



Forward Motion

The
IR-4
Project
2009

IR-4 Year in Review



Dear Friends,


On behalf of the IR-4 Project Management Committee, I want to thank you for your continued support of the IR-4 Project. From the collective work of IR-4 personnel at field sites, in regional offices, analytical laboratories, and headquarters, we had another successful year. I also want to thank the USDA, who provided funding and scientific contributions; the State Agricultural Experiment Stations, who provided direct funding along with in-kind* support through hosting IR-4 field centers, analytical laboratories and management offices, as well as research and extension scientists who participate in IR-4 activities. IR-4 also appreciates the collaborative efforts of the Pest Management Centre (PMC) at Agriculture and Ag-Food Canada, who cooperated on research projects of mutual interest; and the crop protection industry, who provided access to products, technical support and funding. I also want to acknowledge our regulatory partners at the US Environmental Protection Agency (EPA), Pest Management Regulatory Agency in Canada, and California Department of Pesticide Registration who provided guidance and reviewed IR-4 submissions. Finally, IR-4 also thanks the members of the IR-4 Commodity Liaison Committee and the Minor Crop Farmers Alliance for their guidance and willingness to articulate IR-4's needs to Congress.



We anticipate another successful and productive year for IR-4 in 2010. For the third year in a row, Congress increased IR-4's funding. The 2009 increase of \$180,000 brought the annual National Institute of Food and Agriculture (NIFA—formerly CSREES) funding to \$12.18 million. IR-4 also continues to successfully compete for additional grants to support activities. In 2009, IR-4 was awarded three grants through USDA for public health pesticides and international activities. These grants are aligned with several of the program enhancements outlined in the new IR-4 Strategic Plan.

Still, there are challenges facing IR-4 and its future success in facilitating new product registrations for growers of specialty crops and minor uses. As EPA implements the provisions of several court decisions, there will be new regulatory challenges. Also, additional safety factors could likely limit some registrations. Given these uncertainties, it is extremely important that IR-4 continue to work closely with EPA and others in selecting the most effective pest management products for IR-4 sponsored studies that also maintain the lowest risk to people and the environment. I welcome your suggestions, comments and concerns, and invite you to contact me at jbaron@aesop.rutgers.edu, as we face these challenges together. Again, I thank you, the participants in the IR-4 Project process, for your contributions to our current and future success.

Sincerely,


Jerry J. Baron
IR-4 Executive Director

** In-kind Support—State Agricultural Experiment Stations provide in-kind support valued at over \$10 million annually. This includes support for: five analytical laboratories, offices, research farms, infrastructure, administrative support, scientific expertise, and activities for IR-4 State Liaison Representatives. Fieldwork for food use and ornamental horticulture is coordinated by Regional Field Coordinators in CA, FL, MI and NY, and by USDA-ARS in MD, for various sites in 31 states throughout the U.S. IR-4 laboratory analyses are conducted primarily at the CA, FL, MI, and NY agricultural experiment stations and ARS laboratories in GA, MD, and WA. Protocol development, data assimilation, petition writing, and registration processing are coordinated through IR-4 Headquarters, the crop protection industry, food processors, and state and federal regulators.*



Forward Motion in the Food Use Program

Facilitating regulatory approval of crop protection chemicals continues to be the mission of the IR-4 Project. In the Food Use Program, IR-4 develops magnitude of residue data to support new food use registrations. Support is also provided through the continued expansion of crop groups and with efficacy and crop safety research.

Emergency Help for Citrus Growers

In 2009, IR-4 came to aid of the Florida Citrus Industry that was struggling with the tremendous impact of citrus greening, a disease vectored by the Asian citrus psyllid. To eliminate psyllids and reduce costs, growers tried highly mobile low volume sprayers that delivered 1-10 gallons per acre (GPA) of spray solution, which allowed growers to cover many more acres in a shorter period of time. It was clear that low volume sprays could play a major role in controlling psyllids, but there were almost no labeled products that allowed for these low volume applications. The answer was for IR-4 to generate additional residue data to support 24(c) labels from the Florida Department of Agriculture. The IR-4 Project agreed to help with the process to obtain these labels. IR-4's involvement brought experience and contacts

(EPA, researchers, manufacturers, commodity associations) to the effort. IR-4 developed the study protocol for collecting and processing residue data and worked with EPA to determine that application volumes of 2 GPA would not require a more detailed registration process. Within nine months, IR-4 contracted the application and collection of samples treated with targeted insecticides. The IR-4 analytical laboratory at the University of Florida did the laboratory analysis to determine residue levels and prepared a report with their findings—all in a remarkably short period of time.

Results of the Program

Data generated from the **Food Use Program** allowed the EPA to establish **219** permanent pesticide tolerances on **32** chemicals in 2009. Using crop groupings and other extrapolations, these tolerances may support as many as **952** new use registrations.

Value Analysis of the Program

IR-4 continues to bring significant value to specialty crop growers. In 2007, the Center for Economic Analysis at Michigan State University published a report that noted IR-4's food program contributes \$ **7.7 billion** annually to U.S. gross domestic product.

