

The IR-4 Project



2007
Annual Report

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

January 1, 2007 - December 31, 2007

PROJECT: National Research Service Project No. 4 (NRSP/IR-4). IR-4 Minor Crops Pest Management. January 1, 2007 to December 31, 2007.

COOPERATING AGENCIES AND PRINCIPAL LEADERS: Cooperating agencies, principal leaders of the project, support groups and IR-4 State and Federal Liaison Representatives are shown in Attachment 1. Scientists participating in the project are shown in Attachment 2.

The IR-4 Project continues to pride itself as being a model of interagency cooperation. As a federally funded program IR-4 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 (USDA) agencies, the Agriculture Research Service (ARS) and Cooperative State Research, Education and Extension Service (CSREES), the Foreign Agriculture Service (FAS), the regulatory agencies (US Environmental Protection Agency (EPA), California's Department of Pesticide Regulation and Canada's Pest Management Regulatory Agency as well as Agriculture and Agri-Food Canada to provide the latest pest control tools to US specialty crop growers.

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, 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 priority business objectives because of the limited potential economic return on investment.

The objectives of the IR-4 Project were expanded in 1977 to include registration of pest control products for the protection of nursery, floral, and Christmas trees, and again in 1982 when the objective of clearance of biological pest control products, or biopesticides, was added. For all three objectives (Food Use Program, Ornamental Horticulture Program and Biopesticide Program) 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 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 funding for the IR-4 Project comes through the CSREES. The USDA-ARS established a companion minor use program in 1976 to provide further program support. Recently, USDA-FAS has provided IR-4 resources to work on international activities and promote U.S. specialty crop exports. The SAES contributes financial resources through Multi-state Research (Hatch) Funds and a significant amount of in-kind contributions by housing IR-4 Field Research Centers and Analytical Laboratories and management offices throughout the United States. The crop protection industry also contributes direct financial resources as well as 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 Use Program

The regulatory approval of crop protection chemicals on food crops continues to be the largest single effort of the IR-4 Project. Requests for assistance for registration of new pest management tools on specialty food crops are received from growers, commodity groups, university researchers and extension personnel, USDA researchers and other interested parties through submission of a Project Clearance

Request. Only requests that have received approval from the crop protection industry are considered for research. Researchable projects are prioritized by stakeholders at the annual IR-4 Project Food Use Workshop. Due to resource constraints, only a limited number of projects are given a high priority and scheduled for research in a given year. A research protocol is developed and 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 outside the IR-4 Project infrastructure are utilized. Essentially all of IR-4 efforts in the Food Use Program are conducted under EPA's Good Laboratory Practice Regulations (GLPs) with study oversight by the IR-4 Quality Assurance Unit. 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 harvested 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 is put into a regulatory package and submitted to the EPA. EPA reviews the data, establishes a pesticide tolerance limit and approves the company's registration amendment which includes the specialty crop.

Since 1963, there have been 10,077 IR-4 food-use requests submitted by stakeholders. Of these, 643 are currently considered researchable projects while the remainder have been addressed through previous research and regulatory submissions or it is not possible to address these requests at this time. In 2007, there were 179 new requests submitted and SAES and USDA-ARS cooperators scheduled research on 84 requested projects (studies) which represented 562 field trials. Research protocols were prepared for each study. The chemicals and commodities researched in 2007 are shown in Attachment 3.

Now that EPA has fully implemented the Pesticide Registration Improvement Act (PRIA fee for service), and IR-4 has revised its submission processes as required under PRIA, IR-4 is realizing significant benefits. These not only include a greater number of registrations, but also a more predictable timetable for EPA decisions. In 2007, the PRIA II (PRIA Reauthorization) was passed extending EPA's fee for service program. IR-4 continues with high numbers of new uses granted by EPA each year. EPA established a total of 203 permanent tolerances in 2007 based on IR-4 submissions and five exemptions (including four for biopesticides). Based on EPA's 2007 Annual report, IR-4 accounted for over 50% of all new tolerances on already registered products. These tolerances, considering crop grouping and crop definitions, will support up to 628 new specialty crops on product labels (biopesticides will cover an additional 19 uses). A complete list of these new uses can be found in Attachment 4. Although this is a decrease from the record number posted last year of 804 (1110 total with biopesticides) new uses, it is on par with the record numbers posted over the past five years (also note that Section 18 Time Limited Tolerances have been removed from the counts since 2006).

Several of the IR-4 successes in 2007 required significantly more of EPA's time and resources to complete. For example, the diuron on prickly pear cactus and mint petitions were in the EPA que for many years (originally submitted to EPA in 1986) and required a significant amount of time and resources to conduct a full assessment and bring these projects to a successful conclusion. Other projects that were resource intensive for EPA included coumaphos for use in beehives and oxytetracycline on apple since these were the first OP and antibiotic uses, respectively, registered by EPA since FQPA. In total, EPA reviewed 33 chemistries for IR-4 and two of those chemistries (spinosad and dimethenamid) had multiple postings, meaning they were processed two times by EPA. This compares to 31 chemistries posted for IR-4 petitions by EPA in 2006. There were also other uses approved where IR-4 worked closely with the registrant to obtain new uses, such as spinetoram, a new insecticide that was registered in October of 2007. The registrant was able to convert many of the existing spinosad tolerances that IR-4 established, to spinetoram without generating any additional residue data. This extrapolation of data was based on meetings and communications facilitated between IR-4, EPA, and the registrant.

IR-4 submitted 151 data packages in 2007 to EPA or the registrants to support new registrations, label changes, or re-registration (see Attachment 5). Although this was a slight decrease from the record 2006 number, this is still considerably higher than the number of submissions made in 2005 when 115 were made, due to implementation of new PRIA procedures and requirements. IR-4 needs to include

considerably more information in their submission packages to EPA now since PRIA was enacted. The current number of IR-4 projects in the que for submission to EPA is 253 (see Attachment 6).

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>. The California Department of Pesticide Regulation (CDPR) continues to provide support to the EPA via a work share program. They provided a number of large reviews on chemicals such as clethodim and buprofezin in 2007. The NAFTA joint reviews between EPA and Canada's Pest Management Regulatory Agency (PMRA) continues to progress and IR-4 submissions realized joint approvals of a number of products, including fluazinam that resulted in over 60 potential new uses in 2007. This program is expected to expand and eventually result in joint reviews for all of the joint projects that IR-4 conducts with Agriculture and Agri-Food Canada (AAFC). These efforts, along with support from CDPR, help to provide more resources to EPA, resulting in even more IR-4 project completions and uses of specialty crop growers.

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 and residential landscapes, interiorscapes, Christmas tree farms, and sod farms.

Research Activities. In 2007, IR-4 scheduled 1246 ornamental horticulture research trials to support registrations in the greenhouse, nursery, landscape, Christmas tree, and forestry industries. Of these 622 were efficacy trials designed to compare different products to manage pests and diseases and to measure 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 Appendix 7 for a complete listing of 2007 research activities.

Table 1. 2007 Ornamental Horticulture Program Research Activities.

Category	2007		
	Efficacy	Crop Safety	Total
Number of Studies (PR Numbers) with Planned Trials	409	268	621
Number of Scheduled Trials	622	624	1246
Number of Cancelled Trials	47	34	81
Number of Trials in Progress	242	327	569
Number of Completed Trials	333	263	596
Number of Potentially Impacted Crops ^a	15,642	403	16,045

^a 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.

Project Summaries. During 2007, 8 data summaries were compiled based upon research reports submitted by researchers from 1976 through 2006. These reports were Flumioxazin Crop Safety (Canada), Flumioxazin Crop Safety (U.S.), Halosulfuron Crop Safety, Phytophthora Efficacy, Polyoxin D Crop Safety (CA), Preliminary Q-Biotype Efficacy, Sulfentrazone Crop Safety, and V-10142 Crop Safety. Over 1600 trials contributed to the writing of these reports. See Appendix 8 for a listing of 2007 summarized data.

Table 2. 2007 Ornamental Horticulture Program Research Summaries.

Category	2007		
	Efficacy	Crop Safety	Total
Number of Research Summaries	2	6	8
Number of Trials Contributing to Summaries (USDA-ARS Trials) ^a	338 (28)	1320 (417)	1658 (445)

^a The total number of trials included in the above summaries.

Registrations & Label Amendments. During 2007, two new label registrations were granted for use on ornamental horticulture crops partially based on data generated through the Ornamental Horticulture Program: Celero 16WSG (clothianadin) and Segway (cyazofamid). In addition, four label amendments were granted to add new crops, diseases, or insects partially based on IR-4 data submitted to manufacturers: Pendulum 2G (pendimethalin), Safari 20SG (dinotefuran), Stature DM (dimethomorph) and Subdue Maxx (mefonaxam). IR-4 data also contributed to Safari 20SG registrations in California and New York.

Table 3. Ornamental Horticulture Program Contributions to 2007 Registrations.

Category	2007		
	Efficacy	Crop Safety	Total
Number of New Product Registrations ^a	2	0	2
Number of Label Amendments ^b	3	1	4
Number of State Registrations ^c	2	0	2
Number of Trials Contributing to Registrations (USDA-ARS Trials) ^d	124 (19)	182 (65)	306 (84)
Number of Impacted Crops ^e	2984	160	3144

^a New products for the ornamental horticulture industry based on data collected through IR-4 and submitted to manufacturers in previous years. In 2007, IR-4 data contributed to two new product registrations – Celero 16WSG (clothianadin) and Segway (cyazofamid).

^b 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 2007, IR-4 data contributed to four label amendments – Pendulum 2G (pendimethalin), Safari 20SG (dinotefuran), Stature DM (dimethomorph) and Subdue Maxx (mefonaxam).

^c 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 2007, IR-4 data contributed to the registrations of Safari 20SG in NY and CA.

^d The total number of trials where data was utilized for registrations. In 2007, 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.

^e 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.

In addition to the above, IR-4 is coordinating a pilot seed treatment program examining whether several chemistries impact Coleus Downy Mildew and aphids or lepidopterans on ornamental kale.

Biopesticide Program

The IR-4 Biopesticide Program has the goal of facilitating the registration of crop protection products classified by EPA as being regulated as Biopesticides. IR-4 has four major functions in the biopesticide arena:

- A grants program to fund early stage biopesticide proposals - for products whose core data packages have not yet been submitted to EPA

- A 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
- A 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.
- A registration assistance program – to provide small biopesticide companies with regulatory advice and petition preparation assistance.

In 2007, IR-4 submissions to EPA resulted in an exemption from the requirements of a tolerance for AF36 on pistachio and corn, zucchini yellows mosaic virus-weak strain on cucurbits and tobacco, and mild green mosaic virus on grass and hay crops. In addition an existing conditional tolerance exemption for AF36 on cotton was converted to a permanent tolerance exemption for a total of 19 new biopesticide uses (see Attachment 9a). IR-4 submitted 2 data packages (see Attachment 9b).

The Biopesticide Research Program is in its tenth year of competitive grant funding of projects, amounting to over \$4,175,000 in grants to researchers since its inception. Previous work with this program resulted in 2 new registrations in 2007 (see Attachment 9c). In 2007, the biopesticide grant program funded 5 Early Stage (see Attachment 9d), 19 Advanced Stage (see Attachment 9e) and 13 Demonstration Stage projects (see Attachment 9f). These were conducted at 21 different universities and USDA research units. The research involved 30 scientists 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.

The Biopesticide and Organic Product Label Database was released and is undergoing continual revision. The label database was funded through an EPA Region 2 grant.

Crop Grouping Initiative

Crop grouping enables the establishment of residue tolerances for a group of crops based on residues 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 (MRL’s) and trade. Canada’s PMRA is working concurrently with EPA to update their registration as well

In 2007, EPA published the first update of the crop groupings. A final rule was published in December 2007 that expanded Bulb Vegetable group 3, the Berry and Small Fruit group 13 and established a new Edible Fungi group 21. This action will allow for a significant number of additional registrations for crops in these groups.

Two groups, Oilseed group 20 and Citrus Fruit group 10 that were submitted in 2006 were reviewed and approved by EPA scientists in 2007. These expansions will be codified in 2008. One submission requesting an expansion of Stone Fruit group 12 was made in 2007.

Efforts to harmonize crop grouping systems between the US and Codex continue with the submission in December by the Netherlands and US of proposals for Berries and small fruits and Edible Fungi to the Electronic Working Group on the revision of the Codex Classification.

Quality Assurance Unit

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 Use Program. A key component of compliance is 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 of 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 14-15, 2007 in Geneva, NY. At this meeting the audit plan for 2007 was created. For 2007, regular inspections included 37 facility inspections, approximately 189 field in-life inspections, 105 analytical in-life inspections, 84 analytical summary report/data audits and 673 field data book audits. During the 2007 calendar year approximately 109 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 field testing sites, one IR-4 analytical laboratory and two sample processing test sites were audited in 2007 by the EPA for GLP compliance and data integrity. A total of 87 IR-4 related facilities have been inspected for GLP compliance since April 27, 1997.

