



Annual Report

2004



Rutgers University • University of California • Cornell University
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ANNUAL REPORT OF THE IR-4 PROJECT (NRSP-4/IR-4)

January 1, 2004 - December 31, 2004

INTRODUCTION

BACKGROUND

The Interregional Research Project No. 4 (IR-4 Project) was organized 41 years ago by the Directors of the State Agricultural Experiment Stations (SAES) to obtain regulatory clearances for crop protection chemicals on specialty or minor food crops when the economic incentives for the registrants precluded private sector investment. IR-4 has been administered by the United States Department of Agriculture's (USDA's) Cooperative State Research, Education, and Extension Service (CSREES) since its inception in 1963. The Agricultural Research Service (ARS) component of the USDA established a companion minor use program in 1976 to provide further program support. The objectives of the IR-4 Project were expanded in 1977 to include registration of pest control products for the protection of nursery, floral, forestry, Christmas trees, and turf crops and again in 1982 when the objective of clearance of biological control agents or biopesticides was added. The IR-4 Project works as a model government program due to unique partnerships formed between the USDA (CSREES and ARS), the IR-4 Headquarters and Regional staff, the land grant university system, the crop protection industry, commodity and grower groups, the Environmental Protection Agency (EPA), and the California Department of Pesticide Regulation (CDPR) to bring crop protection solutions to specialty crop growers.

PROGRAMS

Food Use Program

In order for the program to respond to the pest control needs of specialty crop growers, project requests are solicited from growers, commodity groups, university researchers and extension personnel, USDA researchers and other interested parties and are prioritized at the Food Use Workshop held in September of each year. The Workshop high priority projects are finalized at the October National Research Planning Meeting where field residue and analytical laboratory assignments are made for the following year based on the best use of available USDA-ARS and land grant university personnel within the funding provided by Congress. In 2004, the program scheduled 96 projects with 632 residue field trials.

Legislative initiatives have played an important role in the strategies for the program over the past 16 years. The 1988 amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA 88) required a focused program on developing new data to support reregistration of existing products at that time because many of the older products did not

have sufficient sales on minor crops to justify industry supporting them on those crops. Between 1989 and 1996, the IR-4 FIFRA 88 initiative led to the successful defense of over 700 minor crop registrations.

The passage of the Food Quality Protection Act (FQPA) in 1996 set in motion a new set of challenges which had been foreseen, in part, by the 1996 Strategic Plan. That plan recognized the trend of new, safer, reduced risk chemistries and biological control agents being developed by the crop protection industry. These products are extremely safe, making them ideal for use in integrated pest management (IPM) systems. IR-4 started integrating these new products into the 1997 program and has reached the 70-80% level since 2000. This focused effort has given the program a high level of credibility with the EPA in partnering with them to implement the mandates of the FQPA as noted in the Program Cooperation and Coordination Section. The impact of the FQPA has become clearer in recent years. Residues of the older products in foods have been confirmed to be low or non-detectable and not a major health concern. However, some of these products have been shown to have levels of exposure to farm workers and applicators leading to label restrictions, especially for specialty crops. The impact of the cumulative risk assessment on the organophosphate and carbamate insecticides will likely impose additional specialty crop label restrictions. Fortunately, the EPA has worked closely with specialty crop growers and commodity groups to preserve critical uses of certain older products while working with IR-4 and crop protection companies to rapidly make available the new products.

Ornamental Horticulture Program

The ornamental industry is an extremely important component of specialty crop agriculture with over \$15 billion in annual sales which comprise over 30% of all specialty crop sales. The research to develop efficacy and crop safety data to support registration of both traditional chemicals and biopesticides as pest control tools on ornamentals continues to be an important component of our overall program. The industry presents a formidable challenge since it involves a diverse array of crops in various markets such as floral, bulbs, forestry, Christmas trees, nursery, turf, commercial and interior landscapes, greenhouses, etc. Our focus since 1996 on biopesticides and reduced risk, safer chemistries for the food use program has also been implemented in the ornamental program with

comparable success since the objective of developing pest control solutions that are safe for workers, adaptable to existing cultural practices and are effective in IPM programs is clearly compatible for both programs.

