cranberries are harvested." That was all it took to develop the theme, then IR-4 and EPA made it happen.

Common to all IR-4 tours are the early morning starts and late night finishes, and this tour followed suit. With luggage stowed, the filled-to-capacity 57-seat bus left the Greenbelt, MD Metro Station at 7:45am on October 1st.

The first stop was about an hour and a half north of the Washington, D.C. beltway, in Oxford, PA. The John C. Leo & Son mushroom farm uses the most modern mushroom growing equipment available to produce the typical white *Agaricus* mushrooms.

as when it entered it."

At this stop, tour participants met Laura Phelps, president, American Mushroom Institute, who handed out a document describing the major pest and disease issues in mushroom production. *Trichoderma* (green mold) has been an issue for mushroom growers since 1993. The mushroom industry currently has Section 18 emergency exemptions for the use of thiophanate-methyl for treatment of spawn and supplement in PA, DE, MD, OR, and CA. With IR-4's help, the registrant, United Phosphorus, is working toward a Section 3 label for mushroom use. *Bacillus subtilis* has recently been registered as a spawn and supplement treatment and IR-4 anticipates completing a submission for imazalil for green mold by June 2009. The document also discussed the need for insecticides to control flies that vector mushroom diseases. Several area mushroom growers joined the tour to meet participants at this stop.

From Oxford the tour moved on to the Rutgers Agricultural Research and Extension Center, in Bridgeton, NJ. Discussing the need for herbicides, center director and weed scientist, Brad Majek, invited participants to hoe weeds in a demonstration plot. This object lesson took about 15 minutes which Brad then calculated into man hours and dollars, thus emphasizing the need for safe and effective herbicides. The tour participants were good sports and left with a parting gift, their hoe. Entomologist, Jerry Ghidui, gave participants a chance to "get up

close and personal" with insect pests and the frass they create when munching on cole crops. Pathologist Andy Wyenandt also spoke briefly about fungicide needs for vegetable crops, particularly soil fumigants for control of *Phytophthora capsici*.

Overdevest Nurseries has been in Bridgeton, NJ, since 1952, and was the next stop on day one. Ed and Gail Overdevest were the hosts and gave participants an overview of their operation, including a look at their state-of-the-art pesticide storage and containment facilities. Overdevest specializes in azaleas, rhododendrons, dogwoods, and Japanese maples, and markets these specialty crops to independent garden centers and distributors within a 300+ mile radius of Bridgeton. They have over 1400 varieties of shrubs, trees, vines, and perennials that grow on about 210 acres. Their container production involves over 2.7 million sq. ft. of coverable growing space. Ed discussed various cultural practices the nursery utilizes, which include:

- Irrigation: Container production - overhead sprinklers, drip and recycled water
- Field production - portable pipe and hard-hose reel
- Container Mix: 80% pine bark, 20% sand
- Propagation: Most woody plants are propagated "in house" utilizing softwood cuttings.

Cumberland County Rutgers Ag Extension Agent, Wes Kline, met the bus at Overdevest and took us to our final stop on day one, Flaim Farms in East Vineland, NJ. Flaim Farms specializes in romaine and numerous other varieties of lettuce. In addition to lettuce, they grow many other vegetables including: kohlrabi, spinach, mustard greens, and collard greens, to name a few. Flaim Farms vegetables are marketed under the "Panther Brand" through chain stores, produce cooperatives, and produce brokers, direct sales to



Cumberland County Extension Agent, Wes Kline, discusses disease issues at Flaim Farms.



John Leo & Son Mushroom Farm uses the "cleanest" compost available.

And for a farm whose product is grown in compost, it is one of the cleanest, most odor-free farms in the area. In fact, Ed Leo won the 2001 Conservation Farmer of the Year Award for their new technology — a system that accumulates all water from the farm in a holding tank where it is aerated and then pumped to a spray irrigation field. According to Ed and his partner, Bob Cantarera, their goal "is to have the water that leaves the farm's property go into the Chesapeake Watershed at the same quality



IR-4/USDA Bus Tour



University Rutgers Ag
Wes Kline
pressure at Flaim

roadside stands and at farmers' markets.

As we walked through fields of romaine, Boston, red lettuce, beets, dandelion greens and eggplant, Bob Flaim, Jr. showed the group severe losses due to *Sclerotinia* lettuce drop. We also discussed a recent outbreak of downy mildew affecting basil fields at Flaim Farms. For many, this was the first time they saw downy mildew and its devastating toll.