The IR-4 Headquarters and IR-4 Regional QA staff held a fall meeting on October 31-November 1, 2007. This meeting was held at IR-4 Headquarters in conjunction with the National Research Planning Meeting.

Other Initiatives/Activities

Seed Technology Initiative:

2007 was the third year for the seed treatment initiative. A major accomplishment was the collection of a critical mass of data that will allow for wide-spread use of spinosad as a seed treatment on numerous vegetable crops. Spinosad is being found to be very effective used in this manner. It is safe to say that spinosad seed treatments would not have been possible without the help of IR-4.

International Activities:

IR-4 continues to cooperate in many aspects with Canada and its Minor Use Program. In 2007, 15 new cooperative projects were started that consisted of numerous field trials in both countries. For the first time, AAFC personnel served as sponsor and Study Director for a joint study (cranberries) using a Canadian protocol and field data book. The final report will be prepared in Canada and submitted as a NAFTA joint review by PMRA and EPA. 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.

As global markets for US produced specialty crops continue to grow, so does IR-4's involvement with global harmonization of pesticide tolerances (MRL's) and other global issues. IR-4 continues to participate in global organizations that involve pesticide issues. 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). Additionally, the Food and Agriculture Organization of the United Nations (FAO) invited a representative from the IR-4 Project to participate in the 2007 Joint Meeting on Pesticide Residue Meeting (JMPPR) where the participants reviewed residue data and made recommendations for establishment of Codex MRL's.

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. To this end, 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. Nearly 300 people representing 60 countries registered for the GMUS, The goals of the GMUS were to bring countries and organizations together and address challenges in specialty crops and minor uses; discuss requirements for residue trials and residue data generation that are acceptable nationally and

internationally; discuss approaches on a harmonized data generation program and ways to share residue data developed for minor and specialty crops in support of national and international tolerances/MRLs; support crop classification systems and crop grouping approaches in promotion of international trade under Codex; and support countries' access to advanced residue programs and provide information on the established programs.

The Action Items coming from the GMUS include:

- Establishment of web portal that provides a single source to find information on global minor use programs, global use authorizations on specialty crops, crop classification systems, etc.
- Facilitate capacity building in developing countries including capacity for biopesticides, data generation, multilateral review
- Have Codex member countries encourage Codex to establish a Codex Working Group on Specialty Crops and Minor Uses
- Conduct pilot projects that would facilitate global harmonization
- Plan for the second Global Minor Use Summit II in early 2010

Participants in 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 in establishment of research priority setting policies. This is in addition to the direct feedback from the IR-4 **Commodity Liaison Committee (CLC)** and the **Minor Crop Farmers Alliance**. These two groups 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.
- **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 crop protection industry companies. In 2007, meetings were held with 20 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 and IR-4 analytical laboratories and IR-4 regional and national management offices. Specific acknowledgement goes to the directors of the SAES in CA, FL, MI, NJ and NY that host regional IR-4 offices and 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.
- **Agriculture and Agri-Food Canada (AAFC) Pest Management Centre**. The partnership between IR-4 and AAFC'S Pest Management Centre continued to flourish in 2007. 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. IR-4 staff, at the invitation of AAFC, participated in the March 2007 Canadian Minor Use Workshop. 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 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 trails. The highlight of the cooperative partnership is the progress made on the crop grouping modifications as well as co-sponsoring the Global Minor Use Summit.

- **Other regulatory agencies including California's Department of Pesticide Regulation (CDPR) and Health Canada's Pest Management Regulatory Agency (PMRA).** 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 the residue chemistry reviews for 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 eight month review timeline, which reduces the timeline by nearly half of typical reviews. 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.

Impact

The successes, accomplishments and deliverables of the IR-4 Project have been documented by the Food Use Program, Ornamental Horticulture Program, Biopesticide Program, Crop Grouping Initiative, Quality Assurance Unit and Other Initiatives/Activities sections. 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 today.

The accomplishments of the IR-4 Project are many. There are many antidotal comments from specialty crop growers on the impact of the IR-4 Project on 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 activities. Their assessment indicated that the efforts of the IR-4 Project add \$7.7 billion dollars annually to the gross domestic product.

FY 2007 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 (FAO).

The FY 2007 CSREES appropriation for the IR-4 Project remained at \$10,667,150 based on an Omnibus Appropriation Bill passed by Congress in February 2007. The amount appropriated to the USDA-ARS Minor Use Program remained at \$3,860,100. 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 \$28,600. The commodity and crop protection industries were able to assist the IR-4 Project by providing approximately \$1,536,500 in grants. Total direct funding for the IR-4 Project during calendar year 2007 was \$16,545,000.

This value does not include the in-kind contributions provided by the crop protection industry, commodity groups and state agricultural experiment stations, which are substantial. 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.

During the 2007 Appropriations process, Congress changed the funding line for the IR-4 Project from a Special Research Grant to a Competitive Grant. This change was made to move IR-4 out of a funding category that classified it as an Earmark. The impact of this change was far reaching. First, the change resulted in uncertainty in regards to the amount of IR-4 grant that could be retained by the host

institutions to cover indirect costs. The uncertainty, combined with additional uncertainty of when the grant dollars would be available almost resulted in an IR-4 cancellation of new research in 2007. However, USDA was able to determine that indirect cost recovery was still not allowed, then, they went to extraordinary steps to process the grant in a very timely manner. In spite of the uncertainty and challenges, IR-4 was able to maintain a normal program during the transition.

Future Directions

WORK PLANNED FOR 2008

IR-4 will continue to seek input and technical guidance from all of its stakeholders, including state and federal agricultural scientists and 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.

The **Food Use Program** research for year 2008 will consist of approximately 81 studies supported by 599 field trials. This is 3 less studies and 45 fewer field trials than in 2007, and is a direct reflection of the shortfall of funds to sustain the IR-4 Project. The distribution of 2008 field trials within the IR-4 Project consists of 461 conducted by IR-4 units associated with the state agricultural experiment stations, 88 conducted by USDA-ARS and 50 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. IR-4 will continue to participate in GLP and/or QA training sessions with IR-4 personnel and cooperators. A training session sponsored by the Southern Regional office is planned for February 20 and 21, 2008. The 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 11-12, 2008 in Davis, CA to conduct the annual QA Planning Meeting.

For the 2008 **Biopesticide Research Program**, IR-4 received a total of 65 proposals requesting approximately \$900,000. Out of the 65 proposals 13 are Early Stage, 38 are advanced Stage and 14 are Demonstration Stage proposals. Of the 65 proposals 57% involved disease management, 38% were for insect/mite management with the remainder for weed control and nematode control. Final decisions on funded proposals will be made by March 1, 2008.

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

The **Seed Treatment Technology** initiative will continue in 2008. Funds have been secured from industry sources to further investigate insect and disease management using pest control materials applied to vegetable seeds. The program is completely funded by industry sources. Bayer Crop Science, DuPont, BASF, and Dow AgroSciences will be participating in 2008. The program will focus on various seed pelleting technologies and will utilize university researchers and grower cooperators across the U.S.

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 hopes to receive significant 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 and pepper/eggplant at 15 locations across the world. This will provide data which will allow scientists to determine if the geographic zone affects the ultimate residues in the test crop.

The IR-4 Project Management Committee (PMC) has scheduled a Strategic Planning Conference in December, 2008 to obtain stakeholder input for the next planning period. This will be the roadmap for IR-4 activities over the next five years.

OVERALL SUMMARY

In summary, the total new food use clearances supported by IR-4 research in 2007 include: 628 new chemical clearances and 19 new biopesticide clearances for a total of 647 new uses. It should be noted that IR-4 also supported 21 Section 18 Time limited tolerances that support 45 different uses, and it is expected that IR-4 submissions will eventually make these uses permanent. The 647 clearances in 2007 bring the 44 year total to over 11,057.

PUBLICATIONS/PRESENTATIONS

Arsenovic, M., F.P. Salzman, D. L. Kunkel and J.J. Baron. 2007. The IR-4 Project: Herbicide Registration Update. Proceedings of the 61st Annual Meeting of the Northeastern Weed Science Society. Pp.104.

Arsenovic, M., F. P. Salzman, D. Kunkel, and J. Baron. The IR-4 Project: Update on Herbicide Registration in Specialty Crops in the United States. Proceedings of the 14th EWRS Symposium, pp 46.

Baron, J.J., R.E. Holm, D.L. Kunkel, H. Chen. 2007. Impact of Pesticide Residues on the Global Trade of Food and Feed in Developing and Developed Countries in *Pesticide Chemistry, Crop Protection, Public Health, Environmental Safety*, pg 323-330, ed by H. Ohkawa, H. Miyagawa and P.W. Lee. Wiley-VCH, Weinheim

Baron, J.J., Novack S. 2007. IR-4: A Program of Proven Success for Specialty Crop Growers. Specialty Chemicals Magazine. Volume 27, Issue 10.

Braverman, M., J.J. Baron and D.L. Kunkel. 2007. Research and Development Strategies for Registration of Biopesticides. Proceedings Southern Weed Science Society, 60th Annual Meeting, Nashville, Tennessee.

Braverman, M., J.J. Baron , D.L. Kunkel, and R.E. Holm. 2007. Registration and Efficacy Grant Program of the IR-4 Project. Annual Meeting, American Phytopathological Society, San Diego, CA.

Braverman, M., 2007. IR-4 Grant Program and Database Survey Update Biopesticide Industry Alliance Meeting, Ottawa, Canada

Braverman, M., 2007. Biopesticide Market and Opportunities in the North America Annual Biocontrol Industry Meeting. Lucerne, Switzerland

Corley, J., D.L. Kunkel, and the IR-4 Team. 2007. The IR-4 Project: Crop Trials and Residue Analysis; Providing Pest Management Solutions to Specialty Crop Growers. Plenary Lecture, 21st Conference of Residue Chemists; Melbourne, Australia, Nov. 12-15, 2007.

Hackett-Fields, K. 2007. Walking the Data Trail - Documentation and Data Integrity. 23rd Annual Meeting of the Society of Quality Assurance, Austin, TX. Session DD-3.

Kunkel, D. 2007. Protecting Our Crops: Herbicides. American Vegetable Grower. December issue page 8.

Novack, S. 2007. IR-4 Newsletter Vol. 38 No. 1, January 2007.

Novack, S. 2007. IR-4 Newsletter Vol. 38 No. 2, April 2007.

Novack, S. 2007. IR-4 Newsletter Vol. 38 No. 3, July 2007.

Novack, S. 2007. IR-4 Newsletter Vol. 38 No. 4, October 2007.

Palmer, C.L., J. Baron, and E. Veal. 2007. Update on the 2006 Weed Science Research Program and 2007 Research Priorities. Proceedings of the 62nd Northeastern Weed Science Society.

Starner, V.R. and S. Novack. 2007. "Something's A Buzz on the Eastern Shore" – IR-4/EPA/USDA Field Tour June 27, 2007 tour book. New Jersey Agricultural Experiment Station Publication No. P-27200-06-07, 25 pp.

Starner, V.R., D.L. Kunkel and J.J. Baron, 2007. "IR-4 Strategies, New Programs And Goals in Specialty Crop Pest Management." Invited presentation at the Annual Michigan IR-4 Meeting, East Lansing, MI, 3/20/07.

Starner, V.R., J.J. Baron, D.L. Kunkel and S. Novack, 2007. "The IR-4 Project at Rutgers." Invited lecture for Rutgers Agricultural Entomology & Pest Management class, 4/25/07.

