

The  
**IR-4**  
Project  
2008 Annual Report



Providing Safe and Effective  
Pest Management Solutions  
for Specialty Crop Growers

Dear Friends;

On behalf of the hard working and dedicated employees of the IR-4 Project, I am pleased to share with you our accomplishments and impacts from calendar year 2008. The IR-4 Project had a stellar year in carrying out its mission of providing specialty crop growers with registrations of safe and effective pest management products, including the following deliverables:

- Data from the IR-4 Food Program allowed the US Environmental Protection Agency (EPA) to establish **241** permanent pesticide tolerances on **41** chemicals in 2008. Using crop groupings and other extrapolations, these tolerances support **999** likely new use registrations. Included in these were new uses of DuPont's chlorantraniliprole, where IR-4 data was part of the first ever large scale global joint review project.
- Ornamental Horticulture Program data supported **7** new registrations and **1** registration amendment with EPA. Six of these **8** submissions contained efficacy data to support the new registrations/amendments. Manufacturers included IR-4 data in packages that support 4 California registrations. These IR-4 supported successes impacted **3,095** ornamental plant species.
- The Biopesticide Program funded **30** research projects to provide data to support expansions on a number of biopesticide registrations. The program funded **6** Early Stage, **15** Advanced Stage and **9** Demonstration Stage projects. IR-4's efforts supported **18** new or modified products which supported **128** potential new biopesticide uses.

Significant effort goes into developing these deliverables, starting with project planning. In 2008, IR-4 modified its research project priority setting procedures for both the Food and Ornamental Horticulture Programs. The Food Use Workshop was truncated to a two day meeting after implementing a process to focus discussions only on projects with signification interest. The Ornamental Horticulture Workshop transitioned to a once every other year format.

Once priorities are identified, field projects are initiated. In 2008, the IR-4 food program conducted **573** field trials associated with **92** high priority studies. The IR-4 Ornamental Horticulture program conducted **1323** trials with greenhouse and field ornamentals crops in support of company registration decisions.

The quality of IR-4 work is paramount, and all Food Program studies are conducted in compliance with federal Good Laboratory Practice Standards. The IR-4 Quality Assurance Unit conducted **157** field and **73** analytical in-life inspections. Additionally, they audited **651** field data books, **84** analytical summary reports and **97** final/amended reports.

Once received at IR-4 Headquarters, the data is compiled and submitted to the cooperating companies and/or EPA for registration approvals. In 2008 the Food Program submitted **151** data packages involving 36 chemicals to EPA while the Ornamental Horticulture program submitted **12** data packages to registrants.

IR-4 continues the crop group update by submitting a proposal to the EPA to expand the tree nut crop group. EPA ChemSac has also approved the expansion of the fruiting vegetable crop group and this, along with pome fruit, stone fruit, citrus fruit, and oil seed crops are expected to be published in the Federal Register in 2009.

Internationally, IR-4 continues to cooperate with several countries' minor use programs. In 2008, the IR-4 Project conducted **19** cooperative studies with Canada's Pest Management Centre. Canada contributed **47** field trials and IR-4 contributed **137** field trials. This shared workload saves both

countries significant resources. More importantly the cooperation leads to internationally harmonized pesticide tolerances for the US and Canada.

Additionally, IR-4 is actively reformatting existing data and submitting it to the Pesticide Residues/Codex Committee on Pesticide Residues to support establishment of a Joint Meeting on Codex Maximum Residue Levels. In 2008, IR-4 reformatted and submitted over 50 data packages with five active ingredients. IR-4 was awarded a multiyear grant from USDA-Foreign Agriculture Service that will be used to examine global residue zones.

The value of the IR-4 Project was highlighted through an economic analysis of the program. The Center for Economic Analysis at Michigan State University has published two reports concerning the IR-4 Project. In 2007, they reported that the IR-4 Food Program contributed **\$7.7 billion** to the gross domestic product (GDP). A 2008 report found the IR-4 Ornamental Program provided an additional **\$1.2 billion** to the GDP.

The above data helped reinforce the value of IR-4 to the US Congress, and IR-4 was appropriated an additional \$700,000 in 2008. Thanks go to the IR-4 Commodity Liaison Committee and Minor Crop Farmer Alliance members for their efforts in securing this budget increase. These new dollars helped reduce the burden of several years of stagnant funding and restored some cuts experienced in 2007.

This past year, the IR-4 Project Management Committee (PMC) made one of the most difficult decisions in the history of the program: to close the IR-4 Northeast Regional Analytical Laboratory at Geneva, NY. This lab has been operational since 1972 and has provided expert analysis from many skilled scientists and technicians. Losing this expertise and dedication made the decision even harder.

Over several years the program's lab capacity has exceeded the analytical field program requirements. Faced with this imbalance, the PMC agreed to consolidate one regional analytical laboratory into the other three regions. The decision as to which lab to close was made after careful and detailed consideration of each laboratory's existing equipment and needs, institutional support, and capacity to expand.

The IR-4 Project convened a Strategic Planning Conference in December 2008 to focus on future needs and opportunities. Participants believe that maintaining and enhancing the core programs (Food, Ornamental and Biopesticide) is essential. Proposed enhancements include additional efficacy testing, management of invasive species that attack specialty crops and activities that reduce or eliminate trade barriers caused by pesticide residues. These suggestions are being integrated into the next 2009-2011 IR-4 Strategic Plan.

In sharing these accomplishments, IR-4 recognizes the funding contributions from USDA (CSREES, ARS and FAS) and all the State Agricultural Experiment Stations who provide direct funding and hosting of IR-4 field centers, analytical laboratories and management offices. IR-4 also acknowledges the contributions of our associates at EPA, California Department of Pesticide Regulation, our global partners and the crop protection industry. IR-4 would also like to thank the members of the IR-4 Commodity Liaison Committee and the Minor Crop Farmers Alliance for their support. Finally, thanks and credit go to IR-4 personnel in the field, at the laboratories, and in quality assurance, as well as those directing studies and managing the overall program.

With highest regards,

Jerry Baron, Executive Director  
The IR-4 Project

# **ANNUAL REPORT OF THE IR-4 PROJECT (NRSP-4/IR-4)**

## **January 1, 2008 - December 31, 2008**

### **PROJECT**

National Research Service Project No. 4 (NRSP/IR-4) - Specialty Crops Pest Management  
January 1, 2008 to December 31, 2008.

### **COOPERATING AGENCIES AND PRINCIPAL LEADERS**

The IR-4 Project has close working associations with commodity growers/commodity organizations, the state agricultural experiment stations/land grant university system, the crop protection industry, the United States Department of Agriculture services (including Agriculture Research Service, Cooperative State Research, Education and Extension Service, and Foreign Agriculture Service), the US Environmental Protection Agency, California's Department of Pesticide Regulation and Canada's Pest Management Regulatory Agency as well as Pest Management Centre in Agriculture and Agri-Food Canada to provide the latest pest control tools to US specialty crop growers. Cooperating agencies, principal leaders of the project, technical managers and IR-4 State and Federal Liaison Representatives are shown in Attachment 1. Scientists participating in the project are shown in Attachment 2.

### **Background**

The IR-4 Project was organized in 1963 by the Directors of the State Agricultural Experiment Stations (SAES) to facilitate regulatory clearances for crop protection chemicals on specialty or minor food crops (fruits, vegetables, nuts, herbs, etc) as well as minor pesticide uses on major crops (corn, soybean, cotton, small grains, etc.). The companies involved in developing, registering and marketing crop protection chemicals do not view the relatively small markets associated with specialty crops and minor uses as a priority business objective because of the limited potential return on investment.

In 1977, IR-4 expanded its objectives to include registration of pest control products for the protection of nursery, floral and Christmas trees. In 1982 the objective to support biological pest control products, or biopesticides, was added. For all three objectives (Food, Ornamental Horticulture and Biopesticide Programs) IR-4 provides national coordination, technical guidance and funding for field trials, and laboratory expertise to develop residue and (when appropriate) other data required by the US Environmental Protection Agency (EPA) and the crop protection industry to register specialty crop pest management products.

The IR-4 Project is funded by the USDA in partnership with the SAES. The majority of USDA funding for the IR-4 Project comes through the Cooperative State Research Education and Extension Service (CSREES). The Agriculture Research Service (ARS) established a companion minor use program in 1976 to provide further program support. Recently, USDA-Foreign Agriculture Service (FAS) has provided IR-4 resources to work on international activities and support specialty crop exports. The SAES contributes financial resources through Multi-state Research Funds and a significant amount of in-kind contributions by housing IR-4 Field Research Centers, Analytical Laboratories and management offices throughout the United States. The crop protection industry also contributes direct financial resources as well as significant in-kind resources.

Further details on the IR-4 Project can be found on the IR-4 Project's website: <http://ir4.rutgers.edu>

### **Food Program**

The regulatory approval of crop protection chemicals on food crops continues to be the central objective of the IR-4 Project. It is of the utmost importance for IR-4 to address specialty food crop growers' requests for assistance to register new pest management tools for their commodities.

## **Research Activities**

Since 1963, IR-4 stakeholders have submitted **10,260** requests for assistance to the IR-4 Food Program. Of these, **616** are currently considered researchable projects, while the remainder have been addressed through previous research and regulatory submissions or cannot be addressed at this time. In 2008, there were **183** new requests submitted.

The potential researchable projects for 2008 were prioritized in late 2007 at the IR-4 Food Use Workshop, in Tampa, FL. Based on the outcome of this workshop and other priority setting mechanisms, IR-4 scheduled **92** studies consisting of **573** field trials. The specific studies including the test chemical and crop, field trials and research cooperators in 2008 are shown in Attachment 2.

Field trials are assigned to IR-4 Field Research Centers and sample analyses to Analytical Laboratories at the SAES or USDA-ARS facilities. When necessary, other cooperating facilities or contractors are utilized to ensure projects are completed in a timely manner. In most studies, the chemical is applied in the field in a manner that simulates proposed grower use of the product on the target specialty crop. When the crop is at the appropriate stage, samples of the crop are collected and shipped to the analytical laboratory where the amount of chemical remaining in or on the crop is determined. Field and laboratory data from this research are compiled in a regulatory package and submitted to the EPA.

## **Submissions and Success**

IR-4 submitted **151** data packages consisting of **36** chemicals to EPA and/or industry to support new registrations, label changes, or re-registration for specialty food crops (see Attachment 3). EPA has challenged IR-4 to work smarter by bundling as many uses as possible for each chemical into a single petition. IR-4's response to this request is reflected where each year IR-4 bundles are getting larger. This allows EPA to make the most of each review and assessment they do. Some of the submissions had as many as 24 data packages associated with them. IR-4 is also modifying its 30-month timeline to more efficiently adjust for bundled submissions. The new strategy will be to work on as many uses as possible for a given chemical within a year. If this work occurs over two years, then studies for both years will be bundled into the same submission. Bundling saves EPA resources, including science review time and *Federal Register* drafting and publication costs. IR-4 is also working with Registrants to make submissions of a given chemical at the same time with IR-4 submissions.

EPA established a total of **248** permanent tolerances in 2008 based on IR-4 submissions, which still account for over 50% of all new tolerances on already registered products. These tolerances, considering crop grouping and crop definitions, will support up to **999** new specialty crops on product labels. A complete list of these new uses can be found in Attachment 4. Several of the IR-4 successes in 2008 required a significant amount of EPA's time and resources to complete. For example, the ethoprop mint (submitted in 1995) and hops were in the EPA queue for some time and required a significant amount of EPA's resources to conduct a full assessment to ensure the use would be acceptable and to bring these important projects to a successful conclusion. IR-4 data was included in the pilot global review of DuPont's chlorantraniliprole or E2Y45. This success was featured in the July IR-4 Newsletter and is a fine example of utilizing global capital to more effectively review and register a new product. In total, EPA reviewed **41** chemistries for IR-4 in 2008, which compares to **33** in 2007 and **31** chemistries posted for IR-4 petitions by EPA in 2006.

The current number of IR-4 projects in the queue for future submission to EPA is 253 (see Attachment 5). It is expected that approximately 50% of EPA approvals will continue to be associated with IR-4 submissions. EPA continues to post their Multi-Year work plan that includes IR-4 pending submissions at: <http://www.epa.gov/opprd001/workplan/newuse.htm>. EPA essentially finished the entire backlog of IR-4 petitions in 2008, some of which were there since before the Food Quality Protection Act was passed in 1996. Moving forward, EPA will work on IR-4 submissions within a 15 month review timeline. If the submission (use) is considered Reduced Risk, then a 10-month timeline is implemented. IR-4 continues to support EPA's goal of encouraging the use of pesticides that pose less risk to human health and the environment compared to existing conventional alternatives. Since EPA places a high priority on

assisting growers in transitioning to reduced risk approaches for pest management and tracks that progress closely, IR-4 re-established its reduced risk program and made **15** reduced risk requests to EPA from July to December of 2008.

**In summary, the 999 registrations in 2008 bring the 45 year total to 12,056.**

### **Regulatory Compliance**

Good Laboratory Practice Standards (GLP's as noted in Chapter 40, Code of Federal Regulations, Part 160) compliance is paramount to the success of the IR-4 Project's Food Program. Key components of compliance are the activities of the IR-4 Project's Quality Assurance Unit (QAU). The QAU continues to provide monitoring and support to cooperating scientists throughout the United States. Audits of facilities and ongoing field and laboratory procedures provide assurance that IR-4's data will be accepted by the crop protection industry and EPA. IR-4 QAU is comprised of Headquarters QA officers, Regional QA Coordinators, cooperating university QA officers and USDA-ARS QA officers. The IR-4 QAU functions under a set of mutually accepted Standard Operating Procedures by which it maintains consistent monitoring activities of IR-4 GLP research studies. Representatives mutually monitor studies and coordinate activities in an efficient manner.

The Annual QA Planning Meeting was held on March 11-12, 2008 in Davis, CA. At this meeting, the audit plan for 2008 was created. For 2008, regular inspections included **24** facility, **157** field in-life, **73** analytical in-life, **84** analytical summary report/data audits and **651** field data book audits. During the 2008 calendar year, **97** final reports and amended reports were audited.

In addition to their standard duties, members of the IR-4 QAU were involved in EPA GLP compliance inspections. Fourteen IR-4 participating testing sites were audited in 2008 by the EPA for GLP compliance and data integrity. A total of **101** IR-4 related facility inspections for GLP compliance has occurred since April 27, 1997.

### **Crop Grouping Initiative**

Crop grouping enables the establishment of residue tolerances for a group of crops based on residue data from representative crops from the group or subgroup. 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 members of a crop group, but also to develop new crop groups. The ultimate goal is to pursue a harmonized international crop grouping system to facilitate international Maximum Residue Levels (MRLs) and trade.

The Tree nuts crop group 14 was submitted to EPA by IR-4 in May 2008. Analysis of Fruiting Vegetable crop group 8 (submitted in 2005) was conducted by the assigned EPA HED scientist with input from PMRA (Canada). This crop group was then submitted to the EPA's Health Effects Division Chemistry and Safety Advisory Council (ChemSAC) and was reviewed in September of 2008. The next crop group scheduled for submission is the Herb and Spice Group 19 to be followed by Tropical Fruits.

Efforts to harmonize crop grouping systems between the US and Codex continue with the December 2008 Netherlands and US submission of proposals for the Oilseed, Citrus, Pome fruit and Stone fruit crop groups. The proposals were submitted to the Electronic Working Group on the revision of the Codex Classification. These crop groups, along with redrafted proposals for Bulb Vegetable, Berries and Small fruit, Edible Fungi and Fruiting Vegetables, will be presented at the 2009 Codex Committee on Pesticide Residues (CCPR).

### **Seed Technology Initiative:**

2008 saw more activity in the spinosad seed treatment initiative. IR-4 coordinated with Dow AgroSciences to identify efficacy data gaps and arranged a national efficacy program to address voids. In addition, residues in crops grown with spinosad-treated seed were collected and analyzed. Crops were free of spinosad residues at harvest with the exception of carrot roots and tops. Dow AgroSciences will pursue registrations for bulb onion, legumes, corn, and cucurbit crops in 2009.

### **International Activities:**

As global markets for US produced specialty crops continue to grow, so does IR-4's involvement with global harmonization of MRLs and other global issues. IR-4 continues to participate in global organizations that involve pesticide issues. In North America, IR-4 cooperates with Canada and its Minor Use Program. In 2008, 15 new cooperative projects were started that consisted of numerous field trials in both countries. IR-4 also shared ornamental efficacy and crop safety data with Canada. There is good exchange of personnel; AAFC participated in IR-4 meetings and vice versa. The minor use joint review process (EPA/Canada's PMRA) continues to save 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.

On the request of EPA, IR-4 personnel are part of the US delegation to both the Codex Committee of Pesticide Residues and OECD Working Group on Pesticides (WGP). IR-4 plays a key role on the OECD Expert Group on Minor Uses (EGMU).

Over the past several years a number of developed and developing countries have established minor use programs. Additionally, other countries are considering expanding existing minor use programs. The knowledge and expertise of IR-4 is deemed useful as these minor use programs evolve. As noted in last year's report, IR-4, in association with EPA, USDA's Foreign Ag Service (FAS) and Food Agriculture Organization (FAO) sponsored the first Global Minor Use Summit (GMUS) December 3 to 7, 2007 in Rome, Italy. IR-4, along with the Summit co-sponsors continues to work on follow-up action items from this summit. The action items were: (1) development of a global minor use internet portal; (2) delivery of pesticide data development and data review capacity building programs for developing countries; (3) establishment of a Codex Working Group on Specialty Crops and Minor uses; (4) development of several pilot projects, including databases, studies on why MRL's are different and projects on global zoning; and (5) plan for the second Global Minor Use Summit. Significant progress has been made with all action items. Plans are already in the works for the next summit that is expected to convene in July of 2010.