2004 Budget Challenge

After a number of years of increased funding by Congress for both the ARS and CSREES budgets, the FY 2004 CSREES appropriation for the IR-4 Project was reduced by 10.59% from \$10.673 to \$9.549 million. This unexpected challenge was met by the Project Management Committee (PMC) who reduced Headquarters and Regional operating budgets by 8%, the Biopesticide Research Program by 12.5% and GLP field residue projects by 14.5%. Fortunately, our crop protection industry and commodity stakeholders stepped up with additional financial support to dramatically lessen the negative impact. As a result of a concerted effort by the IR-4 Commodity Liaison Committee (CLC) chaired by Rocky Lundy, Executive Director of the Mint Industry Research Council, the FY 2005 Congressional CSREES appropriation was increased to \$11.235 million. IR-4 is fortunate to have the support of stakeholder groups like the CLC and crop protection industry companies who support funding increases through their Congressional contacts and provide additional funding to accomplish an aggressive ongoing program.

FUTURE DIRECTIONS

The PMC has been proactive in implementing the current 2001 to 2005 Strategic Plan which is focused on the latest crop protection chemistries and biopesticides as specialty crop pest control solutions. The 30 month completion schedule from project initiation to EPA petition submission is also a key part of that Plan and the success rate continues around 70% due to EPA scheduling capacity limitations. IR-4 considers this level as extremely successful given the fact that our petitions have accounted for over 50% of the Agency's new uses for existing products for the past four years. The PMC has scheduled a Strategic Planning Conference for February 15 and 16, 2005 to obtain stakeholder input for the next planning period starting in 2006.

The Strategic Plan also targets additional support for and emphasis on the Methyl Bromide Alternatives (MBA) Program. We now have four years of solid research data from large scale, replicated research trials on strawberries and tomatoes in Florida and California which demonstrate that currently or soon-to-be registered products, when used in combinations appropriate for the soil type and production systems, provide effective nematode, weed and disease control

comparable to the methyl bromide/chloropicrin standard. This is important to growers of these specialty crops since 2005 will eliminate the use of methyl bromide except for critical use exemptions. The program has expanded to mulched vegetables, cut flowers, bulb crops and other specialty crops like asparagus and ginseng in recent years. Further details on this important program are found in a later section.

The Biopesticide Research Program continued its eighth year of competitive grant funding of 43 projects for \$350,000 and amounting to over \$2,850,000 since its inception. In addition to funding projects that have focused in recent years on the biopesticides considered Advanced Stage (near commercialization or commercialized but expanding uses to specialty crops), IR-4 has continued to help biopesticide registrants with regulatory advice and petition preparation help, if requested. IR-4 has supported the growth of the Biopesticides Industry Alliance (BPIA) as a trade association of biopesticide companies. IR-4 is working closely with BPIA and the EPA's Biopesticides and Pollution Prevention Division (BPPD) who regulate biopesticides to speed the registration and grower acceptance of these crop protection tools. BPPD provided major funding (\$80,000) to IR-4 in 2004 for a Biopesticide Demonstration Program with \$100,000 in total funding. The purpose of this program was to support grower use and university extension recommendations of currently registered biopesticides in combination and/or rotation with traditional chemistries for pest control on specialty crops in IPM systems. This program supported nine grants this year.

The outreach/communications program expanded significantly in 2004 with the new Communications and Publications Coordinator. The Newsletter was completely revamped and has gone from a 30 to 40 page information intensive publication to a glossy eight page communication that provides articles of general interest to IR-4 stakeholders. Also improved and updated were the brochures as well as the IR-4 website and state specific communication pieces.

The 2004 Annual Report highlights the progress of IR-4 toward achieving the goal of providing safe and effective chemical and biopesticide options for specialty crop growers which are compatible with IPM programs. The clearances were the highest on record with 1014 food use clearances including 2 biopesticide food use clearances (compared to the record of 793 in 2003) along with 216 ornamental uses.

PROJECT: National Research Service Project No. 4 (NRSP/IR-4). A National Agricultural Program to Clear Pest Control Agents for Minor Uses. January 1, 2004 to December 31, 2004.

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.

PROGRESS of WORK and PRINCIPAL ACCOMPLISHMENTS

FOOD USE RESEARCH PROJECTS

There are currently 9426 IR-4 food-use requests, an increase of 278 over the 9148 requests reported in 2004. Of these, 1145 are researchable projects. In 2004, SAES and USDA-ARS cooperators scheduled research on 96 requested clearance projects (studies) which represented 762 field trials. Residue samples from 632 field trials went to SAES, USDA-ARS, and other cooperating analytical laboratories. Research protocols were prepared or revised for each study as required by EPA Good Laboratory Practice Standards. The chemicals and commodities researched in 2004 are shown in Attachment 3.