December 31, 2007

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

Approved:

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

D. Rossi, Chair, IR-4 Administrative Advisers
NJ Agricultural Experiment Station
Rutgers, The State University of New Jersey

Attachments:

1. Cooperating Departments and Agencies
2. Field and Laboratory Research Cooperators - 2007
3. 2007 Food Use Research Projects
4. New Tolerances and Approvals - 2007
5. Registration Packages Submitted in 2007
6. Pending Submissions
7. 2007 Ornamental Horticulture Program Research Activities - General
8. 2007 Ornamental Horticulture Program Summarized Data - General
9. Biopesticide Program

ATTACHMENT 1

COOPERATING DEPARTMENTS AND AGENCIES

Agriculture and Agri-Food Canada

California Department of Pesticide Regulation

U.S. Department of Agriculture, Agricultural Research Service

U.S. Department of Agriculture, Cooperative State Research Education and Extension Service

U.S. Department of Agriculture, Foreign Agriculture Service

U.S. Department of Agriculture, Office of Pest Management Policy

U.S. Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances

PRINCIPAL LEADERS

Project Management Committee (PMC):

Dr. J. Baron, <i>Rutgers University, NJ</i>	Executive Director, IR-4 Project
Dr. D. Buhler, <i>Michigan State University</i>	Northcentral Region (Administrative Advisor)
Dr. M. Duryea, <i>University of Florida</i>	Southern Region (Administrative Advisor)
Dr. R. Hollingworth, <i>Michigan State University</i>	Northcentral Region
Dr. M. Johnson, <i>U.S. Department of Agriculture</i>	USDA-CSREES
Mr. R. Lundy, <i>Mint Industry Research Council</i>	Commodity Liaison Committee Chair
Dr. M. Marshall, <i>University of Florida, Chair</i>	Southern Region Director
Dr. M. Miller, <i>University of California, Davis</i>	Western Region Director
Dr. M. Parrella, <i>University of California, Davis</i>	Western Region (Administrative Advisor)
Dr. M. Robson, <i>Rutgers University, NJ</i>	Northeast Region (Administrative Advisor Alternative)
Dr. D. Rossi, <i>Rutgers University, NJ, Chair</i>	Northeast Region (Administrative Advisor)
Dr. S. Schneider, <i>U.S. Department of Agriculture</i>	USDA-ARS (Administrative Advisor)
Dr. P. Schwartz, Jr., <i>U.S. Department of Agriculture</i>	USDA-ARS
Dr. D. Soderlund, <i>Cornell University, Geneva, NY</i>	Northeast Region Director

SUPPORT GROUPS

Headquarters Technical and Support Staff:

Dr. M. Arsenovic
Mr. W. Barney
Dr. J. Baron
Dr. M. Braverman
Ms. U. Burke
Dr. D. Carpenter
Dr. H. Chen (*until November*)
Dr. J. Corley
Dr. K. Dorschner
Ms. C. Ferrazoli
Ms. J. Forder
Ms. K. Hackett-Fields
Ms. L. Harrison
Ms. D. Infante
Dr. D. Kunkel
Mr. R. Leonard
Ms. S. Nagahiro
Ms. S. Novack
Dr. C. Palmer
Ms. B. Patel
Dr. F. Salzman
Mr. K. Samoil

ATTACHMENT 1 (Continued)

Ms. K. Sims
Dr. V. Starner
Dr. D. Thompson
Ms. J. Thompson
Dr. E. Vea
Ms. T. White

*The National Headquarters is located at the 500 College Road East, Suite 201W,
Princeton, NJ 08540; (732) 932-9575; FAX (609)514-2612*

Regional Technical Staff:

Ms. B. Anderson, <i>Regional Quality Assurance Coordinator</i>	Northeast Region
Mr. M. Beran, <i>Regional Assistant Quality Assurance Officer</i>	Western Region
Dr. Z. Chen, <i>Regional Quality Assurance Coordinator</i>	Northcentral Region
Mr. S. Flanagan, <i>Regional Assistant Field Coordinator</i>	Western Region
Dr. M. Hengel, <i>Regional Laboratory Coordinator</i>	Western Region
Dr. R. Hollingworth, <i>Regional Director</i>	Northcentral Region
Dr. W. Jiang, <i>Regional Laboratory Coordinator</i>	Northcentral Region
Ms. K. Knight, <i>Regional Quality Assurance Coordinator</i>	Southern Region
Dr. C. Lam, <i>Regional Laboratory Coordinator</i>	Northeast Region
Dr. P. Larsson-Kovach, <i>Regional Laboratory Coordinator</i>	Northeast Region
Ms. E. Lurvey, <i>Regional Field Coordinator</i>	Northeast Region
Dr. M. Marshall, <i>Regional Director</i>	Southern Region
Dr. C. Meister, <i>Regional Field Coordinator</i>	Southern Region
Mr. J. McFarland, <i>Regional Quality Assurance Coordinator</i>	Western Region
Dr. M. Miller, <i>Regional Director</i>	Western Region
Dr. S. Miyazaki, <i>Regional Field Coordinator</i>	Northcentral Region
Ms. R. Sisco, <i>Regional Field Coordinator</i>	Western Region
Dr. D. Soderlund, <i>Regional Director</i>	Northeast Region
Ms. J. Yoh, <i>Regional Laboratory Coordinator</i>	Southern Region

Commodity Liaison Committee (CLC):

Ms. R. Adcock, <i>American Farm Bureau Federation</i>	Washington, DC
Mr. M. Aerts, <i>Florida Fruit and Vegetable Association</i>	Orlando, FL
Mr. M. Arney, <i>National Watermelon Promotion Board</i>	Orlando, FL
Dr. A. Bonanno, <i>Bonanno Farm Trust</i>	Methuen, MA
Mr. B. Buurma, <i>Buurma Farms, Inc.</i>	Willard, OH
Dr. T. Davenport, <i>National Grape Cooperative</i>	Westfield, NY
Dr. H. Ewart, <i>California Citrus Quality Council</i>	Auburn, CA
Dr. B. Flood, <i>DelMonte Foods</i>	Rochelle, IL
Ms. A. George, <i>Washington Hop Commission</i>	Moxee, WA
Mr. H. Giclas, <i>Western Growers Association</i>	Newport, CA
Mr. J. Keeling, <i>National Potato Council</i>	Washington, DC
Mr. P. Korson, <i>Cherry Marketing Institute</i>	Lansing, MI
Mr. R. Lundy, <i>Mint Industry Research Council, CLC Chair</i>	Stevenson, WA
Mr. E. Maurer, <i>Valent USA Corporation</i>	Washington, DC
Mr. K. Melban, <i>California Pepper Commission</i>	Dinuba, CA
Mr. R. Olszack, <i>Tropical Fruit Growers of South Florida, Inc.</i>	Homestead, FL
Mr. R. Prewett, <i>Texas Vegetable Association</i>	Mission, TX
Mr. R. Ratto, <i>Ratto Brothers</i>	Modesto, CA
Ms. L. Schmale, <i>Society of American Florists</i>	Alexandria, VA
Mr. T. Scholz, <i>USA Dry Pea & Lentil Council</i>	Moscow, ID
Mr. M. Tefteau, <i>American Nursery & Landscape Association</i>	Washington, DC
Mr. D. Trinka, <i>MBG Marketing</i>	Grand Junction, MI

ATTACHMENT 1 (Continued)

IR-4 Project/USDA Minor Use Program Quality Assurance Officers

Northcentral Region

Dr. Z. Chen MI
Dr. B. Jensen WI
Dr. D. Killilea ND

Southern Region

Mr. K. Knight FL
Ms. R. Hornbuckle USDA-ARS GA
Ms. P. Messick NC
Dr. K. Schulbach FL

Northeastern Region

Ms. B. Anderson NY
Consultants
Dr. K. Kanagalingam MD
Ms. E. Lopez DE
Ms. M. Oster DE

Western Region

Mr. J. McFarland CA
Mr. M. Beran CA
Ms. D. Bradway OR
Ms. J. Campbell ID
Ms. R. Harada HI
Consultants
Ms. M. Erickson CA
Ms. M. Lynn WA
Mr. J. Obrist CA
Ms. T. Witter NM

State and Federal IR-4 Liaison Representatives

Northcentral Region

Dr. K. Al-Khatib KS
Dr. R. Becker MN
Dr. R. Cloyd KS
Dr. D. Doohan OH
Dr. R. Hartzler IA
Dr. S. Kamble NE
Dr. C. Krause USDA-ARS OH
Dr. J. Locke USDA-ARS OH
Dr. S. Miyazaki MI
Dr. M. Reding USDA-ARS, OH
Dr. G. Smith MO
Dr. D. Williams IL
Dr. M. Williams USDA-ARS IL
Dr. L. Wrage SD
Dr. J. Wyman WI
Dr. A. York IN
Dr. R. Zollinger ND

Northeast Region

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

ATTACHMENT 1 (Continued)

State and Federal IR-4 Liaison Representatives (continued):

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 GA
Dr. C. Gilliam	AL
Mr. C. Luper	OK
Mr. M. Matocha	TX
Dr. C. Meister	FL
Dr. D. Monks	NC
Dr. A. Simmons	USDA-ARS SC
Dr. A. Thompson	TN
Dr. M. Weaver	VA
Mr. T. Webster	USDA-ARS-GA
Vacant	PR
Vacant	VI

Western Region

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

ATTACHMENT 2

FIELD AND LABORATORY RESEARCH COOPERATORS - 2007

The IR-4 Project is grateful to the many agricultural scientists who participated in the field and laboratory research phases of the program in 2007. Although their efforts frequently are unrecognized, their cooperation is the essential element in producing the data, field residue samples and laboratory analyses which meet EPA data requirements and conform to Good Laboratory Practice Standards. The continuing association with the minor use program of many state and federal scientists not only enhances the quality of the data but adds credibility that the objectives of the program are being met.

NORTHCENTRAL REGION

Dr. S. Chapman	WI	Dr. W. Jiang	MI
Mr. M. Ciernia	ND	Mr. C. Lee	ND
Dr. S. Clay	SD	Ms. D. Markle	ND
Dr. M. Hausbeck	MI	Dr. R. Wilson	NE
Mr. D. Heider	WI	Dr. J. Wise	MI
Mr. B. Jenks	ND	Dr. B. Zandstra	MI

NORTHEAST REGION

Dr. R. Bellinder	NY	Dr. C. Lam	NY
Ms. M. Bonham	NJ	Dr. P. Larsson-Kovach	NY
Ms. J. Collins	ME	Mr. W. Palmer	NY
Mr. H. Humphreys	NY	Ms. M. Ross	MD
Dr. G. Jordan	NY		

SOUTHERN REGION

Mr. R. Batts	NC	Mr. T. Minter	FL
Dr. J. Crane	FL	Dr. W. Stall	FL
Ms. L. Gregg	TX	Dr. A. Thompson	TN
Mr. J. Johnson	FL	Ms. J. Yoh	FL

WESTERN REGION

Dr. M. Bari	CA	Mr. J. Kam	HI
Mr. B. Boutwell	CA	Ms. G. Koskela	OR
Ms. J. Coughlin	HI	Dr. Q. Li	HI
Mr. M. Craig	NM	Mr. W. Meeks	ID
Mr. J. DeFrancesco	OR	Mr. M. Miller	CA
Mr. D. Ennes	CA	Mr. C. Oman	CO
Mr. C. Farrar	CA	Ms. S. Rivera	CA
Mr. D. Groenendale	WA	Mr. D. Stewart	CA
Dr. M. Hengel	CA	Ms. K. Skiles	CA

ATTACHMENT 2 (Continued)

USDA-ARS

Mr. P. Alexander	AZ	Mr. D. McCommas	TX
Ms. S. Benzen	CA	Ms. E. Pfeil	MD
Mr. B. Fraelich	GA	Dr. A. Simmons	SC
Mr. J. Harvey	WA	Mr. T. Treat	WA
Mr. T. Hendricks	GA	Mr. T. Wixson	WA
Ms. L. Horst	OH		

CANADA

Ms. K. Bedford	BC	Mr. B. Rancourt	QC
Ms. V. Brookes	BC	Mr. G. Riddle	ON
Ms. A. DeKoninck	MB	Mr. M. Trudeau	QC
Mr. R. Grohs	ON	Ms. K. VanderWilp	QC
Mr. R. Hadd	QC	Ms. M. Weber	ON
Ms. J. Penner	ON	Mr. M. Welford	AB
Ms. H. Peill	NS	Mr. P. White	ON
Mr. M. Pogoda	ON		

2007 IR-4 Ornamental Horticulture Researchers

NORTHCENTRAL REGION

Dr. L. Canas	OH
Dr. R. Cloyd	IL
Mr. T. Davis	MI
Dr. M. Hausbeck	MI
Dr. M. Marshall	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. S. Costa	VT
Dr. D. Gilrein	NY
Dr. A. Brooks Gould	NJ
Dr. T. Mervosh	CT
Dr. B. Miller	NY
Dr. A. Pennucci	NH
Dr. A. Senesac	NY
Dr. P. Weston	NY
Dr. R. Wick	MA

SOUTHERN REGION

Dr. D. Benson	NC
Dr. K. Braman	GA
Dr. Y. Chen	LA
Dr. M. Czarnota	GA

SOUTHERN REGION (CONTINUED)

Dr. J. Derr	VA
Dr. D. Ferrin	LA
Dr. W. Foshee	AL
Dr. A. Fulcher	KY
Dr. C. Gilliam	AL
Dr. M. Gu	MS
Dr. C. Hesselein	AL
Dr. G. 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. D. Potter	KY
Dr. M. Reddy	AL
Dr. P. Schultz	VA
Dr. J. Strandberg	FL
Dr. B. Trader	MS
Dr. T. Whitewell	SC

WESTERN REGION

Dr. A. Chase	CA
Dr. G. Chastagner	OR
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. D. Walsh	WA

ATTACHMENT 2 (Continued)

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. S. Naranjo	AZ
Dr. M. Reding	OH
Mr. P. Wade	SC