### **Ornamental Horticulture Program**

The Ornamental Horticulture Program continues to support an industry valued at over \$16.9 billion in annual sales. This industry is quite complex and fractured because growers cover many diverse markets including flowers, bulbs, houseplants, perennials, trees, shrubs and more. These plants are grown and maintained in greenhouses, nurseries, commercial/residential landscapes, interiorscapes, Christmas tree farms, and sod farms.

During 2008, the Center for Economic Analysis at Michigan State University studied the impact of the ornamental horticulture program. With direct inputs of slightly over \$1.4 million annually, this program contributes \$1.7 billion to the US annual gross domestic product (GDP).

### **Research Activities**

In 2008, IR-4 scheduled **1323** ornamental horticulture research trials to support registrations in the greenhouse, nursery, landscape, Christmas tree, and forestry industries. Of these **535** were efficacy trials designed to compare different products to manage pests and diseases and to measure the impact of growth regulators; the remaining trials were conducted to determine the level of phytotoxicity to crops with herbicides used to manage common weeds in and around nurseries. Please see Attachment 6 for a complete listing of 2008 field cooperators and Attachment 7 for research activities listed by project.

Table 1. 2008 Ornamental Horticulture Program Research Activities.

Category	2008		
	Efficacy	Crop Safety	Total
Number of Studies (PR Numbers) with Planned Trials	208	381	631
Number of Scheduled Trials	535	788	1,323
Number of Cancelled Trials	15	95	110
Number of Trials in Progress	380	337	717
Number of Completed Trials	136	360	496
Number of Potentially Impacted Crops <sup>a</sup>	14,020	541	14,561

<sup>a</sup> The number of impacted crops is an estimate of the total plant species grown commercially for ornamental uses impacted by the IR-4 data. For example, *Phytophthora cinnamomi* is known to infect 204 plant species. By adding *Phytophthora cinnamomi* to the pesticide product label, IR-4 data has impacted 204 crops.

## Submission and Successes

### **Project Summaries.**

During 2008, **12** data summaries were compiled based upon research reports submitted by researchers from 1976 through 2008. These reports were Coleopteran Efficacy, Dimethenamid-p Crop Safety, Dimethenamid-p + Pendimethalin Crop Safety, Dithiopyr, Crop Safety, F6875 Crop Safety, Isoxaben Crop Safety, Mesotrione Crop Safety, Sethoxydim Crop Safety, Phytophthora Efficacy, Sulfentrazone Crop Safety, Thrips Efficacy, and Trifluralin + Isoxaben Crop Safety. Over 2,270 trials contributed to the writing of these reports. See Appendix 8 for 2008 project summary details.

Table 2. 2008 Ornamental Horticulture Program Research Summaries.

Category	2008		
	Efficacy	Crop Safety	Total
Number of Research Summaries	3	9	12
Number of Trials Contributing to Summaries (USDA-ARS Trials) <sup>a</sup>	989 (80)	1,285 (348)	2,274 (428)

<sup>a</sup> The total number of trials included in the above summaries.

### **Registrations & Label Amendments.**

During 2008, **seven** new label registrations were granted for use on ornamental horticulture crops partially based on data generated through the Ornamental Horticulture Program: Adorn (fluopicolide), BYI-8330 (spirotetramat), DPX-E2Y45 (chlorantraniliprole), Freehand G (dimethenamid-p + pendimethalin) (*represent 85% of crops registered*), Overture (pyridalyl), Pageant (boscalid + pyraclostrobin), and Tower (dimethenamid-p). This represented 54% of the EPA work plan in 2008 for new conventional pesticides and new uses for already registered pesticides for the ornamental horticulture use sites. In addition, **one** label amendment was granted to add new crops, diseases, or insects partially based on IR-4 data submitted to manufacturers: Conserve SC (spinosad). IR-4 data also contributed to **four** registrations in California: Endorse (polyoxin D), Freehand G (dimethenamid-p + pendimethalin), Sanmite (pyridaben), and Segway (cyazofamid). During 2008, Nichino America submitted a package to EPA to classify Tolfenpyrad as reduced risk for greenhouse ornamental horticulture applications. Of the 13 reports included in this package, nine resulted from IR-4's high priority project for Thrips Efficacy. The reduced risk classification for tolfenpyrad applications on greenhouse ornamentals was granted in October, 2008



Table 3. Ornamental Horticulture Program Contributions to 2008 Registrations.

Category	2008		
	Efficacy	Crop Safety	Total
Number of New Product Registrations <sup>a</sup>	5	2	7
Number of Label Amendments <sup>b</sup>	1	0	1
Number of State Registrations <sup>c</sup>	3	1	4
Number of Trials Contributing to Registrations (USDA-ARS Trials) <sup>d</sup>	135 (14)	174 (98)	309 (112)
Number of Impacted Crops <sup>e</sup>	3,028	67	3,095

<sup>a</sup> New products for the ornamental horticulture industry based on data collected through IR-4 and submitted to manufacturers in previous years. In 2008, IR-4 data contributed to seven new product registrations – BYI-8330 (spirotetramat), DPX-E2Y45 (chlorantraniliprole), Freehand G (dimethenamid-p + pendimethalin), Overture (pyridalyl), Pageant (boscalid + pyraclostrobin), Tower (dimethenamid-p), and Adorn (fluopicolide).

<sup>b</sup> Label updates on existing products for the ornamental horticulture industry based on data collected through IR-4 and submitted to manufacturers in previous years. In 2008, IR-4 data contributed to one label amendments – Conserve SC (spinosad).

<sup>c</sup> State registrations and special local needs registrations on federally registered products for the ornamental horticulture industry based on data collected through IR-4 and submitted to manufacturers in previous years. In 2008, IR-4 data contributed to the registration of Endorse (polyoxin D), Freehand G (dimethenamid-p + pendimethalin), Sanmite (pyridaben), and Segway (cyazofamid) in CA.

<sup>d</sup> The total number of trials where data was utilized for registrations. In 2008, 124 (19 USDA-ARS) efficacy trials contributed to the registrations and label amendments of Celero 16WSG, Segway, Safari 20SG, Stature DM, and Subdue Maxx; 182 (65 USDA-ARS) crop safety trials contributed to the Pendulum 2G label amendment.

<sup>e</sup> The number of impacted crops is an estimate of the total plant species grown commercially for ornamental uses impacted by the IR-4 data. For example, *Phytophthora cinnamomi* is known to infect 204 plant species. By adding *Phytophthora cinnamomi* to the Segway label, IR-4 data has impacted 204 crops.

## **Biopesticide and Organic Support Program**

The IR-4 Biopesticide Program has the goal of facilitating the registration of crop protection products classified by EPA as Biopesticides. IR-4 has four major functions in the biopesticide arena including: (1) an “Early Stage” grants program to fund early stage biopesticide proposals - for products whose core data packages have not yet been submitted to EPA; (2) an “Advanced Stage” grants program to fund advance stage biopesticide proposals - for products that have been registered by EPA or are in the registration process and additional data is needed to assist with expansion of the registration to new crops or to new pests; (3) a “Demonstration” grants program to fund large scale demonstration plots to gather information and provide outreach indicating that biopesticides can be a useful tool in pest management systems; and (4) a registration assistance program – to provide small biopesticide companies with regulatory advice and petition preparation assistance.

### **Research Activities**

The Biopesticide Research Program is in its eleventh year of competitive grant funding of projects, amounting to over \$4,575,000 in grants to researchers since its inception. In 2008, the biopesticide grant program funded 6 Early Stage, 15 Advanced Stage and 9 Demonstration Stage projects (See Attachment 9). These were conducted at 28 different universities and USDA research units and nearly 100 product-crop combinations. The demonstration stage grants were co-funded (\$100,000 from IR-4 and EPA) and co-reviewed by EPA and IR-4. EPA provided an additional \$100,000 Technology Transfer Grant for 3 of the demonstration projects to further develop the extension phase of those projects.

### **Submissions and Successes**

In 2008, IR-4 submissions to EPA included acetic acid, *Trichoderma hamatum* 382 and *Aspergillus flavus* for AF36 on pistachio in Arizona (see Attachment 9). In addition, through efficacy research funded through the biopesticide grant program, there were 18 additions of crops or crop groups to biopesticide labels of 128 new biopesticide uses (see Attachment 9).

The Biopesticide and Organic Product Label Database had over 20,000 hits and is undergoing continual updating. The label database was funded through an EPA Region 2 grant.

### **Impact**

The successes, accomplishments and deliverables of the IR-4 Project have been documented by the Food Program and its associated initiatives, the Ornamental Horticulture Program and the Biopesticide and Organic Support Program. Without the existence of the IR-4 Project, fewer safe and effective crop protection chemicals and biological alternatives would be available for use on food and ornamental specialty crops.

The accomplishments of the IR-4 Project are many. Specialty crop growers often report on the impact of the IR-4 Project to their business. Some have said, "Without the IR-4 Project and what they provide, my farm would be out of business". In an effort to capture a solid assessment of program value, in 2007, Michigan State University's Center of Economic Analysis conducted an economic impact study of IR-4's food use activities. Their assessment indicated that the efforts of the IR-4 Project add \$7.7 billion dollars annually to the gross domestic product (GDP). In 2008, they conducted an economic analysis of IR-4's ornamental horticulture program. They concluded this program adds an addition \$1.2 billion annually to the GDP.

### **FY 2008 Appropriations and other funding**

The IR-4 Project receives its funding from several sources. The majority of the direct funding comes from USDA through CSREES and ARS. There are also direct contributions from the state agricultural experiment stations, grants from industry and grants from USDA-Foreign Agriculture Service (FAS).

The FY 2008 CSREES appropriation for the IR-4 Project was increased to \$11.3 million from the FY 2007 appropriation of \$10.6 million. The amount appropriated to the USDA-ARS Minor Use Program remained at \$3.86 million. The Directors of the state agricultural experiment stations, through the Multi-state Research Funds, provided the IR-4 Project with an additional \$481,182. USDA-Foreign Agriculture Service provided IR-4 with \$249,000. The commodity and crop protection industries were able to assist the IR-4 Project by providing approximately \$1.48 million in grants. Total direct funding for the IR-4 Project during calendar year 2008 was \$17.24 million.

This value does not include the substantial in-kind contributions provided by the crop protection industry, commodity groups and state agricultural experiment stations. For example, many IR-4 research units are housed on state funded research stations. The host institutions contribute indirect and direct costs as leverage on the IR-4 funds. The crop protection industry always provides characterized test substance and analytical standards to be used in residue studies and they also provide significant technical assistance. Various commodity groups provide funding directed at specific research on new pest control tools critical for growers of their specialty crops.

## Future Directions

IR-4 conducted a Strategic Planning Conference in December, 2008 to obtain stakeholder input on program directions for 2009 to 2011. This will be the roadmap for IR-4 activities over the next three years. The plan will be finalized in early 2009 and implemented in the near future.

### Activities in 2009

IR-4 will continue to seek input and technical guidance from all of its stakeholders, including state and federal agricultural scientists, state extension agents and specialists, commodity groups, growers, the crop protection industry, food processors, CDPR and the EPA to insure the program maintains its focus on important specialty crop needs. IR-4 goes through an extensive process, including priority setting workshops and reviewing proposals each year to obtain input on the most critical pest control needs of specialty crop producers; and to prioritize those research needs using committees of regional and national level agriculture experts to best match the program's resources with the current unmet needs.

**Food Use Program** research for year 2009 will consist of approximately **112** studies supported by **598** field trials. There are considerably more studies this year compared to the past few years. This is because of a large number of studies only requiring one or two field trials. There are two main reasons for these additional studies. There were a large number of carryover studies due to inclement weather compromising field trials the past few years, thus requiring additional field trials. Secondly, the EPA requested additional data for IR-4 submissions that were acted upon in 2008. These studies had been conducted several years ago, and as a condition of registration IR-4 is required to provide additional residue data. The distribution of 2009 field trials within the IR-4 Project consists of 474 conducted by the IR-4 units associated with the state agricultural experiment stations, 92 conducted by USDA-ARS and 32 by Canada. The Canadian Minor Use Program will be fully managing two cooperative studies, including sponsorship, study director duties and report writing. There is also the possibility of a global project that is still in the planning stages. This research project will have some significant implications for further international harmonization.

IR-4 will continue its commitment to producing high quality, compliant scientific data in order to meet EPA's GLP requirements and in providing EPA with the highest quality of data to which they can base their decisions. IR-4 will enhance compliance by offering GLP and/or QA training sessions for IR-4 personnel and cooperators. A national training session is planned for February 24 and 25, 2009. QA will audit data and reports, review and revise SOP's and strive to further enhance our effectiveness and efficiency. The IR-4 QAU will meet on March 10 and 11, 2009 to establish an inspection schedule for 2009.

**Ornamental Horticulture:** In 2009, the research program will focus on high priority projects established at the 2007 workshop: downy mildew efficacy, bacteria efficacy, coleopteran efficacy, armored scale efficacy, 2008/2009 herbicide crop safety and early post-emergent efficacy for oxalis, bittercress and spurge. The two PGR projects focusing on enhancing woody perennial branching and herbaceous crop shelf life will continue and a meeting with PGR scientists will be held in August, 2009 to determine the 2010 research activities. The 2009 research program also enables each regional coordinator to utilize some discretionary funds on trials of specific regional interest. Most regions will use this funding to enhance weed science research.

For the 2009 **Biopesticide and Organic Support Program**, IR-4 received a total of 58 proposals requesting nearly \$900,000. Out of the 58 proposals 8 are Early Stage, 39 are advanced Stage and 11 are Demonstration Stage proposals. Final decisions on funded proposals will be made by February 2009.

**International:** IR-4 will continue to move forward to assist US specialty crop growers compete in international trade by removing pesticide residues as an impediment for trade. Following up on the successful Global Minor Use Summit, IR-4 will continue to work with other specialty crop programs throughout the world to reduce the data development burden on any single country. IR-4 has received funding from USDA-Foreign Agriculture Service to conduct a global residue study utilizing supervised field trials. The design is to apply the test chemical following the same use directions on tomato at 27

locations across the world. This will provide data and allow scientists to determine if geographic zone affects the ultimate residues in the test crop.

## **PUBLICATIONS/PRESENTATIONS**

Arsenovic, M., F.P. Salzman, D.L. Kunkel, and J.J. Baron. 2008. IR-4 Project: Update on Herbicide Registration (Food Uses). Proceedings Northeastern Weed Science Society, Volume 62, page 95.

Barta, W., Lee, C., Oster, M., White, T., 2008 “Test Substance Characterization for the EPA: What You’ve Always Wanted to Know but Were Afraid to Ask”, Quality Assurance Journal: 11, 196-207.

Braverman, M.P., J.J. Baron, D. L. Kunkel and V. S. Starnier. 2008. Biopesticide Research: Will it End in With Publication or EPA Registration? Symposium on Biological Control of Bacterial Diseases. Orlando, FL

Braverman, M.P. 2008. Microbe versus Microbe: Impact of the IR-4 Project in the World of Biological Control Thai-American Symposium at Chulalongkorn University. Bangkok, Thailand

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Hackett-Fields, K. 2008. Field Facility Closures: Previous Disasters and Typical Plans. National Alliance of Independent Crop Consultants 2008 Annual Meeting, Seattle, WA. Jan. 25, 2008.

Kunkel, D.L., F.P. Salzman, M. Arsenovic, J.J. Baron, M.P. Braverman, and R.E. Holm. 2008. *The Role of IR-4 in the Herbicide Registration Process for Specialty Food Crops*. Weed Technology, 22:373-377.

Ludwig, S., A. Taylor, and C. Palmer. 2008. Evaluation of Insecticide Seed treatments to Manage *Myzus persicae* on Ornamental Kale.

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Ludwig, S., A. Taylor, & C. Palmer. 2008. Evaluation of insecticide treated seeds to control green peach aphids. Southern Nursery Association Research Conference. Atlanta, GA.

Ludwig, S., A. Taylor, & C. Palmer. 2008. Evaluation of insecticide seed treatments to manage *Myzus persicae* on ornamental kale. Pan Pacific Conference on Pesticide Science. Honolulu, HI.

Novack, S. 2008. IR-4 Newsletter Vol. 39 No. 1, January 2008.

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Novack, S. 2008. IR-4 Newsletter Vol. 39 No. 4, October 2008.

Palmer, C.L., J. Baron, and E. Vea. 2008. Update on the 2007 Weed Science Research Program and 2008 Research Priorities. Proceedings of the 63<sup>rd</sup> Northeastern Weed Science Society.

Palmer, C. L. 2008. Update on the 2008/2009 Entomology and Plant Pathology Research Priorities for IR-4. Presentations at the Ornamentals Workshop hosted by North Carolina State Univeristy. 9/23/08.

Palmer, C. L. 2008. IR-4 Phytophthora Efficacy Research. Cream Ridge Twilight Meeting. 8/28/08.

Palmer, C. L. and S. Novack. 2008. The IR-4 Ornamental Horticulture Program Brochure.

Salzman, F.P., M. Arsenovic, D.L. Kunkel, W. Barney, and R. Leonard. 2008. IR-4 Project: Weed Science Control Update. Proceedings WSSA, Volume 48, p. 256.