Moving Forward

As IR-4 continues to secure crop group and subgroup tolerances based on residue results from representative crops, registrants are requesting additional “value data” (efficacy and/or crop safety) on crops other than the representative crops. The Strategic Plan for IR-4 2009-2014 proposed the food program be strengthened by including this “value data” research. Additional funding is being targeted for this required research to add: new crops already covered by a tolerance, new pests for crops already labeled, and to demonstrate preliminary pest control and/or crop safety before registrant approval for IR-4 to begin residue work. The Strategic Plan also expands the Food program to include a comparative product performance testing program where IR-4 will test and identify the best performing product(s) to find solutions in the management of critical pest voids (including invasive pests).

2009 brought a number of changes to the IR-4 food use database (ir4.rutgers.edu/food.html). These changes allow for greater search capabilities including viewing projects that are currently being prepared for submission to EPA. The data is now viewable in real time and is updated daily.



Forward Motion in International Cooperation & Crop Grouping

International Cooperation

IR-4 will continue to move forward assisting U.S. specialty crop growers to compete in international trade, by aiding in the harmonization of pesticide use and country-specific Maximum Residue Levels (MRLs) that often differ between the U.S. and its global trading partners. IR-4 remains active in global harmonization efforts of NAFTA, the Codex Committee of Pesticide Residues (CCPR) and Organisation for Economic Co-operation and Development.

IR-4 has received a number of grants from the USDA-Foreign Agriculture Service to assist with our International initiatives. The most recent is to support the use of IR-4 data, to be submitted to foreign regulatory authorities (European Union, CCPR, Japan, and others) to establish MRLs which will allow US growers to export produce more freely.

Following up on the 2007 Global Minor Use Summit, IR-4 will continue to collaborate with specialty crop programs throughout the world to

reduce the data development burden of any single country and harmonize MRLs. IR-4 also received funding from USDA-Foreign Agriculture Service to conduct a global residue study to examine the influence of geographic location on pesticide residues. This study will provide data and allow scientists to determine if geographic zones affect the ultimate residues in the test crop. This study is expected to be completed in 2010.

Crop Grouping

This initiative enables the establishment of residue tolerances (MRLs) for a group of crops based on residue data from a few representative crops. The IR-4 Project, with support from the International Crop Grouping Consulting Committee (ICGCC), continues to lead an effort to update the EPA crop group regulation to not only incorporate “orphan” crops that are not currently members of a crop group, but also to develop new crop groups. The ultimate goal is to pursue a harmonized international crop grouping system such as Codex to facilitate international MRLs and trade.

IR-4 has already completed the update for the bulb vegetables as well as the berries and small fruit groups and developed a new crop group for edible fungi. The proposed rule for the revised Fruiting Vegetables, Oilseed, Citrus and Pome Fruit crop groups was published in the **Federal Register** on January 6, 2010 and is expected to be finalized in June of 2010. Four other crop groups are being reviewed by EPA and IR-4 expects to submit another four in 2010. The entire process is expected to be completed in 2012 or early 2013.

IR-4, along with the ICGCC, are making great strides to present these updates and additional crops to the CCPR, and they have provided a document “Draft Principles and Guidance on the Selection of Representative Commodities for the Extrapolation of MRLs to Commodity Groups” which will assist Codex reviewers and data generators to be able to utilize crop groups to the greatest extent possible.



Forward Motion in the Ornamental Horticulture Program

Reflecting Back

Over the last 5 years, the **Ornamental Horticulture Program** has changed character, complexity and focus to better serve our stakeholders.

We have explored new projects, participated in new ways of communicating results, and have streamlined processes. The program has added efficacy projects examining both chemical and biological active ingredients in addition to developing crop safety data. Project summary reports have been created to aid in product registration decisions. The research database has been expanded to more accurately capture IR-4 activities. The priority setting workshop is now held every other year, which is more aligned with the research cycle. IR-4 is also an ongoing participant in two USDA-APHIS ad hoc task forces for chili thrips and Q biotype whiteflies.

Results of the Program

During this period, information developed through IR-4 has contributed to **55** registration decisions on **37** products. In 2009, the program

produced **16** summary reports using **4,240** trials and contributed to **6** registrations, which had a direct impact on **614** crops.

Value Analysis of the Program

A 2008 Study from the Michigan State University's Center for Economic Analysis, found the IR-4 Ornamental Horticulture Program contributes annually **\$1.2 billion** to U.S. gross domestic product.

Moving Forward

The next 5 years hold challenge and promise along with continued evolution for the Ornamental Horticulture Program.

Research efforts will continue to focus on those active ingredients with reduced environmental footprints.

New areas will be added to the core research program. In both entomology and pathology research, product rotations or tank mixes that explore Integrated Pest Management (IPM)

concepts will be screened. Research into product compatibility with the beneficial organisms often used for IPM will be initiated.

This program will expand research on newly invasive organisms and collaborate with respected researchers on screening products and developing management programs for certain invasives impacting ornamental horticulture growers.

Through a 2010 USDA-APHIS grant, this program will work with researchers from University of Georgia, Clemson University, Florida Department of Agriculture & Consumer Services, and the University of Guadalajara on Gladiolus Rust to screen fungicides and develop strategies to manage this disease before it heavily impacts growers.