2007 Biopesticide Researchers

NORTHCENTRAL REGION

D. A. Schilder	MI
Dr. M. Whalon	MI

NORTHEAST REGION

Dr. S. Alm	RI
Dr. G. Brust	MD
Dr. F. Caruso	MA
Dr. S. Costa	VT
Dr. G. Dively	MD
Dr. V. Fournier	NJ
Dr. N. Lalancette	NJ
Dr. C. Rodriguez-Saona	NJ
Dr. M. Tuttle McGrath	NY

SOUTHERN REGION

Dr. L. Brandenberger	OK
Dr. T. Brenneman	GA
Dr. C. Bogran	TX
Dr. J. Crane	FL
Dr. Y. Chen	LA
Dr. H. Fadamiro	AL
Dr. G. Holmes	NC
Dr. J. Kuehny	LA
Dr. T. Kuhar	VA
Dr. R. Munagala	AL
Dr. B. Ownley	TN
Dr. R. Richardson	NC
Dr. P. Roberts	FL
Dr. T. Sutton	NC

WESTERN REGION

Dr. M. Burrows	MT
Dr. D. Gubler	CA
Dr. M. Matheron	AZ

USDA-ARS

Dr. J. Cummings
Dr. L. Lacey

ATTACHMENT 3

2007 Food Use Research Projects – Residue Trials

CHEMICAL	CROP	PR #	CHEMICAL	CROP	PR #
• 1,3-Dichloro-propene	Pineapple	9752	• Hexythiazox	Tomato (GH)	8137
• Acequinocyl	Caneberry	9273	• Imazosulfuron	Potato	9645
• Acequinocyl	Cantaloupe	8607	• Imidacloprid	Oyster	9938
• Acequinocyl	Cucumber (GH & Field)	8606	• Iprodione	Almond	9811
• Anthraquinone	Corn, Field	9613	• Kasugamycin	Apple	9773
• Buprofezin	Cantaloupe	9226	• Kasugamycin	Pepper (GH & Field)	9802
• Buprofezin	Cucumber (GH & Field)	6143	• Kasugamycin	Tomato (GH & Field)	9797
• Buprofezin	Squash (Summer)	9278	• Kasugamycin	Walnut	9772
• Chlorantraniliprole	Blueberry	9810	• Linuron	Coriander (Fresh & Seed)	A1625
• Chlorantraniliprole	Corn (Field & Sweet)	9732	• Linuron	Dill	A1432
• Chlorantraniliprole	Tomato (GH)	9477	• Metaldehyde	Celery	9421
• Clomazone	Pea (Southern)	8934	• Metaldehyde	Corn (Field)	9655
• Clopyralid	Apple	3623	• Metconazole	Potato	9861
• Clothianidin	Onion, Dry Bulb	9653	• Methoxyfenozide	Carrot	9884
• CMNP	Orange	9036	• Methoxyfenozide	Radish	9895
• Cyazofamid	Bean (Lima)	9532	• Novaluron	Bean (Dry)	9781
• Cyazofamid	Bean (Snap)	9094	• Novaluron	Corn (Sweet)	9838
• Cyazofamid	Hops	9823	• Novaluron	Strawberry	9782
• Diflubenzuron	Lemon	9774	• Novaluron	Swiss Chard	9745
• Diflubenzuron	Peanut	9891	• Oxyfluorfen	Coffee	9822
• Dimethenamid-P	Cabbage	8565	• Oxyfluorfen	Onion (Green)	3574
• Dinotefuran	Onion (Dry Bulb)	8645	• Paraquat	Okra	B1913
• Dinotefuran	Peach	9548	• Pendimethalin	Cantaloupe	9397
• Diquat	Watercress	9737	• Pendimethalin	Lettuce (Leaf)	9061
• Ethofumesate	Small Grains	9882	• Prometryn	Bean (Snap)	8978
• Etoxazole	Pepper (Bell & Non-Bell)	9234	• Propiconazole	Stone Fruits (Post Harvest)	9787
• Etoxazole	Squash (Summer)	9205	• Pyrimethanil	Ginseng	9707
• Famoxadone + Cymoxanil	Bean (Lima)	7262	• Pyriproxyfen	Basil (GH)	8909
• Fenamidone	Ginseng	9800	• Rimsulfuron	Caneberry (Raspberry)	9661
• Fenhexamid	Kiwifruit (Preharvest)	9741	• Sethoxydim	Grasses	A4873
• Fenhexamid	Onion	7149	• Sethoxydim	Safflower	A2531
• Flonicamid	Canola	9783	• Spirodiclofen	Guava	9329
• Fluazinam	Cantaloupe	7097	• Spirodiclofen	Lychee	9327
• Fluazinam	Pepper (Bell & Non-Bell)	9556	• Spirodiclofen	Sugar Apple	9330
• Flumioxazin	Artichoke	9815	• Spiromesifen	Grasses	9842
• Fomesafen	Cantaloupe	9536	• Spiromesifen	Mint	9753
• Fomesafen	Pea (Succulent)	8083	• Spiromesifen	Pea (Dry)	9369
• Glufosinate	Peach	8720	• Sulfentrazone	Rhubarb	9408
• Glyphosate	Carrot	A1243	• Thifensulfuron + Rimsulfuron	Chicory (Roots)	9417
• Glyphosate	Sweetpotato	9063	• Thifensulfuron-Methyl	Tomato	9342
			• Thiophanate Methyl	Bean (Edible Podded)	9709
			• V-10118	Cherry	9174
			• V-10118	Greens (Mustard)	9184
			• V-10118	Lettuce (Head & Leaf)	9180

ATTACHMENT 4

New Tolerances and Approvals – 2007

TOLERANCES ESTABLISHED IN 2007 FROM IR-4 PETITIONS Totals for 2007: 203 Permanent Tolerances, 5 Exemptions from Tolerance That Support 647 Total New Uses

January: Rules - Federal Register (F.R.) – Revised Tolerance

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Spiromesifin	I	Vegetable, fruiting, group 8	08998	JAN 24 2007	9	1
Totals					9	1
*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide						

February: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Sethoxydim	H	Buckwheat	01348	FEB 28 2007	1	2
		Okra	02339	FEB 28 2007	1	1
		Borage	07208	FEB 28 2007	1	2
		Dill	07297	FEB 28 2007	1	1
		Turnip greens	06289	FEB 28 2007	1	1
		Vegetable, root and tuber, group 1	02048	FEB 28 2007	17	2
		(includes Radish tops)	02468 02469 02470 04128 05378			
(20 previously established uses are included in this new tolerance)						
Totals					22	9
*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide						

March: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Tribenuron-methyl	H	Sunflower	08138	MAR 14 2007	1	1
Spinosad	I	Hop	09064	MAR 21 2007	1	1
		Amaranth			1	1
Totals					3	3
*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide						

April: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Diphenylamine	F	Pear	06879	APR 04 2007	1	1
Totals					1	1
*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide						

ATTACHMENT 4 (Continued)

May: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
<i>Aspergillus flavus</i> AF36	F	Pistachio	0327B	MAY 14 2007	1	E
Clethodim	H	Leafy greens subgroup 4A	05221	MAY 09 2007	22	1
			05223			
			06136			
			06772			
			07694			
		Vegetable, legume, group 6 except soybean	05202	MAY 09 2007	41	1
			05204			
			05205			
		Herb subgroup 19A	05206	MAY 09 2007	40	1
			07559			
Asparagus	05399	MAY 09 2007	1	1		
Flax	05427	MAY 09 2007	1	1		
Hop	07558	MAY 09 2007	1	1		
Safflower	08086	MAY 09 2007	1	1		
Sesame	08591	MAY 09 2007	1	2		
Famoxadone	F	Caneberry subgroup 13A	07756	MAY 09 2007	1	1
		Grape	08766	MAY 23 2007	4	1
		Hop	08774	MAY 23 2007	1	1
Phenmedipham	H	Spinach	07796	MAY 23 2007	1	1
		Sugar Beet	---	MAY 23 2007	1	1
Coumaphos	I	Honey	07371	MAY 23 2007	1	2
Flufenacet	H	Corn, sweet	07682	MAY 9 2007	1	3
Foramsulfuron	H	Corn, sweet	08970	MAY 9 2007	2	E
		Corn, pop	08904			
Totals					121	19
*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscide, P=plant growth regulator, R=rodenticide, E=exempt from the requirement of a tolerance.						

June: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Diuron	H	Cactus, prickly pear	02699	JUN 13 2007	1	1
		Mint	06952	JUN 13 2007	2	2
Lactofen	H	Vegetable, fruiting, group 8	04163	JUN 20 2007	9	1
			04400			
		Okra	06430	JUN 20 2007	1	1
Imidacloprid	I	Caneberry subgroup 13A	07984	JUN 20 2007	4	1
			08257			
		Raspberry, wild			1	1
		Peanut	06587	JUN 20 2007	1	3
		Kava	08455	JUN 20 2007	1	2
		Millet, pearl	09436	JUN 20 2007	1	4
		Millet, proso	08134	JUN 20 2007	1	4
Oat	06397	JUN 20 2007	1	1		

ATTACHMENT 4 (Continued)

Thiamethoxam	I	Caneberry subgroup 13A	08039	JUN 22 2007	4	1
		Artichoke, globe	08282	JUN 22 2007	1	1
		Hop	08451	JUN 22 2007	1	1
		Barley (increase 3 tolerances)	07746	JUN 22 2007	0	0
Tobacco Mild Green Mosaic Virus	H	Grass and hay	0364B	JUN 27 2007	3	E
Buprofezin	I	Fruit, stone, group 12 (except peach and apricot)	07250	JUN 27 2007	9	1
			07303			
			07325			
			07519			
		Apricot	7746	JUN 27 2007	1	1
		Grape (revised for new use pattern)				
		Mango	06976	JUN 27 2007	1	1
		Papaya	07024		1	1
		Black sapote			1	1
		Canistel			1	1
Mamey sapote		1	1			
Sapodilla		1	1			
Star apple		1	1			
Totals					48	32

*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide
E=exempt from the requirement of a tolerance.

July: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Indoxacarb	I	Vegetable, tuberous and corm, subgroup 1C	08611	JUL 11 2007	16	1
		Vegetable, leafy, except Brassica, group 4	08341 09087 09836	JUL 11 2007	27	1
		Vegetable, Brassica, leafy, group 5 Turnip greens	06986	JUL 11 2007	8	1 1
		Vegetable, cucurbit, group 9	06985 08339 08340	JUL 11 2007	14	1
		Fruit, pome, except pear, group 11 Pear, Oriental	08740	JUL 11 2007	6 1	1 1
		Fruit, stone, group 12	07228 07234 07235	JUL 11 2007	11	1
		Pea, southern	06984	JUL 11 2007	1	1
		Okra	08633	JUL 11 2007	1	1
		Cranberry	08127	JUL 11 2007	1	1
		Mint	08418	JUL 11 2007	1	2
Linuron	H	Celeriac Rhubarb	03557 06591	JUL 11 2007	2	2
Cymoxanil	F	Caneberry subgroup 13A	08766	JUL 11 2007	4	1
		Grape	08774	JUL 11 2007	1	1
		Hop	07796	JUL 11 2007	1	1
Glufosinate-ammonium	H	Pistachio	08665	JUL 25 2007	1	1
Totals					96	19

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

ATTACHMENT 4 (Continued)

August: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Dimethenamid	H	Grasses grown for seed	---	AUG 08 2007	3	1
Lambda-cyhalothrin	I	Barley	06400	AUG 15 2007	1	1
		Buckwheat			1	1
		Oat			1	1
		Rye			1	1
		Wild rice	08850	AUG 15 2007	1	1
		Pistachio	09744	AUG 15 2007	1	1
Propylene Oxide		Fig	7887	AUG 29 2007	1	1
		Prune	7786		1	1
		Raisin	7897		1	1
Cucumber Mosaic Virus-weak strain	F	Cucurbits	0374B	AUG 08 2007	14	E
Pyriproxyfen	I	Vegetable, root and tuber, group 1		AUG 22 2007	37	5
		Vegetable, bulb, group 3, except Onion, dry bulb	08022	AUG 22 2007	8	1
		Caneberry subgroup 13A		AUG 22 2007	4	1
		Grain, cereal, group 15		AUG 22 2007	14	2
		Grain, cereal, forage, fodder and straw, group 16		AUG 22 2007	0	1
		Animal feed, nongrass, group 18, forage, hay, and seed		AUG 22 2007	11	3
		Banana and Plantain		AUG 22 2007	2	1
		Cacao bean		AUG 22 2007	1	1
		Canola, seed		AUG 22 2007	1	1
		Coffee		AUG 22 2007	1	2
		Cranberry		AUG 22 2007	1	1
		Date		AUG 22 2007	1	1
		Pawpaw		AUG 22 2007	1	1
		Peanut		AUG 22 2007	1	1
		Pineapple		AUG 22 2007	1	2
		Pomegranate	08974	AUG 22 2007	1	1
		Safflower, seed		AUG 22 2007	1	1
		Sesame, seed		AUG 22 2007	1	1
		Sugarcane		AUG 22 2007	1	1
Tea		AUG 22 2007	1	1		
Totals					112	36

*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide
E=exempt from the requirement of a tolerance.