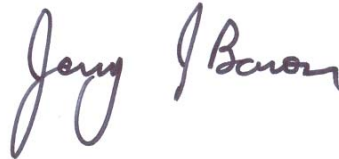
Starner, V.R., J.J. Baron, D.L. Kunkel and S. Novack. 2008. Invited lecture "The IR-4 Project at Rutgers" 5/5/08 in Rutgers Entomology course "Agricultural Entomology and Pest Management" taught by Dr. George Hamilton.

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White, T.L., 2008 "SOPs: Development and Revision", Invited presentation at the IR-4 Southern Region Training program, Raleigh, NC, 2/21/08.

December 31, 2008

Approved by:



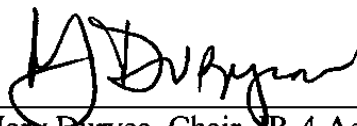
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**J.J. Baron, Executive Director  
IR-4 Project, NJ Agricultural Experiment Station  
Rutgers, The State University of New Jersey**



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**M.R. Marshall, Chair,  
IR-4 Project Management Committee  
University of Florida**



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**Mary Duryea, Chair, IR-4 Administrative Advisers  
University of Florida**

## **ATTACHMENT 1**

### **Participants in the Process**

**Growers/Commodity Organizations/Food Processors** – These are the primary customers for the IR-4 Project services. A concerted effort is being made to seek additional input from growers/commodity group representatives for establishing research priority setting policies. This is in addition to the direct feedback from the IR-4 **Commodity Liaison Committee (CLC)**. They provide input to the IR-4 Project Management Committee on overall operations and program direction. They are often effective communicators to Congress on the importance of the IR-4 Project and its deliverables to specialty crop agriculture in the United States. Members include:

**Dr. Michael Aerts**, Florida Fruit and Vegetable Association  
**Mr. Mark Arney**, Nat'l Watermelon Promotion Board  
**Mr. Kirk Baumann**, Ginseng Board of Wisconsin  
**Dr. Lori Berger**, California Specialty Crops Council  
**Dr. Michael Bledsoe**, Village Farms, L.P.  
**Dr. A. Richard Bonanno**, Bonanno Farm Trust  
**Mr. Bruce Buurma**, Buurma Farms Inc.  
**Dr. Thomas G. Davenport**, National Grape Cooperative  
**Dr. Brian R. Flood**, Del Monte USA  
**Mrs. Ann E. George**, Washington Hop Commission  
**Mr. Hank Giclas**, Western Growers Association  
**Mr. John Keeling**, National Potato Council  
**Mr. Phil Korson**, Cherry Marketing Institute  
**Mr. Rocky Lundy**, Mint Industry Research Council  
**Mr. Reed Olszack**, Tropical Fruit Growers of South Florida Inc.  
**Mr. Ray Prewett**, Texas Vegetable Association  
**Mr. Ray Ratto**, Ratto Brothers  
**Ms. Lin Schmale**, Society of American Florists  
**Mr. Todd Scholz**, USA Dry Pea & Lentil Council  
**Dr. Alan Schreiber**, Agriculture Development Group, Inc.  
**Dr. Marc Tefteau**, American Nursery and Landscape Assoc.  
**Mr. Dave Trinkka**, MBG Marketing

**Crop Protection Industry** - Without the cooperation of the biopesticide and chemical companies who discover, develop, register, and market their new technologies, IR-4 would not be able to help specialty crop growers have availability to the newest crop protection tools. IR-4 personnel continue to have managerial and technical review meetings with the crop protection industry companies. In 2008, meetings were held with 30 different companies.

**State Agricultural Experiment Stations/Land Grant Universities** – The State Agricultural Experiment Stations are the cornerstone of the IR-4 Program. This group provides a limited amount of direct support (\$481,000 through Multi-State Research Funds) plus a significant amount of resources via in-kind support by hosting and co-funding the IR-4 Field Research Sites, the IR-4 analytical laboratories and the IR-4 regional and national management offices. Specific acknowledgement goes to the directors of the SAES in CA, FL, MI, and NY that host regional IR-4 offices and New Jersey that hosts IR-4 Project Headquarters.

**USDA (CSREES & ARS)** – These two units of USDA provide the majority of the direct resources that IR-4 utilizes to operate. Additionally, numerous ARS personnel are directly involved in the IR-4 research effort at three analytical laboratories and 8 field research centers.

## **ATTACHMENT 1-Continued**

**Agriculture and Agri-Food Canada (AAFC) Pest Management Centre.** The partnership between IR-4 and AAFC'S Pest Management Centre continued to flourish in 2008. There are numerous other cooperative projects that are in the process of being completed and submitted to both countries' regulatory agencies. These projects are the culmination of year-round efforts to work cooperatively. Members of the AAFC Pest Management Centre routinely join IR-4 at meetings with the crop protection industry. Additionally, several AAFC team members attended the IR-4 Food Use and Ornamental Workshops as well as the National Research Planning Meeting to facilitate better cooperation.

**EPA.** - IR-4 continues to work closely with EPA to meet the needs of growers that is to have an arsenal of safe and effective pest management tools. We continue to have Technical Working Group (TWG) meetings where EPA and IR-4 scientists discuss new regulatory approaches and ways to enhance the ongoing petition submission/review process, as well as ways to improve regulatory efficiencies. IR-4 continues to assist EPA in their effort to update data requirements, specifically the number and location of field trials. Working with EPA, **California's Department of Pesticide Regulation (CDPR) and Health Canada's Pest Management Regulatory Agency (PMRA)** participates in the many aspects of minor use pesticide registration. CDPR and PMRA have been active members of the TWG since 2000. They are productive contributors to the overall accomplishments as noted in the EPA section through domestic and NAFTA work share programs on IR-4 petitions. CDPR continues its commitment to provide residue chemistry reviews for certain IR-4 petitions. PMRA staff continued to support the activities of AAFC Pest Management Centre on research projects selected to partner with IR-4 for joint resource sharing. The minor use joint review process stipulates an expedited review timeline. It is expected that as many as 15 joint minor use reviews will eventually take place each year between the EPA and Canada's PMRA, with the final result of providing simultaneous registrations on new products in both countries. These efforts along with support from CDPR help to provide more resources to EPA resulting in an even higher number of IR-4 project completions.

### **IR-4 LEADERSHIP**

#### **Project Management Committee (PMC):**

**Dr. Jerry J. Baron**, IR-4 Project Headquarters – IR-4 Project Executive Director  
**Dr. Douglas Buhler**, Michigan State University – Administrative Advisor, North Central Region  
**Dr. Mary Duryea**, University of Florida - Administrative Advisor, Southern Region  
**Dr. Robert Hollingworth**, Michigan State University – Regional Director, North Central Region  
**Dr. Monte Johnson**, USDA-CSREES  
**Mr. Rocky Lundy**, Mint Industry Research Council – Commodity Liaison Committee Chair  
**Dr. Maurice Marshall**, University of Florida - Regional Director, Southern Region & PMC Chair  
**Dr. Marion Miller**, University of California, Davis - Regional Director, Western Region  
**Dr. Michael Parrella**, University of California, Davis - Administrative Advisor, Western Region  
**Dr. Mark Robson**, Rutgers University - Administrative Advisor, Northeast Region  
**Dr. Sally Schneider**, USDA-ARS - Administrative Advisor, ARS  
**Dr. Paul Schwartz, Jr.** USDA-ARS – Director Minor Use Program  
**Dr. David Soderlund**, Cornell University - Regional Director, Northeast Region

## **ATTACHMENT 1- Continued**

### **IR-4 Project Headquarters (HQ)**

*IR-4 Headquarters is located at the 500 College Road East, Suite 201W, Princeton, NJ 08540; (732) 932-9575*

**Dr. Marija Arsenovic** – Manager, Weed Science Activities  
**Ms. Tammy W. Barkalow** – Assistant Director, Quality Assurance  
**Mr. Bill Barney** – Manager, Crop Grouping  
**Dr. Jerry J. Baron** – Executive Director  
**Dr. Michael P. Braverman** – Manager, Biopesticides and Organic Support Program  
**Ms. Uta Burke** – Administrative Support  
**Dr. Debbie Carpenter** – Study Director/Research Coordinator  
**Dr. Johannes Corley** – Study Director/Research Coordinator  
**Dr. Keith W. Dorschner** – Manager, Entomology Activities  
**Ms. Cheryl L. Ferrazoli** – Administrative Support  
**Ms. Jane Forder** – Quality Assurance  
**Ms. Kathryn A. Hackett-Fields** – Study Director/Research Coordinator  
**Ms. Lori Harrison** – Administrative Support  
**Ms. Kathryn Homa** – Study Director and Research Coordinator  
**Ms. Diane K. Infante** – Data Manager and Administrative Support  
**Dr. Daniel L. Kunkel** – Associate Director, Registrations  
**Mr. Raymond Leonard** – Study Director/Research Coordinator  
**Ms. Sherri Nagahiro** – Business Manager  
**Ms. Sherri Novack** – Manager, Communications and Outreach  
**Dr. Cristi Palmer** – Manager, Ornamental Horticulture Program  
**Ms. Bharti Patel** – Quality Assurance  
**Mr. Kenneth S. Samoil** – Study Director/Research Coordinator  
**Ms. Karen Sims** – Administrative Support  
**Dr. Van R. Starner** – Assistant Director, Research Planning  
**Ms. Tracey Switek** – Study Director and Research Coordinator  
**Dr. David C. Thompson** - Manager, Plant Pathology Activities  
**Ms. Juliet Thompson** – Administrative Support

### **Field Coordinators (Regional and ARS)**

**Ms. Edith Lurvey**, Cornell University – Northeast Region  
**Dr. Charles Meister**, University of Florida –Southern Region  
**Dr. Satoru Miyazaki**, Michigan State University – North Central Region  
**Dr. Paul H. Schwartz Jr.**, USDA-ARS – ARS Office of Minor Use Pesticides  
**Ms. Rebecca Sisco**, University of California, Davis – Western Region



## **ATTACHMENT 1- Continued**

### **Laboratory Coordinators (Regional and ARS)**

**Dr. Wlodzimierz (Wlodek) Borejsza-Wysocki**, Cornell University – Northeast Region  
**Mr. Thomas Hendricks**, USDA-ARS – Tifton, GA  
**Dr. Matt Hengel**, University of California, Davis – Western Region  
**Dr. Wayne Jiang**, Michigan State University – North Central Region  
**Ms. Emy Pfeil**, USDA-ARS, - Beltsville, MD  
**Mr. T. Todd Wixson**, USDA-ARS – Wapato, WA  
**Ms. Jau Yoh**, University of Florida, Southern Region

### **Regional Quality Assurance Unit Coordinators**

**Ms. Barbara Anderson**, Cornell University – Northeast Region  
**Dr. Zhongxiao (Michael) Chen**, Michigan State University – North Central Region  
**Ms. Kathleen Knight**, University of Florida –Southern Region  
**Mr. Jim McFarland**, University of California, Davis – Western Region

### **Additional Technical Staff**

**Dr. Diane Bradway** - Quality Assurance Consultant  
**Mr. Martin Beran** – Associate Quality Assurance Coordinator, Western Region  
**Ms Mary Kay Erickson** - Quality Assurance Consultant  
**Mr. Stephan Flanagan** – Associate Field Coordinator, Western Region  
**Ms. Regina Hornbeckle** – Quality Assurance USDA-ARS  
**Dr. Vince Hubert** – Manager, IR-4 Satellite Laboratory, Washington State University  
**Dr. Bryan Jensen** – Quality Assurance Consultant  
**Mr. Kenneth Kanagalinyam** – Quality Assurance Consultant  
**Dr. Derek Killilea** – Quality Assurance Consultant  
**Dr. Q. Li** - Manager, IR-4 Satellite Laboratory, University of HI  
**Ms. Mary Lynn** – Quality Assurance Consultant  
**Mr. John Obrist**- Quality Assurance Consultant

### **State and Federal IR-4 Liaisons Representatives**

#### **Northcentral Region**

Dr. K. Al-Khatib	KS (Food Crops)
Dr. R. Becker	MN
Dr. S. Clay	SD
Dr. R. Cloyd	KS (Ornamentals)
Dr. D. Doohan	OH
Dr. R. Groves	WI
Dr. D. Engl	IN (Co-Liaison)
Dr. R. Hartzler	IA
Dr. D. Heider	WI
Dr. T. Jordon	IN (Co-Liaison)
Dr. S. Kamble	NE
Dr. C. Krause	USDA-ARS
Dr. S. Miyazaki	MI
Dr. M. Reding	USDA-ARS
Dr. D. Williams	IL
Dr. M. Williams	USDA-ARS
Dr. R. Zollinger	ND
VACANT	MO

## **ATTACHMENT 1- Continued**

### **Northeast Region**

Dr. J. Allen	DC
Dr. E. Beste	MD
Dr. F. Caruso	MA
Dr. R. Chandran	WV
Mr. R. Frank	USDA-ARS
Dr. R. Grube	NH
Dr. A. Hazelrigg	VT
Dr. P. Heller	PA
Ms. E. Lurvey	NY
Dr. J. Locke	USDA-ARS
Dr. T. Mervosh	CT
Dr. W. Reissig	NY
Dr. R. Webb	USDA-ARS
Dr. S. Whitney King	DE
Dr. D. Yarborough	ME
VACANT	NJ

### **Southern Region**

Dr. R. Bellinger	SC
Dr. R. Bessin	KY
Dr. J. Boudreaux	LA
Dr. N. Burgos	AR
Dr. C. Collison	MS
Dr. S. Culpepper	GA
Dr. R. Davis	USDA-ARS
Dr. C. Gilliam	AL
Mr. C. Luper	OK
Mr. M. Matocha	TX (Food Crops)
Dr. S. Ludwig	TX (Ornamentals)
Dr. C. Meister	FL
Dr. D. Monks	NC
Dr. A. Simmons	USDA-ARS
Dr. A. Wszelaki	TN
Dr. M. Weaver	VA
Mr. T. Webster	USDA-ARS
VACANT	PR

### **Western Region**

Dr. R. Boydston	USDA-ARS
Dr. M. Burrows	MT
Mr. M. Craig	NM
Mr. J. Davison	NV
Dr. H. Deer	UT
Mr. J. DeFrancecso	OR
Dr. M. Ferrell	WY
Dr. N. Grunwald	USDA-ARS
Dr. R. Hirnyck	ID
Dr. P. Kaspari	AK
Dr. M. Kawate	HI
Dr. S. McDonald	CO
Dr. R. Miller	GU
Dr. J. Munyaneza	USDA-ARS
Dr. J. Palumbo	AZ
Ms. R. Sisco	CA
Dr. D. Walsh	WA

**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09939	08-MIR04	A	SAMOIL	ACETAMIPRID	ASPARAGUS (SPEARS)	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD17	Ross, Marylee	08-MI34	Zandstra, Dr. Bernard H.		08-CA35	Stewart, D.	
		08-MI33	Zandstra, Dr. Bernard H.		08-CA37	Stewart, D.	
					08-WA06	Groenendale, D.	
					08-ID05	Meeks, Mr. Will	
07817	08-NYR01	A	THOMPSON	ACIBENZOLAR	STRAWBERRY	LOW GROWING BERRY SUBGROUP (13-07G)	12/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY14	Palmer, Mr. W.H.	08-WI23	Heider, Daniel J.	08-FL06	Studstill, David	08-CA*98	Benzen, Ms. Sharon D.
				08-NC22	Batts, Roger B.	08-CA*97	Benzen, Ms. Sharon D.
						08-CA99	Ennes, D. (Kearney)
						08-OR09	Koskela, Ms. Gina
08846	08-MIR10	B	DORSCHNER	BIFENAZATE	BASIL	HERB SUBGROUP (19A)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
				08-SC*03	Wade, Paul	08-CA*85	Benzen, Ms. Sharon D.
				08-GA*06	Fraelich, Ben		
				08-GA*07	Fraelich, Ben		
09006	08-TIR01	A	SAMOIL	BUPROFEZIN	GREENS (MUSTARD)	LEAFY BRASSICA GREENS SUBGROUP (05B)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD08	Ross, Marylee			08-FL09	Studstill, David	08-CA80	Skiles, Keri
				08-GA*08	Fraelich, Ben	08-CA81	Boutwell, Brent
09226	07-TIR02	A	SAMOIL	BUPROFEZIN	CANTALOUPE	MELON SUBGROUP (09A)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	

**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09226	07-TIR02	A	SAMOIL	BUPROFEZIN	CANTALOUPE	MELON SUBGROUP (09A)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
						08-ON23 Weber-Henricks, Mary 08-ON24 Weber-Henricks, Mary	
06143	07-TIR03	A	SAMOIL	BUPROFEZIN	CUCUMBER (GH & FIELD)	SQUASH/CUCUMBER SUBGROUP (09B)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
						08-ON22 Riddle, Geoff 08-BC07 Brookes, Ms. Victoria 08-ON21 Riddle, Geoff	
09278	07-TIR04	A	SAMOIL	BUPROFEZIN	SQUASH (SUMMER)	SQUASH/CUCUMBER SUBGROUP (09B)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
						08-QC09 Trudeau, M. 08-BC08 Brookes, Ms. Victoria	
10046	08-FLR08	A	DORSCHNER	CHLORANTRANILIPROLE	BEAN (SNAP)	EDIBLE PODDED LEGUME SUBGROUP (06A)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY29	Bellinder, Dr. Robin	08-WI21	Chapman, S.	08-FL29	Studstill, David	08-WA03	Groenendale, D.
08-MD15	Ross, Marylee	08-OH*12	Horst, Leona			08-CA01	Stewart, D.
						08-ON15	White, Peter
						08-ON14	White, Peter
10003	08-FLR06	A	DORSCHNER	CHLORANTRANILIPROLE	PEA (SUCCULENT)	EDIBLE PODDED LEGUME SUBGROUP (06A)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY28	Bellinder, Dr. Robin					08-ID01	Meeks, Mr. Will
						08-CA*25	Benzen, Ms. Sharon D.
						08-OR22	Koskela, Ms. Gina
						08-ON25	Grohs, Robert
						08-ON12	White, Peter
						08-MB01	Fuchs, Melissa

Continued on next page...