Dining in style at Tomasello Winery in Hammonton, NJ, the group listened as Jack Tomasello talked about their grape and wine production. Theirs is the only third generation vineyard in New Jersey and was established in 1933, as Jack tells it, "the minute after prohibition's repeal." Using only home grown grapes in their wines, Tomasello vineyards grow 24 different varieties to produce 30 still wines and eight sparkling wines. The biggest pest concern for Tomasello vineyards is birds. Jere Downing, executive director of the Cranberry Institute, joined the tour at the winery and prepped the group for the next day's events. Jere wanted the group to understand that cranberries are not an aquatic crop, but are grown on vines in beds. This message was reiterated throughout the next day.

The most anticipated stops of the tour were the "up close and personal" looks at cranberry production and harvesting in the Pine Barrens around Chatsworth, NJ. The tour provided two cranberry farm stops, the first at Pine Island Cranberry Co., Inc., the largest cranberry farm in the world, run

by Bill Haines, his sister Holly Rivera and his daughter Rebecca (Becca) Fenstermaker. Standing on the narrow dams separating cranberry beds, tour participants witnessed first-hand (and in awe!) the skill and precision of the entire process of flood harvesting, from beginning (berries "beaten" from the vines under

water, and with the 4-chambered air pockets inside, the berries float to the surface) to the end (when berries are high-speed conveyed into truck-mounted wooden boxes holding hundreds of pounds each). If you've ever seen a picture of a cranberry harvest, with a sea of red berries against a crystal clear blue sky, that's what was experienced by all on this picture-perfect morning amidst NJ cranberry bogs!

The second farm stop was at the Joseph J. White Cranberry Farm owned and operated by Joe Darlington, his wife Brenda Connor and their son Todd. Here we saw their crews dry harvesting (pictured below)



fruit for fresh market sales. Brenda traveled with the bus in the morning, sharing stories of her family's 150-year tradition of cranberry farming in the Pine Barrens, and her son's desire to carry on the tradition.

In between the two cranberry farm stops, Dan Schiffhauer, Ag. Scientist and Receiving Station Manager, gave participants a tour of the Ocean Spray receiving station. There, they witnessed cranberries being trucked in by the Haines farm and other growers, being sampled, tested and evaluated (dry weight, Brix, color, etc.), cleaned and readied for shipment to storage freezers in Philadelphia or for processing in Massachusetts.

Cesar Rodriguez, Rutgers entomologist from the Philip E. Marucci Center for Blueberry and Cranberry Research and Extension, educated participants about cranberry culture and pest management programs and issues during the bus ride. In fact,

with his close ties to most berry growers in the Pine Barrens, Cesar helped in organizing all the cranberry stops.

The Rutgers Fruit & Ornamental Research Extension Center in Cream Ridge, NJ, was the next stop. After lunch, center director Joseph Goffreda and IR-4 researcher, Tom Freiberger took the group on a walking tour of IR-4's ornamental research plots. Jim Lashomb, Rutgers ornamentals entomologist, and Jim Johnson, South Jersey County Agent, specializing in ornamentals, also briefed tour participants about various pest management programs and issues, and ongoing research in this increasingly valuable and expanding NJ specialty crop. Finally, they discussed IR-4 Good Laboratory Practice residue trials that are being planned for perennial fruit crops at this site beginning in 2009.

Perhaps the most entertaining tour stop was the last one, Lee Turkey Farm near Hightstown, NJ. Owner Ronnie Lee talked about the many innovations on his farm, which is surrounded by residential homes lined up right to the edge of his property. The Lee farm is a pick-your-own vegetable and fruit farm that hosts hundreds of school tours each year. Lee is clearly in the agritainment industry, improving and adapting the farm to accommodate children and adults of all ages. The farm provides a corn maze, hay rides and seasonal festivals. Additionally, they raise turkeys and sell them oven-ready for Thanksgiving and other holidays. The turkeys are fed a natural homemade feed mix and are raised without medications or growth hormones. They sell about 5,000 turkeys a year.

The tenth IR-4/EPA/ USDA bus tour received rave reviews. Participants commented they learned a great deal about farming that will help them in their jobs. Every year, IR-4 likes to say this tour was the best one yet, but it'll be hard to top this one! ▲



One innovation at Lee's Turkey Farm is the use of solar panels on the roof of the turkey house, which provides most of the energy for the farm.

Penn State Leading Project to Bolster Mid-Atlantic Specialty Crop Industry



— by Kristie Auman-Bauer Public Relations & Outreach Coordinator
Pennsylvania IPM Program Penn State University

Over a third of all farm sales comes from specialty crops such as fruits, vegetables and tree nuts. With consumers increasingly demanding food that is safe, nutritious, and locally grown, the Mid-Atlantic specialty crop industry is sure to grow.