Over the last 5 years, the Ornamental Horticulture Program has changed character, complexity and focus to better serve our growers ... and we are not done yet.



R. Scorz



Forward Motion in the Biopesticide & Organic Support Program

The **IR-4 Biopesticide & Organic Support Program** has the goal of facilitating the registration of crop protection products classified by EPA as Biopesticides. The two main functions of the program include a grants program to fund **efficacy research** on biopesticides and organic products and a **regulatory assistance** program.

The grant program funds, **Early Stage** research, for products whose core data packages have not yet been submitted to EPA. **Advanced Stage** biopesticide proposals for products that have been registered by EPA or are in the registration process. It also funds those where additional data is needed to assist with expansion of the registration to new crops or to new pests. **Demonstration** grants fund large scale plot research to gather information and provide outreach demonstrating that biopesticides can be a useful tool in pest management systems. Funding for the Demonstration grants is provided from a cooperative agreement between IR-4 and EPA's Biopesticide Pollution Prevention Division.

The regulatory assistance program helps small businesses and public sector scientists in the EPA registration process by providing guidance and preparing registration and tolerance packages.

Results of the Program

In 2009, the biopesticide grant program funded **4** Early Stage, **20** Advanced Stage and **10** Demonstration Stage projects. These were conducted at **20** different universities and USDA research units and on **100** product-crop combinations.

IR-4's 2009 submissions to EPA included amended volumes for Acetic acid and *Trichoderma hamatum* 382; and Section 3 submissions for Bacteriophage of *Clavibacter michiganensis* subsp. *michiganensis* in tomato and Tobacco Mild Green Mosaic Tobamovirus and *Aspergillus flavus* for AF36 on corn.

In addition, through efficacy research funded through the biopesticide grant

program, there were **7** additions of crops to biopesticide labels. IR-4 data has been supporting a Section 18 for Anthraquinone in corn and rice.

Initially funded by an EPA Region 2 grant and launched in 2007, IR-4's Biopesticide and Organic Product Label Database had over **28,000** hits and is undergoing continual updating.

Following IR-4's registration efforts for an aflatoxin reduction product (AF36) in U.S. cotton, international regulatory programs in Africa have assisted in a provisional registration of AflaSafe for the reduction of aflatoxin in corn in Nigeria.

Moving Forward

In 2010, and based on EPA timetables, we anticipate the registration for Acetic acid, *Trichoderma hamatum* 382 and plum pox resistant 'HoneySweet' plum (pictured above).



Forward Motion: Strategic Planning, Peer Review, New Initiatives & Social Media

IR-4 spent significant time in 2009 planning for the future. Stakeholder suggestions, captured during the December 2008 Strategic Planning Conference, helped provide the foundation for “**A Strategic Plan for IR-4 2009-2014**” finalized in April 2009. This plan calls for IR-4 to strengthen its existing core programs of food, ornamental and biopesticide research through additional efficacy testing, increased efforts on managing invasive species that attack specialty crops, focusing on activities to reduce or eliminate trade barriers related to pesticide use and supporting organic specialty crop production.

The Strategic Plan also includes a new IR-4 cooperative initiative of providing regulatory assistance to facilitate the registration of pesticides that manage arthropod pests of medical concern.

The new IR-4 Strategic Plan, along with IR-4 activities were reviewed by a panel of experts in May 2009. This Peer Review, sponsored by USDA was intended to examine the structure and function of IR-4 and recommend ways

IR-4 could do a better job serving the needs of its primary stakeholders. The peer review validated IR-4 core programs and new initiatives. This review was very complimentary to IR-4, and the panel provided solid recommendations for improvement, most of which are currently being implemented.

The Strategic Plan and the Peer Review are critical components in the comprehensive reauthorization process of IR-4 by USDA and the State Agricultural Experiment Stations. The proposal for reauthorization was completed in late 2009 and submitted in January 2010.

IR-4 Cooperative Public Health Pesticides (PHP)

Program, initiated in 2009, complements the traditional strengths of IR-4 in fostering safe and effective pest control for small agricultural markets. The program expands the IR-4 mission to include critical pest control niche markets outside agriculture. The initiation of the PHP followed the adoption of an agreement

among IR-4, USDA's Agricultural Research Service, and the US Department of Defense in late 2008. Initial funding for the program was committed by the military's Deployed Warfighter Protection Program, in recognition of the critical need to develop new tools to protect military personnel and civilians from arthropod-borne diseases.

A major milestone was the hiring of Program Manager, Dr. Karl Malamud-Roam, who began work at IR-4 Headquarters September 2009.

Communication

IR-4 continues to expand avenues of communicating its successes and challenges to stakeholders. In 2009, IR-4 added **social media** to its communication tools. Through USDA funding for a global residue study, IR-4 created a training video, on how to conduct trials. This video was launched on **YouTube** as well as **Facebook**.

In 2010, IR-4 will expand its use of social media to include a blog with featured articles and a Twitter page to communicate with our stakeholders.

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