**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
10003	-FLR06	A	DORSCHNER	CHLORANTRANILIPROLE	PEA (SUCCULENT)	EDIBLE PODDED LEGUME SUBGROUP (06A)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						<u>CANADA - FRD</u> 08-ON11 White, Peter 08-ON10 White, Peter 08-NS04 Peill, Heather	
10004	08-FLR07	B	DORSCHNER	CHLORANTRANILIPROLE	CUCUMBER (GH)	SQUASH/CUCUMBER SUBGROUP (09B)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD21 Ross, Marylee				08-FL46 Studstill, David		08-CO12 Loiz, Meghan	
06873	08-NYR08	A	CARPENTER	CLETHODIM	APPLE	POME GROUP (11)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-NY09 Humphreys, Harry 08-NY07 Bellinder, Dr. Robin 08-NY08 Bellinder, Dr. Robin 08-NY34 Palmer, Mr. W.H.		08-MI04 Zandstra, Dr. Bernard H.				08-CA100 Ennes, D. (Kearney) 08-WA19 Groenendale, D. 08-ID12 Meeks, Mr. Will 08-WA20 Groenendale, D. 08-CO05 Loiz, Meghan 08-WA*21 Harvey, John	
06874	08-YAR02	B	CARPENTER	CLETHODIM	PEAR	POME GROUP (11)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-NY10 Bellinder, Dr. Robin						08-WA18 Groenendale, D. 08-CA101 Ennes, D. (Kearney) 08-OR07 Koskela, Ms. Gina 08-ID13 Meeks, Mr. Will 08-CA102 Stewart, D.	

**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
06948	08-YAR03	B	CARPENTER	CLETHODIM	PLUM	STONE GROUP (12)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR - FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-MI06	Zandstra, Dr. Bernard H.		08-CA106 Stewart, D. 08-CA105 Stewart, D. 08-OR08 Koskela, Ms. Gina 08-CA104 Skiles, Keri 08-CA103 Skiles, Keri		
03623	07-NYR10	B	CORLEY	CLOPYRALID	APPLE	POME GROUP (11)	02/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR - FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
					08-WA24 Groenendale, D. 08-CO04 Loiz, Meghan 08-WA*23 Harvey, John 08-ID15 Meeks, Mr. Will 08-CA111 Ennes, D. (Kearney) 08-ID14 Meeks, Mr. Will		
10005	08-BER02	A	CORLEY	CLOTHIANIDIN	STRAWBERRY	LOW GROWING BERRY SUBGROUP (13-07G)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR - FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-ME06	Yarborough, Dr. Dave			08-FL47 Studstill, David 08-NC03 Batts, Roger B.	08-OR23 Koskela, Ms. Gina 08-CA*12 Benzen, Ms. Sharon D. 08-CA*11 Benzen, Ms. Sharon D. 08-CA10 Ennes, D. (Kearney)	08-ON16 Weber-Henricks, Mary 08-ON17 Weber-Henricks, Mary 08-ON18 Weber-Henricks, Mary	
10037	08-CAR01	A	BARNEY	CYAZOFAMID	LETTUCE (HEAD & LEAF)	LEAFY GREENS SUBGROUP (04A)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR - FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD23	Ross, Marylee			08-FL49 Studstill, David 08-FL50 Studstill, David	08-CA02 Skiles, Keri 08-NM11 Craig, Maury (NMSU) 08-CA07 Boutwell, Brent 08-CA06 Skiles, Keri	08-ON20 Pogoda, Mitch 08-ON19 Riddle, Geoff 08-BC06 Brookes, Ms. Victoria 08-QC07 Trudeau, M.	
08-NY31	Bellinder, Dr. Robin						

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**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
10037	-CAR01	A	BARNEY	CYAZOFAMID	LETTUCE (HEAD & LEAF)	LEAFY GREENS SUBGROUP (04A)	01/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-CA*22 Benzen, Ms. Sharon D.	
						08-CA19 Boutwell, Brent	
						08-CA*21 Benzen, Ms. Sharon D.	
						08-CA03 Boutwell, Brent	
						08-NM14 Craig, Maury (NMSU)	
						08-NM12 Craig, Maury (NMSU)	
						08-CA*05 Benzen, Ms. Sharon D.	
						08-CA*04 Benzen, Ms. Sharon D.	
						08-QC08 Trudeau, M.	
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10006	08-MIR01	A	THOMPSON	CYPRODINIL + FLUDIOXONIL	SPINACH	LEAFY GREENS SUBGROUP (04A)	01/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD22 Ross, Marylee				08-TX*02 McCommas, Mr. David		08-CA18 Boutwell, Brent	
08-NY30 Bellinder, Dr. Robin				08-TX03 Gregg, Ms. Lori		08-CO13 Loiz, Meghan	
08-MD22 Ross, Marylee				08-TX03 Gregg, Ms. Lori		08-CA*17 Benzen, Ms. Sharon D.	
08-NY30 Bellinder, Dr. Robin				08-SC*07 Wade, Paul		08-CA18 Boutwell, Brent	
				08-SC*07 Wade, Paul		08-CA*17 Benzen, Ms. Sharon D.	
				08-TX*02 McCommas, Mr. David		08-CO13 Loiz, Meghan	
						08-ON13 Riddle, Geoff	
						08-QC04 Trudeau, M.	
						08-ON13 Riddle, Geoff	
						08-BC02 Brookes, Ms. Victoria	
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08643	08-BER04	A	CARPENTER	DIFLUBENZURON	CARROT	ROOT SUBGROUP (01AB)	01/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
		08-OH*04 Horst, Leona		08-TX*35 McCommas, Mr. David		08-WA*17 Harvey, John	
				08-GA*04 Fraelich, Ben		08-CA87 Boutwell, Brent	
				08-GA*05 Fraelich, Ben		08-CA88 Ennes, D. (Kearney)	
						08-CA*90 Benzen, Ms. Sharon D.	
						08-CA*89 Benzen, Ms. Sharon D.	
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09774	07-BER02	A	CARPENTER	DIFLUBENZURON	LEMON	CITRUS GROUP (10)	01/07
<b>Data Requirements:</b>							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						<u>CANADA - FRD</u>	

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2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09774	07-BER02	A	CARPENTER	DIFLUBENZURON	LEMON	CITRUS GROUP (10)	01/07
<u>Data Requirements:</u>							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u> 08-CA58 Mitchell, Michelle	<u>CANADA - FRD</u>	
A8678	08-BER01	A	BARNEY	DIFLUBENZURON	ALFALFA	NONGRASS GROUP (18)	02/04
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u> 08-ID11 Meeks, Mr. Will 08-CO09 Loiz, Meghan 08-CA84 Boutwell, Brent	<u>CANADA - FRD</u>	
08645	07-MIR07	A	LEONARD	DINOTEFURAN	ONION (DRY BULB)	ONION, BULB SUBGROUP (03-07A)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u> 08-OR25 Koskela, Ms. Gina	<u>CANADA - FRD</u>	
09832	08-MIR03	A	SAMOIL	DINOTEFURAN	CRANBERRY	LOW GROWING BERRY SUBGROUP W/STRAWBERRY (13-07GH)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u> 08-MA04 Sylvia, M. 08-MA02 Sylvia, M.		<u>NCR - FRD</u> 08-WI11 Chapman, S. 08-WI12 Chapman, S.		<u>SOR-FRD</u>	<u>WSR - FRD</u> 08-OR18 DeFrancesco, Mr. Joe	<u>CANADA - FRD</u>	
08939	08-BER03	B	LEONARD	EMAMECTIN BENZOATE	SQUASH	SQUASH/CUCUMBER SUBGROUP (09B)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u> 08-NY16 Bellinder, Dr. Robin		<u>NCR - FRD</u> 08-WI05 Chapman, S.		<u>SOR-FRD</u> 08-GA*09 Fraelich, Ben 08-FL10 Studstill, David 08-SC*04 Wade, Paul 08-TX*32 McCommas, Mr.David	<u>WSR - FRD</u> 08-WA*15 Harvey, John 08-CA74 Skiles, Keri	<u>CANADA - FRD</u>	

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2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
07137	08-BER05	A	LEONARD	EMAMECTIN BENZOATE	BASIL	HERB SUBGROUP (19A)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD04	Ross, Marylee			08-GA*03	Fraelich, Ben	08-CA*107	Benzen, Ms. Sharon D.
08-NY11	Bellinder, Dr. Robin			08-SC*02	Wade, Paul	08-NM03	Craig, Maury (NMSU)
				08-FL05	Studstill, David		
				08-NC23	Batts, Roger B.		
09991	08-CAR03	A	BARNEY	EPTC	WATERMELON	MELON SUBGROUP (09A)	01/08
<u>Data Requirements:</u> 10							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
		08-OH*11	Horst, Leona	08-TX*06	McCommas, Mr. David		
				08-TX*07	McCommas, Mr. David		
				08-GA*11	Fraelich, Ben		
				08-SC*09	Wade, Paul		
				08-GA*14	Fraelich, Ben		
09918	08-NYR06	A	ARSENOVIC	ETHOFUMESATE	CARROT	ROOT SUBGROUP (01AB)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
		08-MI29	Zandstra, Dr. Bernard H.	08-FL33	Studstill, David	08-WA*08	Harvey, John
				08-TX18	Gregg, Ms. Lori	08-CA*43	Benzen, Ms. Sharon D.
						08-CA45	Boutwell, Brent
						08-CA44	Skiles, Keri
09882	07-NYR13	A	ARSENOVIC	ETHOFUMESATE	SMALL GRAINS	GRAIN GROUP (15-16)	02/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-WA11	Groenendale, D.
						08-CO10	Loiz, Meghan
						08-CA50	Boutwell, Brent
						08-ID07	Meeks, Mr. Will

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<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
10049	08-CAR11	A	SAMOIL	ETHOPROP	MINT	MISCELLANEOUS COMMODITY (99)	03/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-ID03 Meeks, Mr. Will 08-WA*02 Harvey, John 08-WA01 Groenendale, D.	
						<u>CANADA - FRD</u>	
A8873	08-CAR13	A	DORSCHNER	ETOXAZOLE	HOPS	MISCELLANEOUS COMMODITY (99)	04/08
<u>Data Requirements:</u>							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-OR11 Koskela, Ms. Gina	
						<u>CANADA - FRD</u>	
08895	08-MIR05	A	CORLEY	FENAMIDONE	BEAN (SNAP)	EDIBLE PODDED LEGUME SUBGROUP (06A)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-NY15 Bellinder, Dr. Robin		08-WI04 Heider, Daniel J. 08-MI08 Zandstra, Dr. Bernard H. 08-WI03 Heider, Daniel J.		08-NC21 Batts, Roger B. 08-FL07 Studstill, David		08-WA16 Groenendale, D. 08-CA86 Boutwell, Brent	
						<u>CANADA - FRD</u>	
09530	08-MIR06	A	CORLEY	FENAMIDONE	BEAN (LIMA)	SHELLED PEA/BEAN SUBGROUP (06BC)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD09 Ross, Marylee 08-MD24 Ross, Marylee 08-MD10 Ross, Marylee		08-WI07 Heider, Daniel J.		08-NC30 Batts, Roger B. 08-TN10 Thompson, A.		08-CA64 Ennes, D. (Kearney) 08-ID10 Meeks, Mr. Will 08-CA63 Stewart, D.	
						<u>CANADA - FRD</u>	
06220	08-NYR07	A	CORLEY	FENOXAPROP-ETHYL	GRASSES (SEED CROP)	GRASS GROUP (17)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-OR04 Koskela, Ms. Gina 08-OR05 Koskela, Ms. Gina	
						<u>CANADA - FRD</u>	

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2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
06220	-NYR07	A	CORLEY	FENOXAPROP-ETHYL	GRASSES (SEED CROP)	GRASS GROUP (17)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u> 08-WA22 Groenendale, D. 08-OR06 Koskela, Ms. Gina	<u>CANADA - FRD</u>	
09942	08-MIR09	B	SAMOIL	FENPYROXIMATE	BEAN (SNAP)	EDIBLE PODDED LEGUME SUBGROUP (06A)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY24	Bellinder, Dr. Robin	08-OH*09	Horst, Leona	08-FL37	Studstill, David	08-WA*07	Harvey, John
		08-OH*10	Horst, Leona	08-GA*13	Fraelich, Ben	08-CA38	Stewart, D.
		08-WI17	Chapman, S.				
10007	08-CAR06	A	SAMOIL	FENPYROXIMATE	AVOCADO	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-FL48	Crane, Dr. Jonathan H.	08-CA15	Ennes, D. (Kearney)		
				08-CA16	Ennes, D. (Kearney)		
				08-CA14	Mitchell, Michelle		
				08-CA13	Mitchell, Michelle		
08551	08-NYR10	A	SAMOIL	FLONICAMID	CUCUMBER (GH)	SQUASH/CUCUMBER SUBGROUP (09B)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD05	Ross, Marylee			08-TN04	Thompson, A.	08-CO06	Loiz, Meghan
						08-ON03	Weber-Henricks, Mary
09604	08-NYR03	A	SAMOIL	FLONICAMID	STRAWBERRY	LOW GROWING BERRY SUBGROUP (13-07G)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY35	Humphreys, Harry	08-WI09	Chapman, S.	08-FL24	Studstill, David	08-CA61	Ennes, D. (Kearney)
				08-NC13	Batts, Roger B.	08-CA*60	Benzen, Ms. Sharon D.

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2008 IR-4 SCHEDULED PROJECTS

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09604	-NYR03	A	SAMOIL	FLONICAMID	STRAWBERRY	LOW GROWING BERRY SUBGROUP (13-07G)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-OR12 Koskela, Ms. Gina 08-CA*59 Benzen, Ms. Sharon D.	
<u>CANADA - FRD</u>							
09783	08-WUR01	A	SAMOIL	FLONICAMID	CANOLA	MISCELLANEOUS COMMODITY (99)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
		08-SD05 Clay, Dr. Sharon				08-WA10 Groenendale, D.	
<u>CANADA - FRD</u>							
02328	08-FLR01	A	BARNEY	FLUAZIFOP-P-BUTYL	SWEET POTATO	TUBEROUS/CORM SUBGROUP (01CD)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD01 Ross, Marylee				08-FL02 Studstill, David 08-NC01 Batts, Roger B. 08-NC26 Batts, Roger B. 08-TN03 Thompson, A. 08-NC25 Batts, Roger B. 08-TX37 Gregg, Ms. Lori		08-CA110 Skiles, Keri	
<u>CANADA - FRD</u>							
03432	08-HIR01	A	BARNEY	FLUAZIFOP-P-BUTYL	COFFEE	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-HI04 Kam, James	
<u>CANADA - FRD</u>							
08670	08-CAR10	A	ARSENOVIC	FLUMIOXAZIN	OLIVE	MISCELLANEOUS COMMODITY (99)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-CA95 Ennes, D. (Kearney)	
<u>CANADA - FRD</u>							

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<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
08670	-CAR10	A	ARSENOVIC	FLUMIOXAZIN	OLIVE	MISCELLANEOUS COMMODITY (99)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-CA91 Stewart, D. 08-CA94 Ennes, D. (Kearney) 08-CA92 Stewart, D. 08-CA93 Stewart, D.	
						<u>CANADA - FRD</u>	
08671	08-CAR09	A	ARSENOVIC	FLUMIOXAZIN	POMEGRANATE	MISCELLANEOUS COMMODITY (99)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-CA96 Stewart, D. 08-CA82 Ennes, D. (Kearney) 08-CA83 Ennes, D. (Kearney)	
						<u>CANADA - FRD</u>	
09174	07-CAR14	B	CARPENTER	FLUTIANIL (V-10118)	CHERRY	STONE GROUP (12)	02/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-NY18 Bellinder, Dr. Robin		08-MI11 Wise, Dr. John C. 08-MI10 Wise, Dr. John C. 08-MI09 Wise, Dr. John C. 08-MI12 Wise, Dr. John C.				08-WA28 Groenendale, D. 08-OR26 Koskela, Ms. Gina	
						<u>CANADA - FRD</u>	
09710	08-YAR01	A	CORLEY	FLUTOLANIL	CARROT	ROOT SUBGROUP (01AB)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD12 Ross, Marylee		08-MI22 Zandstra, Dr. Bernard H.		08-TX27 Gregg, Ms. Lori 08-FL25 Studstill, David		08-NM06 Craig, Maury (NMSU) 08-CA*55 Benzen, Ms. Sharon D. 08-CA54 Boutwell, Brent 08-CA53 Skiles, Keri 08-WA*12 Harvey, John	
						<u>CANADA - FRD</u>	

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**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09711	08-MIR02	A	CORLEY	FLUTOLANIL	RADISH	ROOT SUBGROUP (01AB)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>CANADA - FRD</u>	
08-NY19	Bellinder, Dr. Robin	08-OH*06	Horst, Leona	08-FL27 08-FL26	Studstill, David Studstill, David	08-CA114	Stewart, D.
09537	08-MIR12	A	ARSENOVIC	FOMESAFEN	CUCUMBER	SQUASH/CUCUMBER SUBGROUP (09B)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>CANADA - FRD</u>	
08-MD11	Ross, Marylee	08-WI08 08-OH*05	Heider, Daniel J. Horst, Leona	08-TX*28 08-SC*05 08-NC18 08-FL23	McCommas, Mr. David Wade, Paul Batts, Roger B. Studstill, David	08-CA65	Stewart, D. 08-BC05 Brookes, Ms. Victoria 08-ON06 White, Peter 08-QC03 Trudeau, M.
09722	08-TIR08	A	LEONARD	HALOSULFURON	PEAR	POME GROUP (11)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>CANADA - FRD</u>	
08-NY20	Bellinder, Dr. Robin					08-CA57 08-WA*13 08-CA56 08-ID09 08-WA14 08-ID08	Ennes, D. (Kearney) Harvey, John Stewart, D. Meeks, Mr. Will Groenendale, D. Meeks, Mr. Will
09793	08-TIR07	A	LEONARD	HALOSULFURON	CANE BERRY (BLACKBERRY)	CANE BERRY SUBGROUP (13-07A)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>CANADA - FRD</u>	
08-NY21	Palmer, Mr. W.H.	08-MI23	Zandstra, Dr. Bernard H.	08-NC10	Batts, Roger B.	08-OR15 08-OR14 08-OR16 08-CA52	DeFrancesco, Mr. Joe DeFrancesco, Mr. Joe DeFrancesco, Mr. Joe Ennes, D. (Kearney) 08-QC02 Trudeau, M.