Maximum growth will depend on collaboration among different parts of the industry from the farmer through the processor and marketer to the consumer, and also involve institutions of higher learning to provide science-based innovations and an educated workforce. Penn State's College of Agricultural Sciences is responding to this need by developing a Mid-Atlantic network of producers, processors, wholesalers, retailers, researchers and educators to form a coalition to address strengths and weaknesses in the specialty crop food industry.

According to Kathleen Kelley, project coordinator and associate professor of horticultural marketing and business management at Penn State, consumer demands are increasing as well as rising transportation costs for producers in California, Florida and the southern hemisphere countries who supply fresh fruits and vegetables to the Mid-Atlantic region. "This is creating a tremendous opportunity for specialty crop producers in the Mid-Atlantic, but we need to have research, education and extension programs in place to support them."

That's why Kelley and other Penn State experts in horticulture, plant pathology, entomology, agricultural economics, and food sciences are teaming up with industry to assess changes in consumer's purchasing and eating habits and the impact of those changes on industry opportunities. "Many growers and others in the food industry don't have access to consumer buying trends and how they will impact their businesses," Kelley explains. "The goal of this project is to get the data to network members so they can make more informed business decisions."

On the consumer attitude side, researchers will be distributing surveys to consumers in five metropolitan areas in the Mid-Atlantic region to determine their attitudes and behaviors towards food purchases. The Internet surveys will be conducted quarterly during the project to learn about consumer's responses to reemerging issues such as rising energy costs and food safety. "All of our findings will be presented at the workshop," Kelley reports. The industry will also have access to the information via monthly e-mail newsletters and the web site.

The goal for the first year is to get a sense of the future by engaging industry representatives, government and academia in a series of conversations culminating in a strategic planning workshop to discuss current factors influencing

consumer behavior and the impact on the food industry in the Mid-Atlantic. "We'll establish work groups to develop action plans that include best practice approaches

to production, integrated pest management, processing, food safety and understanding consumer behavior."

Kelley says they plan on working with universities in other states to expand the effort. "We hope this initial project will serve as the foundation for a sustainable effort that will address the needs of producers, markets and consumers in the region for years to come."

Ultimately, a larger project will be proposed to carry the strategic plans several years into the future and establish permanent, interactive communication channels. This will allow the specialty crops industry to be responsive to markets and regulatory changes as well as benefitting from modern research output.

The project is being funded by a USDA Specialty Crop Research Initiative grant, whose goal is to solve critical specialty crop agriculture issues, address priorities and solve problems through multifunctional research and extension. For more information about the program, visit <http://www.csrees.usda.gov>. For more information about the network, e-mail specialtycrops@psu.edu or call (814) 863-5567. ▲

Clearances

Clearances from July 2008-September 2008 can be found on the IR-4 website at <http://ir4.rutgers.edu/food.html>. Also, this information is emailed monthly to members of the IR-4 listserv. To join the listserv, email your request to novack@aesop.rutgers.edu ▲

IR-4 AA Elected ESA Fellow

The entomological Society of America (ESA) has elected IR-4 Administrative Advisor, Mike Parella, as a 2008 Fellow. The election as a Fellow acknowledges outstanding contributions in one or more of the following: research, teaching, extension or administrations. Mike maintains a teaching/research program in entomology and works in the area of developing IPM strategies for ornamental crops, with an emphasis on biological control. He is the author of more than 375 publications, with more than 200 of these appearing in trade journals. For

10 years he wrote a monthly column for *Greenhouse Manager* and *GrowerTalks* magazines. Mike's laboratory has been an incubator for the development of other research/extension personnel currently working in floricultural entomology.

Mike is the recipient of the California Association Research Award (1986), the ESA Recognition Award (1987), the Futura Research and Education Award from the Professional Plant Growers Association (1991), the Alex Laurie Research Award from the Society of American Florists (1997), the Virginia Tech Distinguished Alumni Award (1998), and the Emma



Lausten Horticulture Award from Rutgers University (2007). He initiated and organized the first Conference on

Insect and Disease Management on Ornamentals, sponsored by the Society of American Florists (San Jose, CA in 1985), which has become an annual event, currently in its 23rd year. ▲

The Fellows will be recognized during the 2008 ESA Annual Meeting held November 16-19 in Reno, Nevada.

Excerpted from ESA Newsletter, Vol. 31, No. 9, September, 2008.

David Soderlund Receives 2008 International Award

David Soderlund, Professor of Insecticide Toxicology and Chair of the Department of Entomology at Cornell and IR-4 Northeast Regional Director, received the 2008 American Chemical Society (ACS) International Award for Research in Agrochemicals, sponsored by BASF Corporation and DuPont Crop Protection. The award, conferred annually by the Agrochemical Division of the ACS, recognized Soderlund's "pioneering research and continuing discoveries on the insect sodium channel and insecticides that disrupt its action." The award recognition included a one-day symposium organized by the ACS Agrochemical Division in Soderlund's honor on the topic "Molecular Mechanisms of Insecticide Action, Selectivity, and Resistance."