ATTACHMENT 4 (Continued)

September: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Desmedipham	H	Garden beet	00337	SEP 19 2007	1	2
		Spinach	01922	SEP 19 2007	1	1
Pendimethalin	H	Artichoke, globe	06623	SEP 19 2007	1	1
		Asparagus	06660	SEP 19 2007	1	1
		Brassica, head and stem, subgroup 5A	06387	SEP 19 2007	8	1
			06504			
			06505			
			06506			
06507						
06773						
Grape	05740	SEP 19 2007	1	1		
Totals					13	7

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

October: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*		Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Bifenthrin	I	Vegetable, root, subgroup 1B, except sugar beet	07089	OCT 24 2007	18	4
			07556			
			08304			
		Soybean	08851	OCT 24 2007	1	3
		Peanut	05175	OCT 24 2007	1	1
		08584				
Pistachio	09219	OCT 24 2007	1	1		
Mayhaw	07513	OCT 24 2007	1	1		
Fenamidone	F	Vegetable, leafy, except Brassica, group 4	08894	OCT 24 2007	29	1
			09461			
		Brassica, head and stem, subgroup 5A	07976	OCT 24 2007	11	1
		07977				
		Brassica, leafy greens, subgroup 5B	07845	OCT 24 2007	8	1
		07963				
		Vegetable, fruiting, group 8	07623	OCT 24 2007	9	2
		Carrot	08524	OCT 24 2007	1	1
Strawberry	-	OCT 24 2007	1	1		
Sunflower	07999	OCT 24 2007	1	1		
Cotton	-	OCT 24 2007	1	2		
Fluazinam	F	Bushberry subgroup 13B	06129	OCT 24 2007	5	1
		Aronia berry			1	1
		Buffalo currant			1	1
		Chilean guava			1	1
		European barberry			1	1
		Highbush cranberry			1	1
		Edible honeybush			1	1
		Jostaberry			1	1
		Juneberry			1	1
		Lingonberry			1	1
		Native currant			1	1
		Salal			1	1
		Sea buckthorn			1	1

ATTACHMENT 4 (Continued)

Fluazinam	F	Vegetable, legume, edible podded, subgroup 6A, except pea	07602	OCT 24 2007	12	1
		Pea and bean, succulent shelled, subgroup 6B, except pea	08798	OCT 24 2007	5	1
		Pea and bean, dry shelled, except soybean, subgroup 6C, except pea	06369	OCT 24 2007	15	1
		Vegetable, Brassica leafy, group 5	08795 08796 08797 09237	OCT 24 2007	19	1
		Turnip greens			1	1
		Ginseng	08791	OCT 24 2007	1	1
Totals					155	41

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

November: Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*	Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Oxytetracycline	F Apple	04943	NOV 07 2007	1	1
<i>Aspergillus flavus</i> AF36	F Cotton	052B	NOV 26 2007	1	E
Isoxadifen-ethyl	HS Corn, sweet Corn, pop Corn, field	08970	NOV 14 2007	1	3
		08904		1	3
				1	2
Totals				4	9

*F=fungicide, H=herbicide, I=insecticide/acaricide, HS=herbicide safener
E=exempt from the requirement of a tolerance.

December; Rules - Federal Register (F.R.) – Permanent Tolerances

Pest Control Agent / Type*	Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
Spinosad	I Spice subgroup 19B except black pepper Pineapple	07361	DEC 05 2007	30	1
		08693	DEC 05 2007	1	2
Ethalfuralin	H Dill Mustard Potato Rapeseed (replaces canola tolerance)	05320	DEC 05 2007	1	2
		---		1	1
		06567	DEC 05 2007	1	1
		08516	DEC 05 2007	2	1
Etoxazole	I Melon subgroup 9A Cherry Hop	07945 09018	DEC 26 2007	3	1
		09044	DEC 26 2007	1	1
		08873	DEC 26 2007	1	1
Fluroxypyr	H Fruit, pome, group 11 Millet	07706 07707	DEC 28 2007	7	1
		09337	DEC 28 2007	1	4
Dimethenamid	H Radish Rutabaga Turnip (roots, tops, greens) Pumpkin Squash, winter Hop	07695	DEC 28 2007	1	2
		07697	DEC 28 2007	1	1
		07696 09813		3	3
		07909	DEC 28 2007	1	1
		06596		1	1
		08705	DEC 28 2007	1	1
Totals				57	25

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

ATTACHMENT 5**Registration Packages Submitted in 2007**

Product	Crop	PR Number	TYPE	Registration Type
Aspergillus flavus AF36	Corn	378B	Fungicide	EUP
Bifenthrin	Blueberry	8736	Insecticide	New Registration
	Celery	4945	Insecticide	New Registration
Boscalid (+Pyraclostrobin)	Tomato (GH)	8374	Fungicide	Label Change
Buprofezin	Celery	9910	Insecticide	New Registration
	Okra	7408	Insecticide	New Registration
	Olive	9015	Insecticide	New Registration
	Pepper	8848	Insecticide	New Registration
	Spinach	6978	Insecticide	New Registration
	Strawberry	8737	Insecticide	New Registration
	Tomato	8964	Insecticide	New Registration
Chlorothalonil	Balsam Pear	3860	Fungicide	New Registration
	Cucurbits	3950	Fungicide	New Registration
	Eggplant	1154	Fungicide	New Registration
	Ginseng	988	Fungicide	New Registration
	Gourds	3861	Fungicide	New Registration
	Horseradish	2392	Fungicide	New Registration
	Kohlrabi	3169	Fungicide	New Registration
	Lentil	5422	Fungicide	New Registration
	Lupin	5289	Fungicide	New Registration
	Okra	353	Fungicide	New Registration
	Pepper (non-bell)	571	Fungicide	New Registration
	Pepper, bell	32	Fungicide	New Registration
	Persimmon	5388	Fungicide	New Registration
	Rhubarb	5410	Fungicide	New Registration
	Yam	1414	Fungicide	New Registration
CPPU	Blueberry	8313	PGR	New Registration
Cyazofamid	Carrot	8522	Fungicide	New Registration
Cymoxanil (+ Famoxadone)	Celery	8758	Fungicide	New Registration
	Cilantro		Fungicide	New Registration
	Lettuce	8499	Fungicide	New Registration
	Onion	8303	Fungicide	New Registration
	Spinach	8308	Fungicide	New Registration
Cyprodinil	Kiwifruit	8972	Fungicide	New Registration
Cyprodinil (+ Fludioxonil)	Avocado	7338	Fungicide	New Registration

ATTACHMENT 5 (Continued)

Product	Crop	PR Number	TYPE	Registration Type
Cyprodinil (+ Fludioxonil)				
	Cucumber	7655	Fungicide	New Registration
	Garlic	9386	Fungicide	New Registration
	Herbs	7130	Fungicide	New Registration
	Lemon	8297	Fungicide	New Registration
	Lime	6981	Fungicide	New Registration
	Mamey Sapote	7129	Fungicide	New Registration
	Mango	7128	Fungicide	New Registration
	Melon	7124	Fungicide	New Registration
	Papaya	6982	Fungicide	New Registration
	Parsley	7130	Fungicide	New Registration
	Radish	9019	Fungicide	New Registration
	Squash	7656	Fungicide	New Registration
	Tomato	8124	Fungicide	New Registration
	Turnip	8933	Fungicide	New Registration
Ethoprop				
	Hops	2734	Insecticide	New Registration
Famoxadone (+ Cymoxanil)				
	Celery	8758	Fungicide	New Registration
	Cilantro		Fungicide	New Registration
	Lettuce	8499	Fungicide	New Registration
	Onion	8303	Fungicide	New Registration
	Spinach	8308	Fungicide	New Registration
Fenbuconazole				
	Pepper	6372	Fungicide	New Registration
Fenhexamid				
	Asparagus	8692	Fungicide	New Registration
Fenpropathrin				
	Caneberry	8735	Insecticide	New Registration
	Olive	9374	Insecticide	New Registration
Fludioxonil				
	Sweetpotato	8402	Fungicide	New Registration
Fludioxonil (+ Cyprodinil)				
	Avocado	7338	Fungicide	New Registration
	Cucumber	7655	Fungicide	New Registration
	Garlic	9386	Fungicide	New Registration
	Herbs	7130	Fungicide	New Registration
	Kiwifruit	8972	Fungicide	New Registration
	Lemon	8297	Fungicide	New Registration
	Lime	6981	Fungicide	New Registration
	Mamey Sapote	7129	Fungicide	New Registration
	Mango	7128	Fungicide	New Registration
	Melon	7124	Fungicide	New Registration
	Papaya	6982	Fungicide	New Registration
	Parsley	7130	Fungicide	New Registration
	Radish	9019	Fungicide	New Registration
	Squash	7656	Fungicide	New Registration
	Tomato	8124	Fungicide	New Registration
	Turnip	8933	Fungicide	New Registration

ATTACHMENT 5 (Continued)

Product	Crop	PR Number	TYPE	Registration Type
Gamma cyhalothrin	Okra	9851	Insecticide	New Registration
	Pistachio	9904	Insecticide	New Registration
Glufosinate	Pistachio	8665	Herbicide	New Registration
Hexythiazox	Potato	8829	Insecticide	New Registration
Imidacloprid	Lychee	6676	Insecticide	New Registration
MCPA	Pea	4999	Herbicide	New Registration
MCPB	Mint	4757	Herbicide	New Registration
Methoxyfenozide	Avocado	7060	Insecticide	New Registration
	Guava	7064	Insecticide	New Registration
	Leek	8392	Insecticide	New Registration
	Onion, green	9067	Insecticide	New Registration
	Passion Fruit	7067	Insecticide	New Registration
Novaluron	Sugarcane	9903	Insecticide	New Registration
	Tomato	8419	Insecticide	New Registration
Oxyfluorfen	Banana	6697	Herbicide	Label Change
	Cantaloupe	3710	Herbicide	New Registration
	Clover	2738	Herbicide	New Registration
	Cucumber	3711	Herbicide	New Registration
	Eggplant	4134	Herbicide	New Registration
	Nonbell Pepper	2125	Herbicide	New Registration
	Pejibaye	6606	Herbicide	New Registration
	Pepper	4133	Herbicide	New Registration
	Rhubarb	6592	Herbicide	New Registration
	Squash, summer	3712	Herbicide	New Registration
Plum Pox Resistant	Plum	0377B	PIP Virus Resistance	New Registration
Polyoxin D	Ginseng	9020	Fungicide	New Registration
Pronamide	Cranberry	3152	Herbicide	New Registration
Propiconazole	Beet (garden)	6352	Fungicide	New Registration
	Celeriac	6375	Fungicide	New Registration
	Parsley	6351	Fungicide	New Registration

ATTACHMENT 5 (Continued)

Product	Crop	PR Number	TYPE	Registration Type
Propiconazole	Pineapple	6585	Fungicide	New Registration
	Turnip (Roots + Tops)	6237	Fungicide	New Registration
Pyraclostrobin	Barley	9089	Fungicide	New Registration
Pyraclostrobin (+Boscalid)	Tomato (GH)	8374	Fungicide	Label Change
Sethoxydim	Gold of Pleasure	9923	Herbicide	New Registration
Spirodiclofen	Hops	8968	Insecticide	New Registration
Spiromesifen	Bean (all)	9410	Insecticide	New Registration
Sulfentrazone	Brassicas	9355	Herbicide	New Registration
	Broccoli	7724	Herbicide	New Registration
	Cantaloup	8445	Herbicide	New Registration
	Cauliflower	8064	Herbicide	New Registration
	Collard	7912	Herbicide	New Registration
	Flax	7584	Herbicide	New Registration
	Kale	7914	Herbicide	New Registration
	Muskmelon	7911	Herbicide	New Registration
	Mustard (greens)	7581	Herbicide	New Registration
	Pea, succulent	6520	Herbicide	New Registration
	Pepper	8048	Herbicide	New Registration
	Pepper, non bell	9025	Herbicide	New Registration
	Potato	7723	Herbicide	New Registration
	Strawberry	7044	Herbicide	New Registration
	Tomato	7957	Herbicide	New Registration
	Watermelon	7917	Herbicide	New Registration
Watermelon	8049	Herbicide	New Registration	
Tetraconazole	Grape	9663	Fungicide	New Registration
Thiobencarb	Wild Rice	9475	Herbicide	New Registration
Triflumizole	Broccoli	9319	Fungicide	New Registration
	Cabbage	9143	Fungicide	New Registration
	Cabbage, Chinese (Napa)	9586	Fungicide	New Registration
	Cantaloup	9343	Fungicide	Label Amendment
	Cantaloup	9343	Fungicide	Label Change
	Dandelion	8868	Fungicide	New Registration
	Hop 8967	Fungicide	New Registration	
	Kohlrabi	8869	Fungicide	New Registration
	Lettuce	8993	Fungicide	New Registration
	Mustard Greens	8865	Fungicide	New Registration