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**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
07768	08-TIR06	A	LEONARD	HALOSULFURON	GRAPE	SMALL FRUIT VINE CLIMBLING SUBGROUP, EXCEPT FUZZY KIWIFRUIT (13-07F)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY33	Humphreys, Harry				08-WA26	Groenendale, D.	
08-NY12	Bellinder, Dr. Robin						
09930	08-TIR05	A	LEONARD	HALOSULFURON	ARTICHOKE	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
					08-CA41	Bari, Dr. Mohammad H.	
					08-CA40	Bari, Dr. Mohammad H.	
					08-CA42	Bari, Dr. Mohammad H.	
09819	08-MIR11	A	LEONARD	IMAZOSULFURON	CANTALOUPE	MELON SUBGROUP (09A)	
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-OH*07	Horst, Leona	08-TX*26	McCommas, Mr.David	08-NM10	Craig, Maury (NMSU)
				08-TX*25	McCommas, Mr.David	08-CA113	Boutwell, Brent
				08-GA*10	Fraelich, Ben		
09926	08-FLR04	A	SAMOIL	LAMBDA-CYHALOTHRIN	GREENS (MUSTARD)	LEAFY BRASSICA GREENS SUBGROUP (05B)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD16	Ross, Marylee	08-WI16	Chapman, S.	08-NC08	Batts, Roger B.	08-CA39	Stewart, D.
				08-FL34	Studstill, David	08-NM08	Craig, Maury (NMSU)
				08-TN09	Thompson, A.		
				08-GA*12	Fraelich, Ben		
				08-TX17	Gregg, Ms. Lori		

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<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
10061	08-MIR07	A	CORLEY	MANDIPROPAMID	GINSENG	ROOT SUBGROUP (01AB)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-MI28	Hausbeck, Dr. Mary K.			08-BC01	Bedford, Karen
		08-MI40	Hausbeck, Dr. Mary K.				
		08-MI07	Hausbeck, Dr. Mary K.				
09984	08-YAR171	A	BALLANTINE	METAFLUMIZONE	BLUEBERRY	BUSHBERRY SUBGROUP (13-07B)	
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-ME582	Collins, J.	08-MI585	Wise, Dr. John C.	08-NC583	Batts, Roger B.	08-OR588	DeFrancesco, Mr. Joe
		08-MI586	Wise, Dr. John C.	08-NC584	Batts, Roger B.	08-NS169 Peill, Heather	
		08-MI587	Wise, Dr. John C.	08-NC581	Batts, Roger B.	08-NS170 Peill, Heather	
						08-NB168 Leblanc, S.	
A9821	08-FLR03	A	SAMOIL	METALDEHYDE	SOYBEAN	LEGUME GROUP (06)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD13	Ross, Marylee	08-OH*08	Horst, Leona	08-TN07	Thompson, A.		
08-NY22	Jordan, Mr. Grant			08-TN06	Thompson, A.		
08-MD14	Ross, Marylee			08-TN08	Thompson, A.		
09655	06-FLR13	A	SAMOIL	METALDEHYDE	CORN (FIELD)	GRAIN GROUP (15-16)	02/06
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD26	Ross, Marylee	08-ND09	Ciernia, Mr. Mark				
08-NY36	Jordan, Mr. Grant	08-MI41	Zandstra, Dr. Bernard H.				
		08-MI42	Zandstra, Dr. Bernard H.				
B6267	08-RCR01	A	XX-WALKER	METALDEHYDE	GRASSES (SEED CROP)	GRASS GROUP (17)	03/05
<u>Data Requirements:</u>							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	

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2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09884	07-FLR06	A	BARNEY	METHOXYFENOZIDE	CARROT	(01B)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-MI27	Zandstra, Dr. Bernard H.		08-NM07	Craig, Maury (NMSU)	
		08-WI24	Chapman, S.		08-CA48	Ennes, D. (Kearney)	
09895	07-FLR07	A	BARNEY	METHOXYFENOZIDE	RADISH	(01B)	01/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY23	Bellinder, Dr. Robin	08-WI15	Chapman, S.		08-CA47	Stewart, D.	
A9367	08-CAR02	A	DORSCHNER	METHOXYFENOZIDE	CITRUS	CITRUS GROUP (10)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
				08-FL18	Sutherland, Dudley	08-CA67	Ennes, D. (Kearney)
				08-FL19	Minter, Mr. Tom	08-CA70	Ennes, D. (Kearney)
				08-FL17	Sutherland, Dudley	08-CA66	Ennes, D. (Kearney)
				08-FL12	Minter, Mr. Tom	08-CA68	Mitchell, Michelle
				08-FL13	Minter, Mr. Tom	08-CA69	Ennes, D. (Kearney)
				08-FL15	Johnson, Mr. Robert R.		
				08-FL16	Sutherland, Dudley		
				08-TX29	Gregg, Ms. Lori		
				08-FL14	Johnson, Mr. Robert R.		
08604	08-MIR13	A	CARPENTER	NICOSULFURON + RIMSULFURON	SORGHUM (GRAIN)	GRAIN GROUP (15-16)	03/08
<u>Data Requirements:</u> 5/7-2 8-2							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD06	Ross, Marylee	08-SD06	Clay, Dr. Sharon	08-TN05	Thompson, A.	08-CO07	Loiz, Meghan
		08-SD07	Clay, Dr. Sharon	08-TX33	Gregg, Ms. Lori	08-NM04	Craig, Maury (NMSU)
		08-ND08	Jenks, Dr. Brian	08-TX34	Gregg, Ms. Lori	08-CO08	Loiz, Meghan
		08-SD01	Clay, Dr. Sharon				
		08-ND06	Jenks, Dr. Brian				

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<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
09612	06-WUR02	A	THOMPSON	OXAMYL	CANEBERRY	CANEBERRY SUBGROUP (13-07A)	03/06
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MI18		Zandstra, Dr. Bernard H.		08-NC14	Batts, Roger B.	08-CA62 Skiles, Keri	
09822	07-HIR02	A	LEONARD	OXYFLUORFEN	COFFEE	MISCELLANEOUS COMMODITY (99)	09/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
					08-HI08	Kam, James	
B1913	07-MIR01	A	ARSENOVIC	PARAQUAT	OKRA	FRUITING GROUP (08)	01/92
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
				08-FL58	Studstill, David		
A1986	08-WUR02	A	BARNEY	PENDIMETHALIN	GREENS (MUSTARD)	LEAFY BRASSICA GREENS SUBGROUP (05B)	01/95
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY37 Bellinder, Dr. Robin		08-OH*01 Horst, Leona		08-TN01	Thompson, A.	08-NM01 Craig, Maury (NMSU)	
				08-NC09	Batts, Roger B.	08-CA*77 Benzen, Ms. Sharon D.	
				08-FL01	Studstill, David		
				08-NC17	Batts, Roger B.		
				08-TX19	Gregg, Ms. Lori		
A3040	08-CAR04	B	CORLEY	PROMETRYN	DILL	HERB SUBGROUP (19A)	05/94
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
				08-GA*01	Fraelich, Ben	08-WA*25 Harvey, John	

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<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
06236	08-TIR02	A	CORLEY	PROPICONAZOLE	GREENS (MUSTARD)	LEAFY BRASSICA GREENS SUBGROUP (05B)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD02	Ross, Marylee	08-OH*13	Horst, Leona	08-NC24 Batts, Roger B. 08-FL03 Studstill, David 08-TN02 Thompson, A. 08-GA*02 Fraelich, Ben 08-TX36 Gregg, Ms. Lori	08-CA20 Stewart, D. 08-CA108 Boutwell, Brent		
02008	08-MOR01	A	CORLEY	PROPICONAZOLE	BEAN (DRY)	PEA/BEAN DRIED SHELLLED EXCEPT SOYBEAN SUBGROUP (06C)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY04	Bellinder, Dr. Robin	08-ND01 Ciernia, Mr. Mark 08-ND02 Ciernia, Mr. Mark 08-ND05 Jenks, Dr. Brian 08-SD03 Clay, Dr. Sharon 08-ND04 Jenks, Dr. Brian 08-SD04 Clay, Dr. Sharon 08-ND03 Ciernia, Mr. Mark			08-CO03 Loiz, Meghan 08-CO02 Loiz, Meghan 08-CA46 Stewart, D. 08-ID16 Meeks, Mr. Will		
09787	07-TIR06	A	THOMPSON	PROPICONAZOLE	STONE FRUITS (POST HARVEST)	STONE GROUP (12)	02/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
				08-GA*17 Fraelich, Ben			
09937	08-TIR10	A	CORLEY	PROPICONAZOLE	WATERCRESS	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-MD20	Ross, Marylee			08-FL35 Minter, Mr. Tom 08-FL36 Johnson, Mr. Robert R.			

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09901	08-BAR01	A	THOMPSON	PYRACLOSTROBIN+METCONAZOL E	SUGARCANE	MISCELLANEOUS COMMODITY (99)	
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
				08-TX20 Gregg, Ms. Lori			
				08-FL32 Sutherland, Dudley			
				08-FL31 Sutherland, Dudley			
				08-TX21 Gregg, Ms. Lori			
				08-TX22 Gregg, Ms. Lori			
				08-TX23 Gregg, Ms. Lori			
				08-FL30 Sutherland, Dudley			
				08-TX24 Gregg, Ms. Lori			
						<u>CANADA - FRD</u>	
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09486	08-TIR09	B	SAMOIL	PYRIPROXYFEN	PAPAYA	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
				08-FL20 Crane, Dr. Jonathan H.			
				08-FL21 Crane, Dr. Jonathan H.			
				08-FL22 Crane, Dr. Jonathan H.			
						<u>CANADA - FRD</u>	
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08000	08-NYR11	A	BARNEY	QUINCLORAC	CRANBERRY	LOW GROWING BERRY SUBGROUP W/STRAWBERRY (13-07GH)	03/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MA01 Sandler, Ms. Hilary		08-WI01 Heider, Daniel J.				08-OR10 DeFrancesco, Mr. Joe	
08-MA03 Sandler, Ms. Hilary		08-WI02 Heider, Daniel J.					
						<u>CANADA - FRD</u>	
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10084	08-CAR12		CARPENTER	QUINOXYFEN	HOPS	MISCELLANEOUS COMMODITY (99)	
<u>Data Requirements:</u>							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-WA27 Groenendale, D.	
						<u>CANADA - FRD</u>	
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09691	08-MIR08	A	LEONARD	RIMSULFURON	BLUEBERRY (HIGH BUSH)	BUSHBERRY SUBGROUP (13-07B)	01/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	<u>CANADA - FRD</u>
08-ME01	Yarborough, Dr. Dave	08-MI19	Zandstra, Dr. Bernard H.	08-NC16	Batts, Roger B.	08-OR13	DeFrancesco, Mr. Joe
		08-MI21	Zandstra, Dr. Bernard H.	08-NC15	Batts, Roger B.		
		08-MI20	Zandstra, Dr. Bernard H.	08-NC04	Batts, Roger B.		
08982	08-YAR04	A	LEONARD	S-METOLACHLOR	LETTUCE (LEAF)	LEAFY GREENS SUBGROUP (04A)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	<u>CANADA - FRD</u>
08-MD07	Ross, Marylee			08-FL08	Studstill, David	08-CA75	Boutwell, Brent
						08-CA*79	Benzen, Ms. Sharon D.
						08-CA76	Skiles, Keri
						08-CA*78	Benzen, Ms. Sharon D.
09406	08-FLR10	A	LEONARD	S-METOLACHLOR	CANTALOUPE	MELON SUBGROUP (09A)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	<u>CANADA - FRD</u>
		08-WI06	Heider, Daniel J.	08-TX*30	McCommas, Mr. David	08-CA71	Boutwell, Brent
				08-NC20	Batts, Roger B.	08-CA72	Skiles, Keri
				08-TX31	Gregg, Ms. Lori	08-NM05	Craig, Maury (NMSU)
						08-CA73	Stewart, D.
06656	08-FLR11	A	LEONARD	S-METOLACHLOR	SQUASH (SUMMER)	SQUASH/CUCUMBER SUBGROUP (09B)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	<u>CANADA - FRD</u>
08-NY06	Bellinder, Dr. Robin	08-OH*03	Horst, Leona	08-SC*01	Wade, Paul	08-CA109	Skiles, Keri
08-MD03	Ross, Marylee			08-FL04	Studstill, David		
						08-BC03	Brookes, Ms. Victoria
						08-QC05	Trudeau, M.
						08-ON01	Weber-Henricks, Mary

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<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
01676	08-YAR05	A	LEONARD	S-METOLACHLOR	STRAWBERRY	LOW GROWING BERRY SUBGROUP (13-07G)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY01	Humphreys, Harry	08-MI01	Zandstra, Dr. Bernard H.		08-OR01	Koskela, Ms. Gina	
08-NY02	Bellinder, Dr. Robin						
09933	08-NYR02	A	BARNEY	SETHOXYDIM	BLUEBERRY	BUSHBERRY SUBGROUP (13-07B)	
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-ME03	Yarborough, Dr. Dave	08-MI31	Zandstra, Dr. Bernard H.	08-NC07	Batts, Roger B.	08-OR19	DeFrancesco, Mr. Joe
		08-MI32	Zandstra, Dr. Bernard H.	08-NC29	Batts, Roger B.		
		08-MI30	Zandstra, Dr. Bernard H.	08-NC06	Batts, Roger B.	08-NS03	Peill, Heather
						08-NS02	Peill, Heather
						08-NS01	Peill, Heather
B2531	08-NYR12	A	BARNEY	SETHOXYDIM	SAFFLOWER	MISCELLANEOUS COMMODITY (99)	01/07
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
					08-CA28	Stewart, D.	
					08-CA27	Stewart, D.	
01928	08-FLR05	A	LEONARD	SIMAZINE	CHERRY	STONE GROUP (12)	01/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY27	Bellinder, Dr. Robin	08-MI03	Zandstra, Dr. Bernard H.		08-CO01	Loiz, Meghan	
04935	08-FLR12	A	LEONARD	SIMAZINE	STRAWBERRY (PERENNIAL)	LOW GROWING BERRY SUBGROUP (13-07G)	03/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY05	Bellinder, Dr. Robin	08-WI26	Heider, Daniel J.		08-OR03	Koskela, Ms. Gina	
					08-OR02	Koskela, Ms. Gina	

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**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
A7331	08-HIR02	A	BARNEY	SPINOSAD	COFFEE	MISCELLANEOUS COMMODITY (99)	03/99
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-HI01 Kam, James 08-HI02 Kam, James 08-HI03 Kam, James	
<u>CANADA - FRD</u>							
09971	08-NYR05	A	DORSCHNER	SPIROMESIFEN	CANTALOUPE	MELON SUBGROUP (09A)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD19	Ross, Marylee	08-WI19	Chapman, S.	08-TX*14	McCommas, Mr. David	08-CA30	Skiles, Keri
				08-TX15	Gregg, Ms. Lori	08-CA31	Boutwell, Brent
						08-CA32	Stewart, D.
						08-NM09	Craig, Maury (NMSU)
<u>CANADA - FRD</u>						08-ON08	Weber-Henricks, Mary
						08-ON09	Weber-Henricks, Mary
09970	08-NYR04	A	DORSCHNER	SPIROMESIFEN	CUCUMBER	SQUASH/CUCUMBER SUBGROUP (09B)	02/08
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD18	Ross, Marylee	08-MI35	Zandstra, Dr. Bernard H.	08-FL40	Studstill, David	08-CA29	Ennes, D. (Kearney)
		08-WI18	Chapman, S.	08-TX16	Gregg, Ms. Lori	08-QC01 Trudeau, M.	
				08-SC*08	Wade, Paul	08-BC04 Brookes, Ms. Victoria	
				08-NC05	Batts, Roger B.	08-ON07 Riddle, Geoff	
<u>CANADA - FRD</u>							
09983	08-CAR145	A	LONSBARY	SPIROTETRAMAT	ONION (DRY BULB)	ONION, BULB SUBGROUP (03-07A)	
<b>Data Requirements:</b> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-NY589	Bellinder, Dr. Robin	08-WI590	Chapman, S.	08-TX591	Gregg, Ms. Lori	08-CA595	Ennes, D. (Kearney)
						08-OR593	Koskela, Ms. Gina
						08-CO592	Oman, Clark
						08-CA594	Boutwell, Brent
						08-ID596	Meeks, Mr. Will
<u>CANADA - FRD</u>						08-QC143	Trudeau, M.
						08-QC144	Trudeau, M.
						08-ON142	White, Peter
						08-ON141	White, Peter