FOOD USE REGULATORY ACCOMPLISHMENTS

IR-4 Supported Approvals

The Pesticide Registration Improvement Act (aka Fee for Service) was passed on January 23, 2004 and ushered in a number of new challenges for IR-4. This new law resulted in a number of procedural changes not only for EPA, but also for IR-4 and our cooperating registrants. The agricultural chemical industry stepped up and agreed to pay millions of dollars for EPA to review their petitions, some of which have been “backlogged” at EPA for several years. In doing so, EPA has had to deal with new procedures for logging in reports and billing clients for their work. To ensure that IR-4’s petitions were being properly handled, EPA requested that IR-4 follow new procedures that include fee waiver letters as well as Notices of Filing and for registration packages to be submitted on behalf of the registrants.

However, IR-4 still ended up with a record number of new uses that can be added to product labels. Over 1,000 new uses were realized which were based on two hundred and nineteen permanent tolerances, exemptions, or temporary tolerances based on IR-4 data. A complete list of these new uses can be found in Attachment 4. These new uses reflect EPA’s work on 33 different products. CDPR continues to provide support to the workshare program and many of these new uses were a result of CDPR’s review of residue chemistry data and risk assessment for the EPA. Nearly half (479 uses and 91 tolerances) of the new uses were based on EPA’s approval and granting of tolerances for carfentrazone-ethyl. The large number of uses for this product was the result of a proposal that IR-4 submitted to the EPA in 2001. The project was accomplished with data generated in cooperation between IR-4 and FMC.

IR-4 data from traditional chemical products resulted in 955 new uses that can be added to product labels. These uses are based on EPA granting 197 tolerances on 14 products. As noted above, carfentrazone alone accounted for 479 of these uses. IR-4 data also supported 25 new biopesticide food uses in 2004. These include *Aspergillus flavus* AF-36 for use in cotton in the state of California, *Bacillus pumilis* and *Bacillus subtilis* QST713, and yeast hydrolysate which were granted exemptions, and thymol use in beehives which received another Section 18 tolerance exemption.

IR-4 data were also used to support many of the time-limited Section 18 tolerances established over the past year. A total of twenty-two Section 18 time-limited tolerances were established based on IR-4 data. These Section 18 tolerances supported 34 minor crop uses that in many cases supported uses in multiple states. This number is significantly lower than in 2003, and is due to a large number of IR-4 supported permanent tolerances that addressed many of the past Section 18’s requested.

In summary, the total new food use clearances supported by IR-4 research in 2004 include: 955 new chemical clearances, 25 new biopesticide clearances and 34 Section 18 uses for a total of 1014 new uses.

Crop Group Definitions

The Crop Grouping Project has attracted growing interests from the international community, and consequently the International Crop Grouping Consulting Committee was established in February of 2004 to assist the IR-4/EPA Crop Grouping Working Group (Drs. H. Chen, B. Schneider, & Y. Ng). The committee, Chaired by Dr. H. Chen, continued to grow to over 140 members (commodity, agrichemical and regulatory experts) from 13 countries including EU and Codex members. IR-4 PMC members, IR-4 Senior Management Team, and many EPA/OPP management staff and risk assessors and USDA scientists are personally involved in the committee. IR-4 Headquarters management staff and Coordinators facilitate workgroup activities for the 32 workgroups as Workgroup Chairpersons.

The Working Group initiated updates for four crop groups in 2004. Crop Group 3, bulb vegetables, was the first crop group to complete the update. The proposed new crop group consists of 25 commodities versus 7 in the existing crop group (see Attachment 5, Table 1). Considerable amount of data on cereal grains and grasses, also some for tropical fruits and small fruits have been collected and prepared for crop group updates. Several electronic databases were developed including Codex and EPA crop group tables, crop vocabulary, US and Canada crop distribution maps, and a dry matter database. In July, the Working Group provided a training class for EPA/OPP Risk Assessment Training and Certification Program on "Crop Grouping and Its Impact on Risk Assessment". In December a poster, "US Crop Grouping Project and International Collaboration", was presented at the European centennial meeting of the Association of Applied Biologists in Oxford, UK. The Working Group also provided consulting services on a daily basis to registrants, agriculture researchers, and regulatory agencies within the US and other participating countries. Several crop groups are scheduled to be updated in 2005 (see Attachment 5, Table 2).