ATTACHMENT 5 (Continued)

Product	Crop	PR Number	TYPE	Registration Type
Triflumizole	Papaya	9332	Fungicide	New Registration
	Parsley	8863	Fungicide	New Registration
	Pineapple	8830	Fungicide	New Registration
	Swiss Chard	8867	Fungicide	New Registration
	Turnip Greens	8865	Fungicide	New Registration
Uniconazole	Pepper (bell)	4595	PGR	New Registration
	Tomato	4597	PGR	New Registration
Zeta-cypermethrin	Borage Seed	10073	Insecticide	New Registration
Zinc Phosphide	Bean	6536	Rodenticide	Conditional
	Timothy grass	6055	Rodenticide	Conditional
Ziram	Grape	4116	Fungicide	Label Change

ATTACHMENT 6**Pending Submissions**

Product	Crop	PR#
• 2,4-DB	Lentil	8992
• Acequinocyl	Bean, snap	8673
• Acequinocyl	Bean, succulent shelled	8674
• Acequinocyl	Cherry	9629
• Acequinocyl	Hops	9370
• Acequinocyl	Okra	9275
• Acequinocyl	Pepper	8605
• Acequinocyl	Tomato	8356
• Acetamiprid	Clover seed	9600
• Acetamiprid	Grape	9057
• Acibenzolar	Onion	9090
• AVG	Cherry	8052
• AVG	Peach	8053
• AVG	Plum	8054
• Azoxystrobin	Barley	9088
• Bifenazate	Sugar Apple	8927
• Bifenthrin	Grass seed	9476
• Boscalid	Artichoke	9689
(+ Pyraclostrobin)	Persimmon	9093
• Bromoxynil	Leek	6058
• Bromoxynil	Millet	9338
• Buprofezin	Coffee	8828
• Carfentrazone	Onion (dry bulb)	9034
• Chlorantraniliprole	Caneberry	9344
• Chlorantraniliprole	Mint	9642
• Chlorfenapyr	GH Transplants	8746
• Chlorothalonil	Strawberry	0577
• Clethodim	Artichoke	9013
• Clethodim	Blueberry	5234
• Clethodim	Caneberry	6060
• Clethodim	Grass	8836
• Clethodim	Grass fescue	6836
• Clethodim	Peach	6875
• Clethodim	Safflower	8591
• Clomazone	Broccoli	A3569
• Clomazone	Rhubarb	8724
• Clopyralid	Blueberry	5433
• Clopyralid	Blueberry	9602
• Clopyralid	Strawberry	8132
• Clopyralid	SwissChard	5435
• Clothianidin	Cranberry	9399
• Clothianidin	Mustard Greens	9070
• Clothianidin	Peach	8544
• Clothianidin	Peach	A8544
• Cyazofamid	Broccoli	9717
• Cyazofamid	Cabbage	9082
• Cyazofamid	Grape	8773
• Cyazofamid	Mustard Greens	9083
• Cyazofamid	Peppers	8509
• Cyazofamid	Spinach	9265
• Cyazofamid	Transplants	9385
• Cyfluthrin	Flax	9026

Product	Crop	PR#
• Cyhalofop	Wildrice	8951
• Cymoxanil	Bean, lima	7262
(+Famoxadone)		
• Cymoxanil +	Mustard Greens	8759
(+Famoxadone)		
• Cyprodinil	Pepper	9567
(+ Fludioxonil)		
• Cyprodinil	Pepper	9140
(+ Fludioxonil)		
• Cyromazine	Bean (snap)	B3909
• DCPA	Carrot	8332
• Difenconazole	Almond	9620
• Dimethenamid	Bean, snap	8069
• Dimethenamid	Broccoli	8563
• Dinotefuran	Collard	8629
• Dinotefuran	Kale	8628
• Dinotefuran	Mustard Greens	8626
• Dinotefuran	Turnip Greens	8627
• Dinotefuran	Watercress	9514
• Diquat	Sesame	9695
• Diuron	Cherry	2399
• Diuron	Plum	3071
• Emamectin	Cucumber	6987
• Ethephon	Pear	8734
• Ethephon	Sweetpotato	8814
• Ethephon	Tomato	0250
• Ethofumesate	Cilantro	7704
• Etoxazole	Avocado	9738
• Etoxazole	Caneberry	8096
• Etoxazole	Cucumber	9208
• Etoxazole	Mint	A8816
• Etoxazole	Mint	8816
• Etoxazole	Peach	9045
• Etoxazole	Plum	9046
• Etoxazole	Tomato (GH)	9109
• Famoxadone	Bean, lima	7262
(+Cymoxanil)		
• Famoxadone	Mustard Greens	8759
(+Cymoxanil)		
• Fenamidone	Cilantro	
• Fenamidone	Grape	8164
• Fenamidone	Okra	
• Fenamidone	Root Vegges	
• Fenamidone	Turnipgreens	7975
• Fenpropathrin	Tropical Fruit	7864
• Fenpyroximate	Cantaloupe	9022
• Fenpyroximate	Okra	9284
• Fenpyroximate	Pepper	8617
• Fenpyroximate	Tomato	9027
• Fluazinam	Carrot	7094
• Fluazinam	Lettuce	6892
• Fluazinam	Onion	7092
• Flucarbazone	Grasses	9000

ATTACHMENT 6 (Continued)

Product	Crop	PR#
• Fludioxonil	Ginseng	9349
• Fludioxonil	Tropical fruit	9912
• Fludioxonil	Pepper	9140
+ (Cyprodinil)		
• Fludioxonil	Pepper	9567
+ (Cyprodinil)		
• Flumioxazin	Cabbage	9519
• Flumioxazin	Celery	8646
• Flumioxazin	Cucumber	8317
• Flumioxazin	Hops	9371
• Flumioxazin	Peach	9346
• Flumioxazin	Prickly pear	8647
• Flumioxazin	Squash	8318
• Fluopicolide	Mustard Greens	10047
• Fluroxypyr	Mint	8569
• Flutolanil	Broccoli	9263
• Flutolanil	Cabbage	8840
• Flutolanil	Ginseng	9392
• Flutolanil	Mustard Greens	8760
• Fomesafen	Pepper	9677
• Fomesafen	Potato	8084
• Fomesafen	Squash	9538
• Fomesafen	Tomato	8948
• Formetanate	Onion, bulb	9614
Hydrochloride		
• Glufosinate	Corn, sweet	6953
• Glufosinate	Corn, sweet	6515
• Glyphosate	Flax	6156
• Glyphosate	Flax	6115
• Glyphosate	Horseradish	A6704
• Glyphosate	Mustard Seed	8672
• Glyphosate	Strawberry	1409
• Glyphosate	Strawberry	A1409
• Halosulfuron	Apple	7769
• Halosulfuron	Bean, dry	8976
• Halosulfuron	Blueberry	9243
• Halosulfuron	Okra	8838
• Halosulfuron	Pea Succulent	7286
• Halosulfuron	Potato	7281
• Halosulfuron	Rhubarb	9407
• Imazalil	Mushroom	9494
• Imidacloprid	Papaya	9039
• Imidacloprid	Sweetpotato	9331
• Indoxacarb	Bean, dry	9669
• Indoxacarb	Bean, snap	8574
• Indoxacarb	Beet	8870
• Indoxacarb	Blueberry	7038
• Kasugamycin	Pear	9619
• Lambda-Cyhalothrin	Asparagus	8742
• Lambda-Cyhalothrin	Carrot	9390
• Lambda-Cyhalothrin	Okra	9852
• Lambda-Cyhalothrin	Radish	9381
• Lambda-Cyhalothrin	Spinach	9244
• Linuron	Celery	3557
• Linuron	Parsley	3035
• Linuron	Pea, dry	9651
• Mancozeb	Blueberry	8912

Product	Crop	PR#
• Mancozeb	Guava	9497
• Mefenoxam	Caneberry	B1169
• Mefenoxam	Snapbean	A8371
• Mefenoxam	Spinach	8431
• Metaldehyde	Celery	9421
• Metaldehyde	Corn	9655
• Metaldehyde	Grasses	6267
• Metaldehyde	Mint	9611
• Metaldehyde	Taro	7574
• Metconazole	Blueberry	9501
• Methiocarb	Artichoke	A2007
• Methoxyfenozide	Citrus	9367
• Metribuzin	Pea (succulent)	6388
• Metribuzin	Tanier	6459
• NAA	Avocado	9660
• Napropamide	Mint	3441
• Novaluron	Bean, snap	8128
• Novaluron	Blueberry	9052
• Novaluron	Cantaloupe	8990
• Novaluron	Cherry	9347
• Novaluron	Cucumber	8988
• Novaluron	Mustard greens	8420
• Novaluron	Okra	8634
• Novaluron	Peach	9047
• Novaluron	Pepper	8985
• Novaluron	Plum	9048
• Novaluron	Squash	8989
• Novaluron	Turnip Greens	8422
• Oxamyl	Canberry	9612
• Oxyfluorfen	Broccoli	8806
• Oxyfluorfen	Cabbage	5255
• Oxyfluorfen	Caneberry	3616
• Oxyfluorfen	Citrus	7801
• Oxyfluorfen	TI Palm	7377
• Oxyfluorfen	Tomato	4132
• Pendimethalin	Bermuda Grass	8310
• Pendimethalin	grass, seed crop	4912
• Pendimethalin	Strawberry	7719
• Prometryn	Carrot	1682
• Prometryn	Celery	3567
• Prometryn	Cilantro	8996
• Prometryn	Okra	8575
• Prometryn	Parsley	3618/
		5160
• Propamocarb	Bean, lima	7263
• Propiconazole	Bean, Lima	9437
• Propiconazole	Bean, snap	9295
• Propiconazole	Citrus	9715
• Propiconazole	Mint	9419
• Pyrimethanil	Cherry	8701
• Pyrimethanil	Lemon	9085
• Pyrimethanil	Peach	8700
• Pyrimethanil	Plum	8702
• Pyriproxyfen	Celery	8975
• Pyriproxyfen	Kiwifruit	9359
• Quinoxifen	Artichoke	8817
• Quinoxifen	Peach	8462

ATTACHMENT 6 (Continued)

Product	Crop	PR#
• Quinoxifen	Plum	8463
• Quinoxifen	Pumpkin	8639
• Quinoxifen	Winter Squash	7653
• Rimsulfuron	Cantaloupe	7721
• S-metolachlor	Blueberry	2616
• S-metolachlor	Caneberry	4994/ 2617
• S-metolachlor	Caneberry	3497
• S-metolachlor	Cantaloupe	6178/ 6655
• S-metolachlor	Carrot	8981
• S-metolachlor	Chinese Mustard	3248
• S-metolachlor	Cucumber	6657
• S-metolachlor	Mustard Greens	2255
• S-metolachlor	Okra	9726
• S-metolachlor	Sesame	6516
• S-metolachlor	Spinach	9577
• S-metolachlor	Sweet sorghum	3840
• S-metolachlor	Tomato	9668
• S-metolachlor	Turnip Greens	2578
• S-metolachlor	Watermelon	6181
• Spinosad	Almond	8739
• Spinosad	Peach	9690
• Spirodiclofen	Blueberry	9679
• Spiromesifen	Pepper	9361
• Sulfentrazone	Blueberry	9260
• Sulfentrazone	Rhubarb	9408
• Sulfentrazone	Turnip	7915
• Sulfentrazone	Wheat	8722
• Terbacil	Peach	9017
• Terbacil	Strawberry	8959
• Thiamethoxam	Avocado	9607
• Thidiazuron	Grape	9160
• Thifensulfuron-methyl	Safflower	A3454
• Thifensulfuron-methyl - (+Rimsulfuron)	Chicory	9417
• Triflurosulfuron-methyl	Beet, garden	8043
• V-10118	Apple	9634
• V-10118	Cantaloup	9176
• V-10118	Cucumber	9718
• V-10118	Hops	9190
• V-10118	Squash	9177
• V-10118	Strawberry	9188
• Zeta-cypermethrin	Artichoke	9365
• Zeta-cypermethrin	Avocado	9396
• Zeta-cypermethrin	Barley	8812
• Zoxamide	Ginseng	9708