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**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
10042	08-CAR08	A	DORSCHNER	SPIROTETRAMAT	BANANA	MISCELLANEOUS COMMODITY (99)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
						08-HI05 Coughlin, Julie	
						08-HI06 Coughlin, Julie	
						08-HI09 Coughlin, Julie	
						08-HI10 Coughlin, Julie	
09948	08-CAR07	A	CORLEY	SPIROTETRAMAT	WATERCRESS	MISCELLANEOUS COMMODITY (99)	01/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD27 Ross, Marylee				08-FL39 Minter, Mr. Tom			
				08-FL38 Johnson, Mr. Robert R.			
10043	08-FLR09	A	THOMPSON	STREPTOMYCIN	GRAPEFRUIT	CITRUS GROUP (10)	03/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
				08-FL54 Sutherland, Dudley		08-CA09 Ennes, D. (Kearney)	
				08-FL57 Minter, Mr. Tom		08-CA08 Ennes, D. (Kearney)	
				08-FL55 Johnson, Mr. Robert R.			
				08-TX01 Gregg, Ms. Lori			
				08-FL56 Minter, Mr. Tom			
				08-FL53 Sutherland, Dudley			
10260	08-EPA		BARNEY	SWITCH, PROVADO, SUCCESS	BRASSICA CROP GROUP 05	BRASSICA LEAFY GROUP (05)	
<u>Data Requirements:</u>							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>		<u>WSR - FRD</u>	
08-MD28 Ross, Marylee				08-TX05 Gregg, Ms. Lori		08-CA115 Boutwell, Brent	
A9662	08-TIR04	A	CARPENTER	TETRACONAZOLE	STRAWBERRY (GH & FIELD)	LOW GROWING BERRY SUBGROUP (13-07G)	11/06



**ATTACHMENT 2  
2008 IR-4 SCHEDULED PROJECTS**

<u>PR #</u>	<u>LAB</u>	<u>PRIORITY</u>	<u>STUDY DIRECTOR</u>	<u>CHEMICAL</u>	<u>COMMODITY</u>	<u>CROP GROUP</u>	<u>PROTO</u>
A9662	08-TIR04	A	CARPENTER	TETRACONAZOLE	STRAWBERRY (GH & FIELD)	LOW GROWING BERRY SUBGROUP (13-07G)	11/06
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
08-NY32	Bellinder, Dr. Robin	08-MI39	Zandstra, Dr. Bernard H.	08-NC02 Batts, Roger B. 08-TX04 Gregg, Ms. Lori 08-FL44 Studstill, David	08-CA*24 Benzen, Ms. Sharon D. 08-CA112 Ennes, D. (Kearney) 08-CO14 Loiz, Meghan 08-OR24 Koskela, Ms. Gina 08-CA*23 Benzen, Ms. Sharon D.		
09342	07-MIR14	A	CARPENTER	THIFENSULFURON-METHYL	TOMATO	FRUITING GROUP (08)	02/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
				08-FL11 Studstill, David 08-GA*15 Fraelich, Ben 08-NC19 Batts, Roger B. 08-GA*16 Fraelich, Ben			
09709	07-MIR06	A	THOMPSON	THIOPHANATE METHYL	BEAN (EDIBLE PODED)	PEA/BEAN DRIED SHELLLED EXCEPT SOYBEAN SUBGROUP (06C)	02/07
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-WI10 Heider, Daniel J.					
09453	08-NYR09	A	CORLEY	V-10135	GINSENG	ROOT SUBGROUP (01AB)	02/08
<u>Data Requirements:</u> COMPLETE							
<u>NER - FRD</u>		<u>NCR - FRD</u>		<u>SOR-FRD</u>	<u>WSR - FRD</u>	<u>CANADA - FRD</u>	
		08-MI17 Hausbeck, Dr. Mary K. 08-MI15 Hausbeck, Dr. Mary K. 08-MI16 Hausbeck, Dr. Mary K.					

Continued on next page...

### **ATTACHMENT 3 - Registration Packages Submitted in 2008**

<b>Chemical</b>	<b>Crop</b>	<b>PR Number</b>	<b>TYPE</b>	<b>Type</b>
<b>Acibenzolar</b>	Onion	9090	Fungicide	New
<b>Azoxystrobin</b>	Barley	9088	Fungicide	New
<b>Bifenazate</b>	Bean, dry	8929	Insecticide	New
	Grasses	9037	Insecticide	New
<b>Buprofezin</b>	Coffee	8973	Insecticide	New
	Pomegranate	8828	Insecticide	New
<b>Chlorantraniliprole</b>	Artichoke	10083	Insecticide	New
	Avocado	9581	Insecticide	New
	Banana	10232	Insecticide	New
	Caneberry	9344	Insecticide	New
	Caneberry	9344	Insecticide	New
	Coffee	10205	Insecticide	New
	Corn, sweet	9732	Insecticide	New
	Grapefruit	10201	Insecticide	New
	Grass (seed)	10250	Insecticide	New
	Herbs	10219	Insecticide	New
	Lemon	10202	Insecticide	New
	Mint	9642	Insecticide	New
	Orange	10200	Insecticide	New
	Rice	10136	Insecticide	New
	Strawberry	9850	Insecticide	New
<b>Clethodim</b>	Artichoke	9013	Herbicide	New
	Blueberry	5234	Herbicide	New
	Caneberry	6060	Herbicide	New
	Peach	6875	Herbicide	New
<b>Clopyralid</b>	Blueberry	5433	Herbicide	New
	Blueberry	9602	Herbicide	New
	Strawberry	8132	Herbicide	New
<b>Clothianidin</b>	Cranberry	9399	Insecticide	New
	Mustard Greens	9070	Insecticide	New
	Peach	8544	Insecticide	New
	Sweet Potato	9065	Insecticide	New
	Swiss Chard	5435	Insecticide	New

### **ATTACHMENT 3- Continued**

<b>Chemical</b>	<b>Crop</b>	<b>PR Number</b>	<b>TYPE</b>	<b>Type</b>
<b>Cyazofamid</b>	Grape	8773	Fungicide	New
	Peppers/okra	8509	Fungicide	New
	Transplants	9385	Fungicide	New
<b>Cyhalofop</b>	Wildrice	8951	Herbicide	New
<b>Cyromazine</b>	Bean (snap)	B3909	Insecticide	New
<b>Dimethomorph</b>	Bean (lima)	7261	Fungicide	New
	Ginseng	8958	Fungicide	New
	Grape	6794	Fungicide	New
	Turnip tops & Crop group 2	7599	Fungicide	New
<b>Dinotefuran</b>	Collard	8629	Insecticide	New
	Kale	8628	Insecticide	New
	Mustard Greens	8626	Insecticide	New
	Turnip Greens	8627	Insecticide	New
<b>Endothall</b>	Alfalfa	9756	Herbicide	New
	Apple	9767	Herbicide	New
	Cabbage	9764	Herbicide	New
	Caneberry	9770	Herbicide	New
	Cereals	9768	Herbicide	New
	Cucumber	9755	Herbicide	New
	Grape	9754	Herbicide	New
	Grasses	9760	Herbicide	New
	Lettuce	9757	Herbicide	New
	Mint	9758	Herbicide	New
	Onion	9763	Herbicide	New
	Orange	9759	Herbicide	New
	Peach	9769	Herbicide	New
	Peas/Beans/Soybean	9765	Herbicide	New
	Rice	9761	Herbicide	New
	Root Crops	9762	Herbicide	New
	Tomato	9766	Herbicide	New
	Tree nuts	9771	Herbicide	New
<b>Etoxazole</b>	Cucumber	9208	Insecticide	New
	Mint	A8816	Insecticide	New
	Mint	8816	Insecticide	New
	Peach	9045	Insecticide	New
	Plum	9046	Insecticide	New
	Tomato (GH)	9109	Insecticide	New
<b>Fenamidone</b>	Cilantro	NA	Fungicide	New
	Grape	8164	Fungicide	New
	Okra	NA	Fungicide	New
	Root Vegetables	NA	Fungicide	New
	Turnip greens	7975	Fungicide	New

### **ATTACHMENT 3 - Continued**

<b>Chemical</b>	<b>Crop</b>	<b>PR Number</b>	<b>TYPE</b>	<b>Type</b>
<b>Fenpyroximate</b>	Cantaloupe	9022	Insecticide	New
	Cucumber (GH)	10109	Insecticide	New
	Eggplant	9021	Insecticide	New
	Okra	9284	Insecticide	New
	Pepper	8617	Insecticide	New
	Tomato	9027	Insecticide	New
<b>Fluazinam</b>	Lettuce	6892	Fungicide	New
	Onion	7092	Fungicide	New
<b>Flumioxazin</b>	Celery	8646	Herbicide	New
	Cucumber	8317	Herbicide	New
	Hops	9371	Herbicide	New
	Squash	8318	Herbicide	New
<b>Fomesafen</b>	Potato	8084	Herbicide	New
	Tomato	8948	Herbicide	New
<b>Formetanate Hydrochloride</b>	Onion, bulb	9614	Insecticide	New
<b>Imidacloprid</b>	Papaya	9039	Insecticide	Label
	Sweet Potato	9331	Insecticide	Label
<b>Indoxacarb</b>	Beet	8870	Insecticide	New
	Blueberry	7038	Insecticide	New
<b>Methoxyfenozide</b>	Pomegranate	10160	Insecticide	New
	Citrus	9367	Insecticide	New
	Corn, pop	10094	Insecticide	New
	Dry Pea	7527	Insecticide	New
<b>Novaluron</b>	Blueberry	9052	Insecticide	New
	Cherry	9347	Insecticide	New
	Collard	8421	Insecticide	New
	Mustard Greens	8420	Insecticide	New
	Peach	9047	Insecticide	New
	Plum	9048	Insecticide	New
<b>Pendimethalin</b>	Bermuda Grass	8310	Herbicide	New
	Grass, seed crop	4912	Herbicide	New
	Olive	7607	Herbicide	New
<b>Prometryn</b>	Carrot	1682	Herbicide	New
	Celeriac	3567	Herbicide	New
	Cilantro	8996	Herbicide	New
	Leaf petioles subgroup 4B	3217	Herbicide	New
	Okra	8575	Herbicide	New
	Parsley	3618/5160	Herbicide	New
	Turnip Greens	8422	Herbicide	New

### **ATTACHMENT 3 - Continued**

<b>Chemical</b>	<b>Crop</b>	<b>PR Number</b>	<b>TYPE</b>	<b>Type</b>
<b>Propamocarb</b>	Bean, lima	7263	Fungicide	New
<b>Pyrimethanil</b>	Cherry	8701	Fungicide	New
	Lemon	9085	Fungicide	New
	Peach	8700	Fungicide	New
	Plum	8702	Fungicide	New
<b>Pyriproxyfen</b>	Artichoke, globe	NA	Insecticide	New
	Asparagus	NA	Insecticide	New
	Celery	8975	Insecticide	New
	Kiwifruit	9359	Insecticide	New
	Foliage of legume veg.	NA	Insecticide	New
	Leaves of root & tuber veg.	NA	Insecticide	New
	Watercress	NA	Insecticide	New
<b>Quinoxifen</b>	Artichoke	8817	Fungicide	New
	Peach	8462	Fungicide	New
	Plum	8463	Fungicide	New
	Pumpkin	8639	Fungicide	New
	Winter Squash	7653	Fungicide	New
<b>Spinetoram</b>	Pomegranate	10197	Insecticide	New
	Date	10152	Insecticide	New
	Hop	10089	Insecticide	New
	Pineapple	10133	Insecticide	New
<b>Spinosad</b>	Almond	8739	Insecticide	New
	Date	10153	Insecticide	New
	Pistachio	NA	Insecticide	New
	Pomegranate	10228	Insecticide	New
<b>Spiromesifen</b>	Corn, Sweet	9924	Insecticide	New
	Low growing fruit	10086	Insecticide	New
<b>Tebuconazole</b>	Cherry Post-harvest	6554	Fungicide	New
<b>Thiamethoxam</b>	Avocado	9607	Insecticide	New
	Black sapote	NA	Insecticide	New
	Canistel	NA	Insecticide	New
	Mamey sapote	NA	Insecticide	New
	Mango	NA	Insecticide	New
	Papaya	8826	Insecticide	New
	Sapodilla	NA	Insecticide	New
	Star apple	NA	Insecticide	New
	Sugarbeet	6975	Insecticide	New

## ATTACHMENT 4 - New Tolerances and Approvals – 2008

**TOLERANCES ESTABLISHED IN 2008 FROM IR-4 PETITIONS**  
**Totals for 2008: 248 Permanent Tolerances That Support: 999 Total New Uses**

<b>Pest Control Agent / Type*</b>	<b>Date</b>	<b>Commodity or Crop Group</b>	<b>PR#</b>	<b>No. of Uses</b>	<b>No. of Tolerances</b>
Trifloxystrobin	F Jan 02 2008	Asparagus	08212	1	1
		Papaya Black sapote Canistel Mamey sapote Mango Sapodilla Star apple	07973	7	7
		Vegetable, root, except sugar beet, subgroup 1B	08363	18	2
		Zeta-cypermethrin	I Jan 09 2008	Fruit, citrus, group 10	08214 08215 08216
Zeta-cypermethrin	I Jan 09 2008	Oilseed commodities	10073	27	2
		Safflower	08677	1	1
		Okra	09656	1	1
		Wild rice	09125	1	1
Mesotrione	H Jan 09 2008	Cranberry	08903	1	1
Thiabendazole	F Jan 11 2008	Garbanzo Lentil Pea, dry	06130 06531 06532	4	No tolerance needed
Acetamiprid	I Jan 16 2008	Berry, low growing, subgroup 13-07G	09058 10060	9	1
Hexakis	I Jan 29 2008	Pistachio	06617	1	1
Cyfluthrin	I FEB 27 2008	Grass, forage, fodder and hay, group 17	09683	3	2

**ATTACHMENT 4 - Continued**

Pest Control Agent / Type*		Date	Commodity or Crop Group	PR#	No. of Uses	No. of Tol
Bifenazate	I	MAR 05 2008	Vegetable, legume, edible podded, subgroup 6A (replaces Pea, edible podded, succulent)	08275	18	2
			Pea and bean, succulent shelled, subgroup 6B (replaces Pea, garden, succulent)			
			Soybean, succulent shelled			
			Caneberry subgroup 13-07A	07053	5	1
			Guava	08928	19	19
			Lychee	08268		
			Mango	08891		
			Star fruit	08267		
			Papaya	08270		
			Acerola			
			Black sapote			
			Canistel			
			Feijoa			
			Jaboticaba			
			Longan			
Passionfruit						
Pulasan						
Rambutan						
Sapodilla						
Mamey sapote						
Spanish lime						
Star apple						
Wax jambu						
Flumioxazin	H	MAR 05 2008	Asparagus	08059	1	1
			Bean, dry	09043	22	1
			Vegetable, fruiting, group 8	08320 08321	9	1
			Okra			
			Melon subgroup 9A	08316	3	1
			Bushberry subgroup 13-07B	08331	19	1
			Nut, tree, group 14	08668 08818	12	1

**ATTACHMENT 4 - Continued**

<b>Pest Control Agent / Type*</b>	<b>Date</b>	<b>Commodity or Crop Group</b>	<b>PR#</b>	<b>No. of Use</b>	<b>No. of Tolerances</b>	
Methoxy-fenozide	I	MAR 05 2008	Vegetable, tuberous and corm, except potato, subgroup 1D	08505	16	1
		Onion, green, subgroup 3-07B	08392 09067	15	1	
		Bushberry subgroup 13-07B	07671	19	1	
		Grass, forage, fodder and hay, group 17	07524	3	2	
		Bean, dry	07530	22	1	
		Peanut	08115	1	3	
		Avocado	07060	15	15	
		Guava	07064			
		Passion fruit	07067			
		Acerola				
		Canistel				
		Feijoa				
Jaboticaba						
Mango						
Papaya						
Sapodilla						
Black sapote						
Mamey sapote						
Star apple						
Starfruit						
Wax jambu						
Spiromesifen	I	MAR 12 2008	Bean, dry	09410	36	4
		Bean, edible podded				
		Bean, succulent				
Pyraclostrobin	F	MAR 24 2008	Barley	09089	1	2
		Avocado	08446	8	8	
		Mango	08442			
		Papaya	08400			
		Black sapote				
		Canistel				
		Mamey sapote				
		Sapodilla				
Star apple						