Soderlund is recognized internationally as a leading authority on the toxicology and mode of action of insecticides affecting ion channels. His research, which has spanned more than 30 years, has produced

numerous important contributions to the science of insecticide toxicology. However, he is best known for his research on the pyrethroids and other compounds affecting voltage-sensitive sodium channels, the work that formed the basis of this award.

Soderlund was among the first in the insecticide toxicology research community to incorporate the emerging tools and strategies of molecular neurobiology in research on insecticide action and resistance. His laboratory developed molecular probes to isolate sodium channel gene sequences orthologous to the *para* sodium channel gene of *Drosophila melanogaster*, which led to the molecular cloning of the house fly ortholog of *para* and the identification of sequence polymorphisms in susceptible and pyrethroid-resistant flies. The Soderlund group also achieved the functional heterologous expression of house fly sodium channels in the oocytes of the frog, *Xenopus laevis*, and employed this



system to demonstrate that sodium channel sequence polymorphisms associated with pyrethroid resistance

reduced the insecticide sensitivity of the channel. Soderlund's recent research has also exploited the heterologous functional expression of sodium channels to explore the actions of pyrethroid and pyrazoline-type insecticides on cloned rat and human sodium channel isoforms. These studies not only have identified differences in sensitivity between isoforms but also provide an experimental platform for the study of the effects of insecticides on human sodium channels, an area of research with important regulatory implications.

Soderlund received a B.S. in Biology from Pacific Lutheran University, a Ph.D. in Entomology from the University of California at Berkeley, and completed his postdoctoral research at Rothamsted Experimental Station in the U.K. ▲

Excerpted from Station News, NY State Agricultural Experiment Vol. 89, No.18, Aug 29- Sept. 12, 2008

New Highs

continued from page 2

scheduled for review. With the advent of PRIA, this petition was scheduled and the use was approved in 2007. EPA has now worked off the entire backlog of IR-4 submissions and is reviewing new IR-4 petitions within a fifteen month time period.

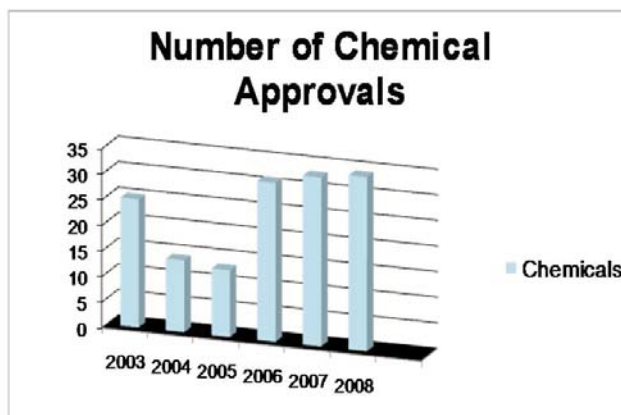
Additionally, EPA has challenged IR-4 to work smarter. IR-4 now bundles as many uses as possible for each chemical into a single petition, and each year the bundles are getting larger. This allows EPA to make the most of each review and assessment. In 2009, IR-4 will modify its 30-month timeline to more efficiently adjust for bundled submissions. The new strategy will be to work on as many uses for a given chemical within each year, and if this work occurs over two years, then studies for both years will be bundled into the same submission. IR-4's modified timeline

may cause some studies to have a 36-month timeline while others will have a 24-month timeline. They will then be combined into the same EPA submission.

EPA continues to expand its relationships with other US and global regulatory agencies including: California's Department of Pesticide Regulation and Canada's Pest Management Regulatory Agency (PMRA), who support the activities of Agriculture and Agri-Food Canada's Pest Management Centre. The minor use joint (EPA/PMRA) review process saves resources since only one agency is reviewing the residue data but more importantly, both agencies are establishing MRLs at the same level and at the same

time to prevent trade irritants before they happen. The global review of DuPont's Chlorantraniliprole (E2Y45) was featured in the July IR-4 Newsletter and is a fine example of utilizing global capital to more effectively review a new product.

All of these efforts improve efficiencies, allowing IR-4 to fulfill its mission of providing safe and effective pest management solutions to specialty crop growers. ▲



Number of chemicals for which new uses have been approved by EPA



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



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

PRESORTED
FIRST CLASS MAIL
US POSTAGE
PAID
JERSEY CITY, NJ
PERMIT NO. 295

Rutgers, The State University of New Jersey • University of California • Cornell University
• University of Florida • Michigan State University

Address Service Requested