ATTACHMENT 7

2007 Ornamental Horticulture Program Research Activities - General

Crop	Number Products Tested
Angelonia (<i>Angelonia angustifolia</i>)	1
Apple & Crabapple (Non-Bearing) (<i>Malus</i> sp.)	25
Arborvitae (<i>Thuja</i> sp.)	5
Arrowwood (<i>Viburnum</i> sp.)	14
Ash (<i>Fraxinus</i> sp.)	3
Azalea (<i>Rhododendron</i> sp.)	14
Azalea, & Rhododendron (<i>Rhododendron</i> sp.)	29
Balsam (<i>Impatiens</i> sp.)	1
Barberry (<i>Berberis</i> sp.)	4
Begonia (<i>Begonia</i> sp.)	2
Birch (<i>Betula</i> sp.)	1
Blue Fescue (<i>Festuca ovina glauca</i>)	3
Boston Daisy (<i>Argyranthemum</i> sp.)	1
Boxwood (<i>Buxus</i> sp.)	4
Bridal-Wreath (<i>Spiraea</i> sp.)	5
Butterfly Bush (<i>Buddleia davidii</i>)	5
Calibrachoa (<i>Calibrachoa</i> sp.)	1
Camellia (<i>Camellia</i> sp.)	20
Carnation (<i>Dianthus caryophyllus</i>)	1
Cedar, Western Red (<i>Thuja plicata</i>)	3
Cherry (Non-Bearing) (<i>Prunus</i> sp.)	8
Cherry, Sargent (<i>Prunus sargentii</i>)	8
Chrysanthemum (<i>Dendranthema</i> sp.)	2
Coleus, Flamenettle (<i>Coleus</i> sp.)	7
Coneflower, Orange (<i>Rudbeckia fulgida speciosa</i>)	3
Cotoneaster (<i>Cotoneaster</i> sp.)	2
Crape Myrtle (<i>Lagerstroemia indica</i>)	5
Creeping Phlox, Moss Pink (<i>Phlox subulata</i>)	2
Dahlia (<i>Dahlia</i> sp.)	1
Daylily (<i>Hemerocallis</i> sp.)	3
Dogwood, Kousa (<i>Cornus kousa</i>)	4
English Ivy (<i>Hedera helix</i> L. ssp. <i>Helix</i>)	4
Euonymus (<i>Euonymus</i> sp.)	1
Feather Reed Grass (<i>Calamagrostis acutiflora</i>)	3
Fern, American Maidenhair (<i>Adiantum pedatum</i>)	1
Fern, Autumn (<i>Dryopteris erythrosora</i>)	2
Fern, Christmas (<i>Polystichum acrostichoides</i>)	2
Fern, Dixie Wood (<i>Dryopteris x australis</i>)	4
Fern, Japanese Holly (<i>Cyrtomium fortunei</i>)	4
Fern, Maidenhair (<i>Adiantum</i> sp.)	1
Fern, Marginal Wood (<i>Dryopteris marginalis</i>)	4
Fern, Tassel (<i>Polystichum polyblepharum</i>)	1
Fir, Douglas (<i>Pseudotsuga menziesii</i>)	12
Fir, Fraser (<i>Abies fraseri</i>)	8
Flag (<i>Iris</i> sp.)	3
Gaura (<i>Gaura lindheimeri</i>)	2
Geranium (<i>Pelargonium</i> sp.)	21
Hardy Mum (<i>Dendranthema x morifolium</i>)	3
Hemlock, Western (<i>Tsuga heterophylla</i>)	4
Holly (<i>Ilex</i> sp.)	9
Holly, Dwarf Yaupon (<i>Ilex vomitoria 'nana'</i>)	2

Crop	Number Products Tested
Honey Locust (<i>Gleditsia</i> sp.)	3
Hosta (<i>Hosta</i> sp.)	3
Hydrangea (<i>Hydrangea</i> sp.)	7
Hydrangea, Oakleaf (<i>Hydrangea quercifolia</i>)	8
Juniper (<i>Juniperus</i> sp.)	4
Lilac, Common (<i>Syringa vulgaris</i>)	1
Lilyturf, Creeping (<i>Liriope</i> sp.)	5
Linden, Shamrock (<i>Tilia cordata</i>)	3
Loropetalum (<i>Loropetalum</i> sp.)	5
Magnolia (<i>Magnolia</i> sp.)	5
Mallow, Rose Mallow (<i>Hibiscus</i> sp.)	8
Maple, Red (<i>Acer rubrum</i>)	6
Marigold (<i>Tagetes</i> sp.)	3
Mimosa Silk Tree (<i>Albizia julibrissin</i>)	4
Mondo Grass (<i>Ophiopogon</i> sp.)	2
Moss Rose (<i>Portulaca</i> sp.)	11
New Guinea Impatiens	10
Ornamental Cabbage & Kale (<i>Brassica</i> sp.)	5
Pansy (<i>Viola</i> sp.)	19
Pentas (<i>Pentas</i> sp.)	1
Periwinkle (<i>Vinca</i> sp.)	7
Petunia (<i>Petunia</i> sp.)	6
Phlox, Perennial (<i>Phlox paniculata</i>)	4
Pincushion Flower (<i>Scabiosa</i> sp.)	2
Pinks (<i>Dianthus</i> sp.)	4
Poinsettia (<i>Euphorbia pulcherrima</i>)	14
Purple Coneflower (<i>Echinacea</i> sp.)	5
Rhododendron (<i>Rhododendron</i> sp.)	18
Rose (<i>Rosa</i> sp.)	25
Rose-Of-Sharon, Althaea (<i>Hibiscus syriacus</i>)	1
Sage, Ramona (<i>Salvia sylvestris</i>)	4
Shrub Verbena (<i>Lantana</i> sp.)	8
Silver Grass (<i>Miscanthus</i> sp.)	3
Sourwood, Sorrel Tree (<i>Oxydendrum arboreum</i>)	2
Speedwell, Brooklime (<i>Veronica</i> sp.)	1
Spruce (<i>Picea</i> sp.)	4
Spruce, Norway (<i>Picea abies</i>)	1
Strawberry (Non-Bearing) (<i>Fragaria</i> sp.)	8
Tickseed (<i>Coreopsis</i> sp.)	2
Transvaal Daisy (<i>Gerbera</i> sp.)	31
Vervain (<i>Verbena</i> sp.)	1
Wax Myrtle (<i>Myrica cerifera</i>)	8
Willow (<i>Salix</i> sp.)	5
Wishbone Flower (<i>Torenia</i> sp.)	1
Yellowwood (<i>Cladrastis</i> sp.)	4
Yew (<i>Taxus media</i>)	8
Yew (<i>Taxus</i> sp.)	5
Zinnia (<i>Zinnia</i> sp.)	2

ATTACHMENT 8

2007 Ornamental Horticulture Program Summarized Data - General

Crop	Number Products Summarized
Abelia (Abelia sp.)	5
Adams-Needle (Yucca filamentosa)	1
African Daisy (Osteospermum sp.)	1
African Violet (Saintpaulia sp.)	1
Ageratum (Ageratum sp.)	1
Almond (Non-Bearing) (Prunus dulcis)	1
Andromeda (Pieris sp.)	3
Anise Tree (Illicium sp.)	3
Apple & Crabapple (Non-Bearing) (Malus sp.)	11
Arborvitae (Thuja sp.)	6
Arrowwood (Viburnum sp.)	7
Ash (Fraxinus sp.)	3
Ash, Green (Fraxinus pennsylvanica)	3
Ash, White (Fraxinus americana)	1
Aspen, Poplar (Populus sp.)	1
Aster, Bolton (Boltonia sp.)	1
Aster, New York (Aster novi-belgii)	1
Azalea, & Rhododendron (Rhododendron sp.)	51
Baby's Breath (Gypsophila paniculata)	3
Baby's-Breath (Gypsophila elegans)	5
Bald Cypress (Taxodium distichum)	3
Balloon Flower (Platycodon grandiflorus)	1
Balsam (Impatiens sp.)	1
Barberry (Berberis sp.)	5
Basket-Of-Gold (Aurinia saxatilis)	1
Bayberry (Myrica pensylvanica)	4
Bee Balm (Monarda didyma)	1
Begonia (Begonia sp.)	1
Bellflower (Campanula sp.)	1
Birch (Betula sp.)	1
Birch, River (Betula nigra)	1
Black Locust (Robinia pseudoacacia)	2
Black-Eyed Susan (Rudbeckia bicolor)	1
Blanket Flower (Gaillardia sp.)	2
Blazing-Star, Gayfeather (Liatris sp.)	1
Blue Fescue (Festuca ovina glauca)	3
Blue Lyme Grass (Leymus arenarius)	1
Blueberry (Non-Bearing) (Vaccinium sp.)	2
Boxwood (Buxus sp.)	6
Bridal-Wreath (Spiraea sp.)	7
Broom (Cytisus sp.)	1
Butterfly Bush (Buddleia davidii)	4
Camellia (Camellia sp.)	1
Candytuft (Iberis sp.)	3
Canna (Canna sp.)	2
Cape Jasmine, Radicans (Gardenia augusta 'Radicans')	4
Carolina Jessamine; Evening Trumpet Flower (Gelsemium sp.)	1

Crop	Number Products Summarized
Catnip (Nepeta cataria)	1
Cedar (Cedrus deodara)	2
Cedar, Red (Juniperus virginiana)	3
Cedar, Western Red (Thuja plicata)	1
Cherry (Non-Bearing) (Prunus sp.)	5
Chrysanthemum (Dendranthema sp.)	1
Cinquefoil (Potentilla sp.)	2
Cleyera (Cleyera japonica)	2
Coneflower (Rudbeckia sp.)	1
Coneflower, Orange (Rudbeckia fulgida speciosa)	5
Coral Bells, Alumroot (Heuchera sanguinea)	1
Cotoneaster (Cotoneaster sp.)	6
Craneberry-bush (Viburnum trilobum)	1
Crape Myrtle (Lagerstroemia indica)	7
Creeping Phlox, Moss Pink (Phlox subulata)	1
Cypress (Cupressus sp.)	1
Dahlia (Dahlia sp.)	1
Daphne (Daphne sp.)	1
Daylily (Hemerocallis sp.)	5
Deertongue (Dichanthelium clandestinum)	1
Delosperma sp. (Delosperma sp.)	3
Dogwood, Flowering (Cornus florida)	2
Dogwood, Red Osier (Cornus sericea)	1
Elm (Ulmus sp.)	1
English Ivy (Hedera helix L. ssp. Helix)	6
Euonymus (Euonymus sp.)	4
False cypress (Chamaecyparis obtusa)	3
False Spirea (Astilbe sp.)	1
Fern, Japanese Painted (Athyrium goeringianum)	1
Fernbush (Chamaebatiaria sp.)	3
Fir (Abies sp.)	5
Fir, Alpine (Abies lasiocarpa)	1
Fir, Balsam (Abies balsamea)	1
Fir, Douglas (Pseudotsuga menziesii)	7
Fir, Fraser (Abies fraseri)	5
Fir, Grand; Giant Fir (Abies grandis)	20
Flag (Iris sp.)	1
Fleabane (Erigeron sp.)	1
Flowering Tobacco (Nicotiana sp.)	1
Fountain Grass (Pennisetum setaceum)	2
Gaura (Gaura lindheimeri)	1
Geranium (Geranium magniflorum)	1
Giant Sequoia; Redwood (Sequoiadendron giganteum)	1
Globe Thistle (Echinops sp.)	1
Golden Bells (Forsythia sp.)	1
Hair Grass (Deschampsia sp.)	1

Crop	Number Products Summarized
Hakone Grass, Japanese Forest Grass (Hakonechloa sp.)	1
Hardy Ice Plant, Yellow Ice Plant (Delosperma nubigenum)	1
Heath (Erica sp.)	1
Heather (Calluna sp.)	1
Heavenly Bamboo (Nandina domestica)	4
Hellebore, Christmas rose, Lenten Rose (Helleborus niger)	4
Hemlock (Tsuga sp.)	4
Hemlock, Western (Tsuga heterophylla)	1
Hickory (Carya sp.)	1
Holly (Ilex sp.)	7
Holly, Dwarf Yaupon (Ilex vomitoria 'nana')	5
Honey Locust (Gleditsia sp.)	3
Honeysuckle (Lonicera sp.)	1
Hopflower Oregano (Origanum libanoticum)	1
Hosta (Hosta sp.)	6
Hydrangea (Hydrangea sp.)	5
Hydrangea, French (Hydrangea macrophylla)	2
Indian Grass (Hierochloa odorata)	1
Japanese Spurge (Pachysandra terminalis)	1
Jasmine, Asian (Trachelospermum asiaticum)	5
Jasmine, Cape, Common Gardenia (Gardenia sp.)	1
Jasmine, Jessamine (Jasminum sp.)	1
Jasmine, Star;Confederate (Trachelospermum jasminoides)	3
Juniper (Juniperus sp.)	8
Kentucky Coffee Tree (Gymnocladus dioica)	1
Lance Coreopsis (Coreopsis lanceolata)	1
Leadwort, Cape (Plumbago auriculata)	1
Lilac (Syringa sp.)	2
Lily (Lilium sp.)	1
Lily, Easter (Lilium longiflorum)	2
Lily, Plantain (Hosta fortunei)	1
Lilyturf, Big Blue;Giant (Liriope muscari)	4
Lilyturf, Creeping (Liriope sp.)	7
Lisianthus (Lisianthus sp.)	1
Loropetalum (Loropetalum sp.)	1
Lupine (Lupinus sp.)	1
Magnolia (Magnolia sp.)	4
Mallow (Malva sp.)	1
Mallow, Rose Mallow (Hibiscus sp.)	1
Maple (Acer sp.)	4
Maple, Amur (Acer ginnala)	1
Maple, Japanese (Acer palmatum)	2
Maple, Red (Acer rubrum)	5
Marigold (Tagetes sp.)	10
Mazus (Mazus reptans)	1
Mexican cliff rose (Purshia mexicana)	8
Mexican Heather, False Heather, Elfin Herb (Cuphea hyssopifolia)	5
Mexican Petunia (Ruellia carolinensis)	2
Mondo Grass, Lilyturf, Ker-Gawl (Ophiopogon sp.)	6
Moss Rose (Portulaca sp.)	1