**ATTACHMENT 4 - Continued**

Pest Control Agent / Type*		Date	Commodity or Crop Group	PR #	No. of Use	No. of Tolerances	
Myclobutanil	F	MAR 26 2008	Leafy greens, except spinach, subgroup 4A	07577 06358 07878	23	2	
			Cilantro leaves				
			Vegetable, fruiting, except tomato, group 8	06070 06071 06732 06857	9	2	
			Okra				
			Artichoke, globe	07020	1	1	
Boscalid	F	MAR 28 2008	Mango	08446	8	8	
			Papaya	08442			
			Black sapote	08400			
			Canistel				
			Mamey sapote				
Dicamba	H	APR 02 2008	Sweet corn	07376	1	3	
			Sapodilla				
			Star apple				
Flonicamid	I	APR 02 2008	Vegetable, root, except sugar beet, subgroup 1B	08753 08754	18	2	
			Vegetable, tuberous and corm, subgroup 1C (Potato tolerance previously established)	---	16	1	
			Brassica, leafy greens, subgroup 5B (Mustard greens tolerance previously established)	09518	7	1	
			Turnip greens	---			
			Okra	08635	1	1	
			Hops	08706	1	1	
Fenhexamid	F	APR 09 2008	Asparagus	08692	1	1	

## ATTACHMENT 4 - Continued

Pest Control Agent / Type*	Date	Commodity or Crop Group PR#	PR	No. of Uses	No. of Tolerances
Buprofezin	I APR 09 2008	Vegetable, leafy, except brassica, group 4, except head lettuce and radicchio Radicchio	06978 09910	28	2
		Vegetable, fruiting, group 8 (Tomato tolerance previously established) Okra	08162 08848 08932 08964 09004 07408	9	2
		Berry, low growing, subgroup 13-07G	08737	9	1
		Olive	09015	1	2
Cyazofamid	F APR 23 2008	Carrot	08522	1	1
DPX-E2Y45 (Chlorantraniliprole)	I May 07 2008	Stone fruit	09389	9	1
		Grape	09388	1	1
Pyridalyl	I May 07 2008	Mustard greens	08594	1	1
		Mustard greens (GH)	08991		
		Turnip greens	09148	1	1
Spirodiclofen	I May 07 2008	Hop	08968	1	1
Fluopicolide	F May 28 2008	Vegetable, root, subgroup 1A, except sugar beet and carrot Vegetable, leaves of root and tuber, group 2	09894	19	2
		Vegetable, bulb, group 3-07	09801	26	1
		Brassica, head and stem, subgroup 5A	09816 09892	11	1
Bifenthrin	I Jun 11 2008	Leaf petioles subgroup 4B	04945	7	1
		Bushberry subgroup 13-07B	08736	19	1
Gamma-cyhalothrin	I Jul 09 2008	Okra	09851	1	1
		Pistachio	09904	1	1
Sethoxydim	H Jul 09 2008	Gold of pleasure Crambe Cuphea Echium Hare's ear mustard Lesquerella Lunaria Meadowfoam Milkweed Mustard Oil radish Poppy Sesame Sweet rocket	09923	14	16

**ATTACHMENT 4 - Continued**

<b>Pest Control Agent / Type*</b>	<b>Date</b>	<b>Commodity or Crop Group</b>	<b>PR#</b>	<b>No. Uses</b>	<b>No. of Tolerances</b>
Tebuconazole	F Aug 13 2008	Onion, bulb, subgroup 3-07A	07196 07197 08365	11	1
		Onion, green, subgroup 3-07B	07245	15	1
		Brassica, leafy greens, subgroup 5B	06232 06510	8	1
		Vegetable, cucurbit, group 9	05091 05277 05278 05279 05400 06321 06322	14	1
		Fruit, stone, group 12 , except cherry (post-harvest uses)	06553	10	2
		Asparagus	07991	1	1
		Beet, garden	06353	1	2
		Hop	06672	1	1
		Lychee	06702	1	1
		Mango (post-harvest use)	06426	1	1
		Okra	06261	1	1
		Turnip (roots and greens)	06234	4	2
		Sunflower	06414	1	3
		Cyprodinil	F Aug 27 2008	Vegetable, root, except sugarbeet, subgroup 1B	07090 08933 09019; 10069
Vegetable, leaves of root and tuber, group 2					
Vegetable, cucurbit, group 9	07124 07655 07656			14	1
Tomato Tomatillo	08124			2	3
Avocado Mamey sapote Papaya, Black sapote Canistel, Mango, Sapodilla Star apple	07338 07129 06982			8	3
Parsley	07130			1	1
Lemon Lime	08297 06981			2	4
Kiwifruit	08972			1	1
Onion, bulb Onion, green	05033			17	2
Strawberry	06790			1	1

<b>Pest Control Agent</b>		<b>Date</b>	<b>Commodity or Crop Group</b>	<b>PR#</b>	<b>No. Uses</b>	<b>No. of Tolerances</b>
Forchlorfenuron	P	Aug 15 2008	Bushberry subgroup 13-07B	08313	19	1
Dichlobenil	H	Aug 27 2008	Caneberry subgroup 13-07A (replaces tolerance on blackberry and raspberry)	01842	3	1
			Bushberry subgroup 13-07B (replaces tolerance on blueberry)	00808	18	1
			Rhubarb	06665	1	1
Fenbuconazole	F	Aug 27 2008	Pepper (bell and non-bell)	06372	2	1
Uniconazole	P	Sep 05 2008	Vegetable, fruiting, group 8	04595 04597	9	1
Fludioxonil	F	Sep 10 2008	Avocado	07338	8	8
			Mango	07128		
			Papaya	06982		
			Mamey sapote	07129		
			Canistel			
			Sapodilla			
			Black sapote			
			Star apple			
			Tomato	08124		
Tomatillo						
Citrus oil	---	1	1			
Vegetable, cucurbit, group 9	07124 07655 07656	14	1			
Vegetable, root, except sugar beet, subgroup 1B	07090 09019	18	1			
Vegetable, leaves of root and tuber, group 2	---	16	1			
Vegetable, tuberous and corm, except potato, subgroup 1D	08402	16	1			
Ethoprop	N	Sep 17 2008	Hops	02734	1	1
			Mint	04012	1	2
Metaldehyde	M	Sep 25 2008	Artichoke, globe	07396	1	1
			Cactus, prickly pear	07395	1	1
			Watercress	07370	1	1
			Berry group 13	07397	9	1
Streptomycin	F	Sep 25 2008	Bean, dry seed	06347	36	2
			Bean, succulent			
Cymoxanil	F	Oct 08 2008	Onion, bulb, subgroup 3-07A	08303	26	2
			Onion, green, subgroup 3-07B			
			Leafy greens subgroup 4A (replaces tolerance on head lettuce)	08308 08499 08758	28	3
			Leaf petioles subgroup 4B Cilantro leaves			

**ATTACHMENT 4 - Continued**

<b>Pest Control Agent / Type*</b>	<b>Date</b>	<b>Commodity or Crop Group</b>	<b>PR#</b>	<b>No. of Uses</b>	<b>No. of Tolerances</b>
Cymoxanil		Caneberry subgroup 13-07A (replaces tolerances on Caneberry subgroup 13A)	08766	1	1
MCPB	H Nov 12 2008	Mint	04757	1	2
Tetraconazole	F Nov 14 2008	Grape	09663	1	1
Chlorothalonil	F Dec 03 2008	Brassica, head and stem, subgroup 5A (replaces tolerances for broccoli, brussels sprouts, cabbage, cauliflower)	03169	7	1
		Vegetable, fruiting, group 8, except tomato (replaces tolerance on non-bell pepper) Okra	00032 00571 01154 00353	9	2
		Vegetable, cucurbit, group 9 (replaces tolerances for cucumber, melon, pumpkin, summer squash, winter squash)	03860 03861 03950	9	1
		Ginseng	00988	1	1
		Yam, true	01414	1	1
		Horseradish	02392	1	1
		Rhubarb	05410	1	1
		Novaluron	I Dec 10 2008	Tomato	08419
Sugarcane	09903			1	1

\*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscide, P=plant growth regulator, R=rodenticide

## **ATTACHMENT 5 – PENDING FOOD PROGRAM SUBMISSIONS**

<b><u>Product</u></b>	<b><u>Crop(s)</u></b>
2,4-DB	Lentil
2,4-DB + Cyfluthrin	Alfalfa Mixed Stands
Abamectin	Bean (dry), chives, onion (dry Bulb)
Acequinocyl	Bean, snap, Bean, succulent shelled, caneberry, cantaloupe, cherry, cucumber, hops, okra, pepper, tomato
Acetamiprid	Clover seed, grape, tomato (GH)
Antraquinone	Corn
Bifenazate	Low growing berries, cranberry, sugar apple
Bifenthrin	Grass seed
Boscalid	Turnip tops
Boscalid (+ Pyraclostrobin)	Artichoke, persimmon, sweet potato
Bromoxynil	Millet, leek
Buprofezin	Cantaloupe, cucumber, pomegranate, squash
Captan	Ginseng
Carfentrazone	Onion (dry bulb)
Chlorantraniliprole	Tomato (GH)
Chlorfenapyr	GH Transplants
Chlorothalonil	Strawberry, tomato transplants
Clethodim	Grass
Clomazone	Broccoli, rhubarb, Southern pea
Cyazofamid	Bean, lima, snap bean, broccoli, cabbage, hops, mustard greens, spinach
Cymoxanil (+ Famoxadone)	Bean, lima, mustard greens
Cyprodinil (+ Fludioxonil)	Pepper
DCPA	Cactus, carrot
Difenoconazole	Almond
Dinotefuran	Onion
Dinotefuran	Watercress
Diquat	Sesame
Diuron	Cherry, plum
Emamectin	Cucumber

## Attachment 5 – Continued

<u>Product</u>	<u>Crop(s)</u>
Ethephon	Sweet potato
Ethofumesate	Cilantro, dill
Etoxazole	Avocado, caneberry, pepper, summer squash
Famoxadone	Ginseng
Fenhexamid	Kiwifruit, onion (bulb vegetables)
Fenpropathrin	Tropical Fruit
Fluazinam	Cantaloupe, carrot, pepper,
Flucarbazone	Grasses
Fludioxonil	Ginseng, tropical fruit
Flufenacet	Bean, snap, popcorn, potato
Flumioxazin	Cabbage, peach, prickly pear
Fluopicolide	Mustard Greens
Fluroxypyr	Mint
Flutolanil	Broccoli, cabbage, ginseng, mustard greens, turnip greens
Fomesafen	Cantaloupe, pea succulent, pepper, squash
Glufosinate	Corn (sweet)
Glyphosate	Carrot, flax, horseradish, mustard seed, strawberry
Halosulfuron	Apple, dry bean, blueberry, succulent pea, potato, rhubarb
Imazalil	Mushroom
Indoxacarb	Bean, dry and snap
Kasugamycin	Apple, pear, pepper, tomato
Lambda-Cyhalothrin	Asparagus, carrot, okra, radish
Linuron	Celeriac, coriander, dill, parsley, dry pea
Mancozeb	Grape
Mefenoxam	Caneberry, snapbean, spinach
Metaldehyde	Celery, grass, mint, taro,
Metconazole	Blueberry, potato
Metconazole (+ Pyraclostrobin)	Sugarcane
Methiocarb	Artichoke
NAA	Avocado, grapefruit, orange, pomegranate, tangerine,

## Attachment 5 - Continued

<u>Product</u>	<u>Crop(s)</u>
Napropamide	Mint
Novaluron	Bean, dry and snap, cantaloupe, cherry, cucumber, okra, pepper, squash, strawberry, Swiss chard, sweetcorn,
Oxyfluorfen	Broccoli, cabbage, caneberry, citrus, strawberry, Ti palm, tomato
Paraquat	Broccoli
Pendimethalin	Cantaloupe, leaf lettuce
Propiconazole	Bean, Lima, dry and snap, citrus, mint mustard greens, stone fruit, watercress
Pyrimethanil	Ginseng
Quinoxifen	Hops
Quizalofop	mustard seed
S-metolachlor	Blueberry, caneberry, cantaloupe, carrot, Chinese mustard, cucumber, lettuce, mustard greens, okra, sesame, spinach, sweet sorghum, tomato, turnip greens
Spinosad	Caneberry
Spirodiclofen	Blueberry, dry pea, pepper
Sulfentrazone	Blueberry, rhubarb, turnip, wheat
Terbacil	Peach, strawberry
Tetraconazole	Strawberry
Thiacloprid	Blueberry
Thidiazuron	Grape
Thifensulfuron-methyl	Safflower
Thifensulfuron-methyl - Rimsulfuron	Chicory
Thiophanate-methyl	Pepper, snapbean,
Tribenuron-methyl	Blueberry, low bush
Triflurosulfuron-methyl	Beet, garden
Zeta-cypermethrin	Artichoke, avocado, barley
Zinc Phosphide	Grasses
Zoxamide	Ginseng



# ATTACHMENT 6 – 2008 ORNAMENTAL HORTICULTURE PROGRAM,

## Cooperators and Research Activities

### Cooperators

#### NORTHCENTRAL REGION

Dr. L. Canas	OH
Dr. R. Cloyd	IL
Mr. T. Davis	MI
Dr. W. Kirk	MI
Dr. H. Mathers	OH
Dr. M. Mickelbart	IN
Dr. D. Nielsen	OH
Dr. E. Runkle	MI
Dr. D. Williams	IL

#### NORTHEAST REGION

Dr. J. Ahrens	CT
Dr. S. Alm	RI
Dr. C. Becker	NY
Dr. R. Cowles	CT
Dr. D. Gilrein	NY
Dr. B. Kunkel	DE
Dr. T. Mervosh	CT
Dr. B. Miller	NY
Dr. J. Sanderson	NY
Dr. A. Senesac	NY

#### SOUTHERN REGION

Dr. D. Benson	NC
Dr. K. Braman	GA
Dr. Y. Chen	LA
Dr. J. Chong	SC
Dr. M. Czarnota	GA
Dr. J. Derr	VA
Dr. A. Fulcher	KY
Dr. C. Gilliam	AL
Dr. C. Keever	AL
Dr. S. Ludwig	TX
Dr. R. Mizell	FL
Dr. J. Neal	NC
Dr. D. Norman	FL
Dr. R. Oetting	GA
Dr. A. Palmateer	FL
Dr. B. Pemberton	TX
Dr. J. Pena	PR
Dr. P. Schultz	VA
Dr. B. Trader	MS
Dr. T. Whitewell	SC

#### WESTERN REGION

Dr. A. Chase	CA
Dr. G. Chastagner	OR
Dr. W. Cranshaw	CO
Dr. J. Klett	CO
Dr. H. Lieth	CA
Dr. M. Parrella	CA
Dr. R. Regan	OR
Dr. M. Reid	CA
Dr. B. Uber	CA
Dr. C. Wilen	CA

#### USDA-ARS

Dr. E. Beste	MD
Dr. R. Boydston	WA
Mr. B. Fraelich	GA
Mr. R. Frank	MD
Mr. T. Freiburger	NJ
Dr. N. Grunwald	OR
Dr. J. Harvey	WA
Dr. M. Reding	OH
Mr. P. Wade	SC

## ATTACHMENT 7 – 2008 Research Activities

<b>Discipline</b>	<b>Project Title</b>	<b>Number of Tested Products</b>	<b>Number of Crops</b>	<b>Number of Trials</b>
Entomology	Thrips Efficacy *	22	9	89
	Borer & Beetle Efficacy *	12	5	27
	White Grub & Root Weevil Efficacy *	13	5	34
	Scale Efficacy *	18	3	64
	Mealybug Efficacy - Super A	5	1	6
	QRD 416 Crop Safety	2	23	29
	Spirotetramat Crop Safety	1	3	7
	Mite (not spider mites) Efficacy	12	1	12
	Q-Biotype Whitefly Efficacy	4	4	21
	Seed Treatment - Aphids & Leps	4	1	4
Plant Pathology	Phytophthora Efficacy *	23	6	59
	Bacterial Efficacy	9	3	29
	Downy Mildew Efficacy	8	1	8
	Acibenzolar Crop Safety	1	25	57
	V-10161 Crop Safety	1	21	28
Weed Science	2008/2009 Crop Safety Project for Over the Top Applications *	7	83	446
	Efficacy for Broadleaf Weeds (Bittercress, Oxalis, Spurge) *	3	0	51
	2007 Sedge Materials Crop Safety	4	27	73
	F6875 Crop Safety	1	1	1
	Flumioxazin Crop Safety	2	4	4
	Halosulfuron Crop Safety	1	27	44
	Halosulfuron Plant Back Crop Safety	1	2	2
PGR	Herbaceous Shelf Life *	5	3	89
	Woody Oramental Branching *	5	5	30

\* High Priority Projects

For a detailed list of research activities visit [ir4.rutgers.edu](http://ir4.rutgers.edu).

## **ATTACHMENT 8 – SUMMARIES OF 2008 ORNAMENTAL HORTICULTURE RESEARCH**

The abstracts for the 12 research summaries prepared during 2008 are below. For full reports, visit [ir4.rutgers.edu](http://ir4.rutgers.edu).

### **Coleopteran Efficacy**

Collectively, managing coleopteran insects can be challenging because the adult and larval stages may both cause damage and sometimes occur on different hosts or on different plant parts. While organophosphates, pyrethroids, and neonicotinoids can provide good to excellent control of coleopteran insects, not all products work equally well in all situations. Treatments for borers are very different than treatments targeting white grubs. Developing newer classes of chemistry are important to reduce the environmental consequences and to minimize the development of resistance. Starting with the 2004 Annual Workshop, screening a number of products to manage coleopteran insects became one of the high priority projects for entomology. From 2004 through 2007, 42 products representing 30 different active ingredients were tested for management of adult and larval stages of coleopteran insects. These products represented both biological and chemical tools. Some products were already registered but more data were needed or they were considered standards to measure the level of efficacy achieved with other materials. Other products were in development but have not yet been registered with the EPA. While a number of coleopteran species were tested, only enough experiments were able to be completed on black vine weevil, Japanese beetle, oriental beetle and viburnum leaf beetles to recommend actions to register or amend labels for these pests.

### **Dimethenamid-p Crop Safety**

During 2007, IR-4 completed 75 trials on Tower EC (dimethenamid-p). The data contained in this report was generated to register uses of dimethenamid on and around ornamental horticulture plants with over-the-top applications. The dimethenamid rates in the 2007 testing program were 0.97, 1.94 and 3.88 pounds active ingredient per acre (lb ai per A) as the 1X, 2X and 4X rates. Tower EC had been applied to 38 plant genera or species. Of these, 5 exhibited no or minimal transient injury after application at all three rates. Two crops exhibited no phytotoxicity at 0.97 and 1.94 lb ai per acre, but did have some injury at 3.88 lb ai per acre. No crops exhibited significant phytotoxicity at even the lowest rate.

### **Dimethenamid-p + Pendimethalin Crop Safety**

During 2007, IR-4 completed 75 trials on Freehand G (BAS 659 G; dimethenamid-p + pendimethalin). The data contained in this report was generated to register uses of dimethenamid on and around ornamental horticulture plants with over-the-top applications. The dimethenamid rates in the 2007 testing program were 2.65, 5.3 and 10.6 pounds active ingredient per acre (lb ai per A) as the 1X, 2X and 4X rates. Freehand G had been applied to 50 plant genera or species. Of these, 15 exhibited no or minimal transient injury after application at all three rates. Two crops exhibited no phytotoxicity at 0.97 and 1.94 lb ai per acre, but did have some injury at 3.88 lb ai per acre: *Lantana sp.* and *Miscanthus sp.* Six crops exhibited significant phytotoxicity at even the lowest rate: *Calamagrostis acutiflora*, *Coreopsis auriculata*, *Festuca ovina glauca*, *Salvia nemorosa*, *Scabiosa sp.*, *Vinca sp.*

## **ATTACHMENT 8 – Continued**

### **Dithiopyr Crop Safety**

Dimension (dithiopyr) was initially registered in 1992 for ornamental horticulture uses. This initial label contained an extensive list of ornamental horticulture plants in landscapes where Dimension could be used without causing phytotoxicity. In 2006, the new Dimension 2EW label contained registered uses for field container and in ground nursery production, the first dithiopyr product to have these use sites. Starting in 1992, IR-4 examined 43 crops to expand this label to other crops, including several different fern species grown in field containers. Of the researched crops and Dimension formulations, only one crop (*Eryngium platinum*) can be added at this time based on the data provided here. It is recommended the trials conducted using emulsifiable concentrate formulations be repeated with Dimension 2EW.

### **F6875 Crop Safety**

During 2006 and 2007 IR-4 has completed 142 trials with products containing sulfentrazone + proflumicarb (F6875 0.3G and F6875 4SC) on 60 crops. The data contained in this report was generated to register uses of sulfentrazone + proflumicarb formulation on and around ornamental horticulture plants with over-the-top applications. The rates tested were 0.375, 0.75 and 1.5 pounds active ingredient per acre (lb ai per A) as the 1X, 2X and 4X rates. F6875 4SC had been applied to 14 crops, but no conclusions can be drawn from this minimal set of data. F6875 0.3G had been applied to 47 plant genera or species. Of these, 18 exhibited no or minimal transient injury after application at all three rates. Eight crops (*Buddleia davidii*, *Echinacea sp.*, *Hemerocallis sp.*, *Hosta sp.*, *Iris sp.*, *Ophiopogon sp.*, *Phlox paniculata*, and *Phlox subulata*) exhibited phytotoxicity at even the lowest rate.

### **Isoxaben Crop Safety**

Gallery 75DF (isoxaben) was initially registered in 1992 for ornamental horticulture uses. This initial label contained an extensive list of ornamental horticulture crops where Gallery could be used without causing phytotoxicity. It also included a short list of crops where Gallery applications were not recommended. Starting in 1992, IR-4 examined 60 crops to expand this label to other crops, including several different fern species grown in field containers. Of these, 16 crop species exhibited no or minimal transient injury with 5 already placed on the Gallery label. Seven crops exhibited injury in this research: *Astilbe sp.*, *Athyrium filix-femina*, *Dendranthema x morifolium*, *Digitalis purpurea*, *Echinacea purpurea*, *Stachys byzantine*, and *Thymus sp.*

### **Mesotrione SC Crop Safety**

During 2007, IR-4 completed 71 trials on Mesotrione SC. The data contained in this report was generated to register uses of mesotrione on and around ornamental horticulture plants with over-the-top applications. The mesotrione rates in the 2007 testing program were 0.187, 0.25 and 0.37 pounds active ingredient per acre (lb ai per A) as the 1X, 1.5X and 2X rates. Mesotrione SC had been applied to 32 plant genera or species. Of these, 2 exhibited no or minimal transient injury after application at all three rates. Two crops exhibited no phytotoxicity at 0.187 and 0.25 lb ai per acre, but did have some injury at 0.37 lb ai per acre: *Juniperus sp.* and *Miscanthus sp.* Nineteen crops exhibited significant phytotoxicity at even the lowest rate: *Dianthus gratianopolitanus*, *Echinacea purpurea*, *Hydrangea quercifolia*, *Ilex sp.*, *Lagerstroemia indica*, *Liriope sp.*, *Ophiopogon sp.*, *Phlox paniculata*, *Phlox subulata*, *Picea sp.*, *Pseudotsuga menziesii*, *Rosa sp.*, *Salvia sylvestris*, *Spiraea sp.*, *Taxus sp.*, *Thuja occidentalis*, *Veronica sp.*, *Viburnum sp.*, and *Vinca sp.*

## **ATTACHMENT 8 – Continued**

### **Phytophthora Efficacy**

From 2003 to 2007, 40 products were tested through the IR-4 Program as drench or foliar applications against nine *Phytophthora* species causing root rots and stem/leaf blights (Table 1). *Phytophthora* species tested included: *P. cactorum*, *P. cinnamomi*, *P. citricola*, *P. cryptogea*, *P. dreschleri*, *P. nicotianae/parasitica*, *P. ramorum*, *P. syringae*, and *P. tropicalis*. Control of *Phytophthora cinnamomi* root rot was achieved primarily with drench applications onto azaleas. When this pathogen was tested on rhododendrons, the data were either inconclusive or the products did not perform as well as on azaleas with the exception of Magellan and Fenamidone. For *Phytophthora dreschleri* root rot, the good to excellent efficacy was achieved with several products including BioPhos, Segway, Stature DM, and Terrazole. For *Phytophthora nicotianae*, consistent efficacy across crops was difficult to achieve, but the best performers included Aliette, Biophos, Fenamidone, Insignia, Segway and Stature DM. The best control of *Phytophthora citricola* blight was achieved with foliar applications of the phosphorus acid generators Aliette, Biophos and Magellan. For *Phytophthora ramorum* blights, Subdue MAXX provided the most consistent control. Fenamidone, Insignia, Segway, Stature and V-10161 also provided good control.

### **Sethoxydim Crop Safety**

Segment (sethoxydim), under the trade name Vantage, was initially registered in 1990 for ornamental horticulture uses. This initial label contained an extensive list of ornamental horticulture plants in nurseries and landscapes where Segment could be used without causing phytotoxicity. In 1995, the list was expanded and a section on wildflowers was added. Starting in 1981, IR-4 examined 106 crops to either contribute to the initial label written for ornamental horticulture uses or to expand this label to additional crops. Of the researched crops, 76 have already been placed on the label. Only 4 crops can be recommended at this time for label expansion based solely on IR-4 data: *Aucuba japonica*, *Berberis darwinii*, *Chamaecyparis obtusa*, and *Lilium sp.* It is recommended that the 26 other crops be considered for inclusion on the label if data from other sources are or become available.

### **Sulfentrazone Crop Safety**

Since 1996 IR-4 has completed 239 trials with products containing sulfentrazone (Sulfentrazone 0.2G and Sulfentrazone 4F) on 94 crops. The data contained in this report was generated to register uses of sulfentrazone on and around ornamental horticulture plants with over-the-top applications. The sulfentrazone rates in the 2006 and 2007 testing programs were 0.125, 0.25 and 0.5 pounds active ingredient per acre (lb ai per A) as the 1X, 2X and 4X rates. Sulfentrazone 0.2G had been applied to 50 plant genera or species. Of these, 23 exhibited no or minimal transient injury after application at all three rates. Two crops exhibited no phytotoxicity at 0.125 and 0.25 lb ai per acre, but did have some injury at 0.5 lb ai per acre. Only 3 crops (*Canna sp.*, *Echinacea purpurea*, and *Hosta sp.*) exhibited phytotoxicity at even the lowest rate. Sulfentrazone 4F has been applied to 56 crops since 1996. Of these only 6 (*Buxus sp.*, *Ilex vomitoria 'nana'*, *Juniperus horizontalis*, *Rosa sp.*, *Taxus sp.*, and *Thuja sp.*) exhibited no damage with over the top applications at all tested rates. Ten crops had minimal, transitory damage at the lower rates but some phytotoxicity at the 4X rate and 13 crops exhibited damage at all tested rates.

## **ATTACHMENT 8 – Continued**

### **Thrips Efficacy**

For the last 3 years, the IR-4 Ornamental Horticulture Workshop has ranked developing efficacy data on new products to manage thrips as a High Priority Project. Thrips remain an important threat for several reasons: 1) the damage thrips cause to ornamental horticulture plants, decreasing the value of the infested crops; 2) the tospoviruses (tomato spotted wilt, impatiens necrotic ringspot) they can vector; 3) the newly arrived invasive species which impact at least 250 different ornamental horticulture species; and 4) growers lack the ability to rotate among 3 to 4 different modes of actions to effectively manage resistance development in the thrips populations they must control to maintain economic viability. From 2006 through 2007, 43 products representing 38 different active ingredients were tested for thrips management. These products represented both biological and chemical tools. Some products were already registered but more data were needed particularly with the newly invasive thrips species or they were considered standards to measure the level of efficacy achieved with other materials. Other products were in development but have not yet been registered with the EPA. The four thrips species tested in the IR-4 program were Chili Thrips (*Scirtothrips dorsalis*), Gladiolus Thrips (*Thrips simplex*), Weeping Fig Thrips (*Gynaikothrips uzeli*), and Western Flower Thrips (*Frankliniella occidentalis*).

### **Trifluralin + Isoxaben Crop Safety**

Several good herbicide products are available to manage weeds in and around nursery crops. Because growers produce many different plant species and cultivars and because many new crops are grown every year, this research was undertaken to expand the three pre-emergent herbicide labels: Pendulum 2G (pendimethalin), Pennant Magnum (s-metolachlor), and Snapshot 2.5TG (trifluralin + isoxaben). This report covers only Snapshot 2.5TG. The rates chosen for this research were 2.5, 5, and 10 pounds active ingredient per acre (lb ai per A) as a 1/2X, 1X and 2X rates. One hundred nine different species were examined. Of these, 33 exhibited no or minimal transient injury after application at all three rates. Six crops exhibited no phytotoxicity at 2.5 or 5.0 lb ai per acre, but did have some injury at the higher rate of 10 lb ai per acre. Twenty-three species exhibited phytotoxicity at the 5 lb ai per acre rate. For the remaining 41 crops, IR-4 would recommend generating additional data because either fewer than 3 trials were conducted or different locations exhibited different responses.

## **ATTACHMENT 9- Biopesticide and Organic Support Program**

### **Research Cooperators**

#### **NORTHCENTRAL REGION**

Dr. Mike Ellis	OH
Dr Luis Canas	OH
Dr. Rufus Issacs	MI
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Dr William Kirk	MI

#### **NORTHEAST REGION**

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#### **WESTERN REGION**

Dr. Douglas Gubler	CA
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#### **SOUTHERN REGION**

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Dr. Lukasz Stelinski	FL
Dr. Natalia Peres	FL
Dr. Yan Chen	LA
Dr. Scott Ludwig	TX

#### **USDA-ARS**

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### **Biopesticide Registration Packages Submitted in 2008**

<b><u>Product</u></b>	<b><u>Crop</u></b>	<b><u>PR Number</u></b>	<b><u>TYPE</u></b>	<b><u>Registration Type</u></b>
Acetic acid	All food crops	0370B	Herbicide	New Registration
Trichoderma hamatum 382	All Food Crop	0049B	Fungicide	Amendment
Aspergillus flavus AF36	Pistachio	0378B	Fungicide	EUP add Arizona

## **ATTACHMENT 9 – Continued**

### **New Registrations supported by the Biopesticide Efficacy Grant Program**

<b>Product</b>	<b>Crop</b>	<b>PR Number</b>	<b>TYPE</b>
Chenopodium ambrosoides	Impatiens	0448B	Insecticide
Chenopodium ambrosoides	Petunia	0590B	Insecticide
Paecilomyces lilacinus strain 251	Pineapple	0272B	Nematicide
Paecilomyces lilacinus strain 251	Tomato	0273B	Nematicide
Verbonone	Pine	0113B, 0309B	Insecticide
Bacillus subtilus GB03	Pumpkin	0625B	Fungicide
Bacillus subtilus GB03	Peanut	0516B	Fungicide
Bacillus subtilus GB03	Pepper	0517B	Fungicide
Ammonium nonanoate	Pepper	0489B	Herbicide
Bacillus firmus	Potato	0454B	Nematicide
Bacillus firmus	Apple	0455B	Nematicide
Bacillus firmus	Carrot	0456B	Nematicide
Bacillus firmus	Celery	0457B	Nematicide
Bacillus firmus	Cherry	0458B	Nematicide
Bacillus firmus	Ornamentals	0459B	Nematicide
Bacillus firmus	Lettuce	0460B	Nematicide
Bacillus firmus	Soybean	0462B	Nematicide
Bacillus firmus	Sugarbeet	0454B	Nematicide

#### **Early stage projects funded:**

Management of carob moth on dates using pheromone mimic
Development of mating disruption technique for control of citrus leafminer: formulation and evaluation of SPLAT-CLM
Evaluation of Bacillus mycoides for management of pecan sca
Flowable SPLAT OrB for mating disruption of the oriental beetle
Enhancing the delivery and effectiveness of Beauveria bassiana-based bioinsecticide to control the European fire ant, Myrmica rubra
Evaluation of a benign strain of Xylella fastidiosa for the biological control of Pierce's disease of grapevine



## **ATTACHMENT 9-Continued**

### **Advanced stage projects funded:**

Evaluation of the phosphate fungicide Agri-Fos as a foliar spray and the combination of Agri Fos and the bark-penetrating adjuvant Pentra-Bark as a dormant application for control of grape Black rot
Evaluation of Dormant applications for phosphate fungicide and the bark penetrating adjuvant Pentra Bark for control of early season apple scab
Evaluating biopesticides for control of black rot and phomopsis in organic grape production
Evaluation and comparison of biofungicides and fungicides for the control of post harvest potato tuber diseases
Efficacy of selected bioinsecticides for control of whiteflies and western flower thrips on greenhouse tomatoes
Potential of wax pheromone as a biopesticide for grape berry moth control
Efficacy of Biofungicide Products at the Advanced Stage of Development for Foliar Diseases in Organically-Produced Tomato
Evaluation and Integration of Biopesticides into Bushberry Disease Management Programs
Ammonium Nonanoate: As a Bioherbicide in Plasticulture
Evaluation of the efficacy of biopesticides for control of bacterial spot on tomato
Evaluation of Biopesticides for Managing Western Flower Thrips in Greenhouse Ornamental Production
Continued research of Metarhizium anisopliae-based biopesticide (Novozymes Biologicals, Inc.) for control of thrips and onion maggot on onions and wireworms on potatoes
Evaluation of Mycoinsecticides for Management of Scirtothrips dorsalis
Reduction of aflatoxin-producing fungi in pistachio orchards using the atoxigenic Aspergillus flavus strain AF36 and effects on orchard air quality
Evaluation of SPLAT-MAT with Spinosad and Methyl Eugenol or Cue-Lure for Suppression/Eradication of Oriental and Melon Fruit Flies (Diptera: Tephritidae)

### **Proposals funded under the Demonstration Program**

Managing rotation of biopesticides to control onion thrips
Efficacy of Biofungicide products at the demonstration state of development for foliar diseases in organically-produced tomato
Reduction of Aflatoxin in Peanut via Afla-Guard Biopesticide
Demonstrating the role and assessing the effectiveness of biopesticides and Bt Transgenic Hybrids for Management of Lepidopteran pests on sweet corn
Efficacy of biofungicides for managing powdery mildew in gerbera daisy
Application of Milsana to control common diseases in strawberry and almond in California
Management of aphids, mites, and thrips in high tunnels using different strains of Beauveria bassiana and diatomaceous earth
Efficacy of Actinovate and Kaligreen within a Biopesticide Intensive IPM system for management of powdery mildew on cantaloupe
Soil and Transplants treatment with Biofungicides for control of Phytophthora capsici on chili pepper

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