Crop	Number Products Summarized
Mugwort, White (Artemisia lactiflora)	1
Mullein (Verbascum sp.)	1
Oak (Quercus sp.)	3
Oak, Black (Quercus velutina)	1
Oak, Northern Red (Quercus rubra)	6
Oak, Pin (Quercus palustris)	1
Oak, Sawtooth (Quercus acutissima)	1
Oak, White (Quercus alba)	1
Oregon Grape (Mahonia aquifolium)	2
Palm, Windmill (Trachycarpus fortunei)	3
Pampas Grass (Cortaderia)	2
Pansy (Viola sp.)	1
Pentas (Pentas sp.)	3
Periwinkle (Vinca sp.)	19
Persian Violet (Cyclamen sp.)	1
Petunia (Petunia sp.)	1
Phlox (Phlox sp.)	4
Photinia (Photinia sp.)	1
Pine (Pinus sp.)	3
Pine, Austrian (Pinus nigra)	3
Pine, Jap. Black (Pinus thunbergiana)	1
Pine, Loblolly (Pinus taeda)	2
Pine, Mugo & Mugho (Pinus mugo ssp. Mugo)	3
Pine, Red (Pinus resinosa)	1
Pine, White (Pinus strobus)	2
Pittosporum, Japanese (Pittosporum tobira)	1
Plane Tree, Sycamore (Platanus sp.)	1
Poinsettia (Euphorbia pulcherrima)	8
Pothos (Epipremnum aureum)	3
Pride-of-Rochester (Deutzia sp.)	2
Privet (Ligustrum sp.)	3
Purple Coneflower (Echinacea sp.)	4
Purpleleaf Wintercreeper (Euonymus radicans)	1
Red Bud, Eastern (Cercis canadensis)	2
Rhododendron (Rhododendron sp.)	14
Ribbon-Grass, Gardeners-Garters (Phalaris arundinacea)	3
Rose (Rosa sp.)	6
Rosemary (Rosmarinus officinalis)	1
Rose-Of-Sharon, Althaea (Hibiscus syriacus)	1
Russian Olive (Elaeagnus angustifolia)	2
Sage (Salvia daghestanica)	1
Sage, common (Salvia officinalis)	7
Sage, Ramona (Salvia sylvestris)	6
Sage, Russian;Blue Spire (Perovskia sp.)	1
Sage, Scarlet (Salvia splendens)	1
Sand Heath, Rosemary (Ceratiola ericoides)	1
Sandwort (Arenaria sp.)	1
Sedge (Carex sp.)	2
Shrub Verbena (Lantana sp.)	5
Skullcap (Scutellaria racemosa)	1
Smoke Tree, European (Cotinus coggygria)	1
Snapdragon (Antirrhinum majus)	13
Snow-In-Summer (Cerastium tomentosum)	1
Southern Yew (Podocarpus macrophyllus)	1
Spathe Flower, Spathiphyllum (Spathiphyllum sp.)	12
Speedwell, Brooklime (Veronica sp.)	1
Spruce (Picea sp.)	3

Crop	Number Products Summarized
Spruce, Norway (<i>Picea abies</i>)	4
Spruce, White; Cat (<i>Picea glauca</i>)	1
Statice (<i>Limonium</i> sp.)	1
Stokes Aster (<i>Stokesia</i> sp.)	1
Strawberry (Non-Bearing) (<i>Fragaria</i> sp.)	1
Strawflower (<i>Helichrysum bracteatum</i>)	1
Sumac (<i>Rhus</i> sp.)	1
Summersweet (<i>Clethra alnifolia</i>)	3
Switch-Grass (<i>Panicum virgatum</i>)	1
Ternstroemia (<i>Ternstroemia</i> sp.)	1
Thyme, Creeping (<i>Thymus praecox</i>)	1
Tickseed (<i>Coreopsis</i> sp.)	1
Transvaal Daisy (<i>Gerbera</i> sp.)	1
Treasure Flower (<i>Gazania</i> sp.)	1
Tulip Tree (<i>Liriodendron tulipifera</i>)	2
Vervain (<i>Verbena</i> sp.)	4
<i>Viburnum juddii</i> (<i>Viburnum juddii</i>)	1
<i>Viburnum</i> , arrowwood (<i>Viburnum dentatum</i>)	5
Walnut, Black (Non-Bearing) (<i>Juglans nigra</i>)	1
Wax Myrtle (<i>Myrica cerifera</i>)	1
Weigela (<i>Weigela</i> sp.)	1
White Fringetree (<i>Chionanthus retusus</i>)	1
Winged Burning Bush (<i>Euonymus alatus</i>)	3
Yarrow (<i>Achillea millefolium</i>)	2
Yellow Archangel (<i>Lamiastrum galeobdolon</i>)	1
Yellowwood (<i>Cladrastis</i> sp.)	1
Yew (<i>Taxus</i> sp.)	5
Zinnia (<i>Zinnia</i> sp.)	1

ATTACHMENT 9

A) Biopesticide Program Tolerances and Approvals – 2007

Rules - Federal Register (F.R.) – Exemption from Tolerance

Pest Control Agent (Type*)	Commodity or Crop Group	PR#	Date	No. of Uses	No. of Tolerances
AF36 (F)	Pistachio	0327B	May 14, 2007	1	1 T**
Tobacco Mild Green Mosaic Virus(H)	Grass and Hay	0364B	June 27, 2007	3	1 T
Cucumber Mosaic Virus-Weak Strain(F)	Cucurbits	0374B	August 6, 2007	14	1 P
AF36(F)	Cotton	0052	November 26,2007	1	1 P
Totals				19	4
*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, P=plant growth regulator, R=rodenticide					
** T= Temporary Exemption from Tolerance(Associated with Experimental Use Permit)					
P= Permanent Exemption from Tolerance					

B) IR-4 petitions/petition amendments submitted:

Plum Pox Resistant Plum	0377B	PIP Virus resistance	New Registration
Aspergillus flavus AF36 Corn	378B	Fungicide	EUP

C) New Registrations supported by the Biopesticide Efficacy Grant Program

Saponins of Quillaja saponaria PR #0313B, 0380B Nematicide Carrot, Tomato, Sugarbeet, Broccoli, Turf, Easter Lily, Peach

Methyl eugenol- Sentry Methyl Eugenol Cone PR# 0367B- Pheromone-All food Commodities

ATTACHMENT 9

Biopesticide Program

D) Early stage projects funded:

Development of insect-specific pathogens for control of potato tuber moth with emphasis and application of granulovirus
Monoecious hydrilla, <i>Egeria densa</i> , and Eurasian watermilfoil response to the bioherbicide <i>Mycoleptodiscus terrestris</i>
Evaluation of <i>Bacillus mycoides</i> for management of pecan scab
Optimization of pheromone dosage for oriental beetle, <i>Anomala (=Exomala) orientalis</i> (Coleoptera: Scarabaeidae), mating disruption in commercial blueberries
Evaluation of sex pheromone to control oriental beetle white grub in nurseries

E) Advanced stage projects funded:

Use of Micro 108 (AKA Actinovate SP) (<i>Streptomyces lydicus</i> WYEC 108) for controlling powdery mildew (<i>Sphaerotheca macularis</i> f.sp. <i>Fragariae</i>) in strawberry in California
Effectiveness of biocontrol seed treatments for the control of damping off of chickpea in Montana
Efficacy of Actinovate for management of powdery mildew on cantaloupe
Efficacy of Endorse for management of sclerotinia drop of lettuce
Evaluation of anthraquinone as a potential bird repellent for newly planted rice
Integration of <i>Beauveria bassiana</i> and <i>Trichoderma harzianum</i> for control of soilborne pathogens in tomato
Evaluation of <i>Metarhizium anisopliae</i> - based biopesticide (Novozymes Biologicals, Inc.) for control of thrips and onion maggot on onions and Colorado potato beetle and wireworms on potatoes
Evaluation and comparison of biopesticides and copper for management of citrus canker of Valencia oranges in south Florida
Determination of critical factors of ammonium pelargonate for weed control: product rates, application volumes, and sprayer nozzles
Evaluation of various commercially available biopesticides and biorational products as seed treatment to improve seedling germination and disease control of tomato, pepper and cucumber under greenhouse conditions
Efficacy of biofungicide "Shemer" to control <i>Rhizopus</i> soft rot of sweetpotato
Evaluation of two biopesticides for managing western flower thrips in greenhouse ornamental production
Management diseases of Apples in the southeast with biopesticides
Evaluation of entomopathogenic fungi, <i>Metarhizium anisopliae</i> and <i>Beauveria bassiana</i> , for control of yellowmargined leaf beetle in organic vegetable production

ATTACHMENT 9 (Continued)

Determine efficacy of soil drenches with new active ingredient formulations and new biopesticides for managing root, crown and stem rots of ornamental plants caused by Phytophthora and Pythium species
Mycotal for hemlock woolly adelgid management
Integration of Serenade, cultivar resistance and silicon soil amendments for enhanced management of peach rusty spot
Use of Metarhizium anisopliae to control annual bluegrass weevil
Biopesticide products at the advanced stage of development evaluated for phytophthora blight in cucurbits

F) Proposals funded under the Demonstration program included:

Efficacy of Contans and Serenade within a biopesticide intensive IPM system for management of sclerotinia drop on lettuce
Efficacy of Serenade, Sonata, and Kaligreen within a biopesticide intensive IPM system for management of powdery mildew on cantaloupe
Demonstration of foliarly applied phosphorous acid on phytophthora (Phytophthora cinnamomi) root rot on avocado (Persea americana)
Enhancing efficacy of two Beauveria bassiana products using insect attractants and growth regulators
Evaluation and incorporation of a silicon biofungicide on horticulture crops
Demonstrating the role and assessing the effectiveness of biopesticides and Bt Transgenic Hybrids for management of lepidopteran pests on sweet corn
Biopesticide Products at the demonstraton stage of development evaluated for phytophthora blight in cucurbits
Biopesticide products effective for powdery mildew in pumpkin evaluated in Integrated programs on other cucurbit crop types
Efficacy of biofungicide products for fusarium crown and root rot in pumpkin
Managing insect pests in high tunnels using biopesticides
Pilot project using smolder as a bioherbicide for dodder control
Application and demonstration of an economically viable method of Beauveria bassiana delivery in Michigan tree fruit
Demonstration of a fungicide program integrating ProPhyt and Pre-Am in grapes

The IR-4 Project
is a model
Federal, State,
Private industry
program
with proven
success in helping
specialty crop growers.

To
Learn
More
Contact

IR-4 Headquarters

Dr. Jerry Baron
Executive Director
IR-4 HQ, Rutgers University
500 College Road East, Suite 201W
Princeton, NJ 08540
732.932.9575
fax 609.514.2612
jbaron@aesop.rutgers.edu

Northeast Region

Ms. Edith Lurvey
Regional Field Coordinator
Department of Food Science
Cornell University
630 W. North Street
Geneva, NY 14456
315.787.2308
fax 315.787.2397
ell10@cornell.edu

North Central Region

Dr. Satoru Miyazaki
Regional Field Coordinator
Michigan State University
3900 Collins Road
Suite 1031B
Lansing, MI 48910-8396
517.336.4611
FAX: 517.432.2098
ncrir4@msu.edu

Southern Region

Dr. Charles Meister
Regional Field Coordinator
University of Florida
P.O. Box 110720
SW 23rd Dr. Bldg. 833
Gainesville, FL 32611-0720
352.392.2399
fax 352.392.1988
cmeister@ufl.edu

Western Region

Ms. Rebecca Sisco
Regional Field Coordinator
University of California
1 Shields Avenue
Meyer Hall Room 4218
Davis, CA 95616
530.752.7634
fax 530.752.2866
rsisco@ucdavis.edu

USDA-ARS

Dr. Paul H. Schwartz
ARS National IR-4 Director
USDA/ARS/Office of
Minor Use Pesticides
Rm. 212 Bldg. 007 BARC-W
10300 Baltimore Avenue
Beltsville, MD 20705
301.504.8256
fax 301.504.5048
Paul.Schwartz@ars.usda.gov



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