REGULATORY PROGRESS

One of the most significant changes for IR-4 this past year was the passage of the Pesticide Registration Improvement Act (PRIA) of 2004 that was signed into law on January 23, 2004. This new law holds significant potential for increased pesticide registration program efficiencies including more predictability and increased accountability in registration decisions and funding stability. However, under the requirements of PRIA, the EPA requires a complete petition along with a supporting registration package to be provided at the same time. This allows the Agency to start the review and decision making processes immediately so it can be completed without the loss of efficiency involved in starting and stopping work and waiting for additional information. These new requirements have caused additional work for IR-4 and have resulted in a slight decrease in the number of packages submitted to the EPA in 2004. However, once IR-4 becomes familiar with the new process, it is anticipated that the IR-4 submissions will continue at the previous pace.

IR-4 continues to increase the overall number of electronic submissions made to the EPA. It is likely that these submissions will save the EPA as much as 25% of their review time and are very useful for joint reviews with California's Department of Pesticide Regulation (CDPR) and Canada's Pest Management Regulatory Agency (PMRA). These submissions enable the EPA to review IR-4 petitions more rapidly and with fewer resources. In 2004, IR-4 essentially transitioned all of its submissions into a new format known as the "EPA Recommended Format" which again should help the EPA review IR-4 petitions more rapidly. IR-4 maintained its submission schedule. However, under PRIA, the EPA now schedules IR-4 petitions when they are received and logged in. IR-4 packages are given the same review time as "paid" packages under this new law. In addition to the new submission procedure required under PRIA, IR-4 has been providing the EPA with a list of "backlogged" studies that were submitted to the

Agency but never scheduled for review. This list of nearly 150 petitions is now being scheduled and decisions will be made in the timeframe mandated by the law.

As noted above, IR-4 has been working hard with the EPA to update the existing crop groups and has now dedicated one full time coordinator (Dr. H. Chen) to this important strategic program. The current work involves updating monographs and providing crop group proposals to EPA's ChemSAC for review. It is anticipated that this effort will take another one to two years to complete. We also have a number of international groups working on this update. Once complete, each IR-4 submission will support an even greater number of minor uses. Currently, IR-4 obtains about five minor crop uses for each submission. It is expected that once the new crop groups are complete, IR-4 maybe able to expect as many as 15 uses per submission. EPA's "Work Share Program" with the CDPR continues to be extremely productive with a large number of new uses resulting from data packages reviewed by CDPR. This program will likely double or triple in the coming years. This year, Canada's Agriculture and Agri-Food Canada (AAFC) minor use program and IR-4 have been working to submit petitions to PMRA and EPA for four pilot projects. These pilot projects have helped the minor use program and each agency become familiar with the processes and should serve to facilitate the process when larger numbers of projects are submitted in the future.

Data Package Development

IR-4 submitted 111 data packages to the EPA in 2004 (see Attachment 6) which was lower than the 139 submitted in 2003. This decrease was entirely due to adapting to the new requirements of PRIA as well as spending time "activating" and notifying the EPA of existing submissions. Although a lower number of packages were submitted, it is likely that these submissions along with the number of "activated" submissions will increase the overall number of projects in EPA's queue and should result in an overall increase in the number of clearances. The current number of projects in line for report writing is 349 (see Attachment 7).

ORNAMENTAL HORTICULTURE RESEARCH AND CLEARANCES

IR-4 conducted 525 ornamental research trials during 2004 to support clearances in floral, nursery, landscape, turf, Christmas tree, and forestry crops. Through the project prioritization process at the Ornamental Horticulture Workshop, collaborative efforts by the ornamental industry and IR-4 resulted in 216 new ornamental clearances being granted by the EPA (Attachment 8). These included 40 fungicide, 25 insecticide, 130 herbicide, and 21 plant growth regulator clearances.

BIOPESTICIDE RESEARCH AND REGISTRATIONS

In 2004, the following biopesticide research projects were funded. *Early Stage* projects included: MPCA P130A: A Biofungicide for the Control of Apple Scab; Field Efficacy Trials for Bloomtime Biological; The Use of Bait Stick Technology for Management of Pepper Weevil; Management of Plant-Parasitic Nematodes on Annual Crops with Quillaja 35% and Meadowfoam; MPCA P130A: A Biofungicide for the Control of Apple Scab; Field Testing *Bacillus mycoides* Isolate Bm J for Control of *Anthraco*se and Angular Leaf Spot of Cucurbits and *Cercospora* Leaf Spot of Table Beet; and Application of *Microsphaeropsis ochracea* for the Biological Control of Apple Scab.

Advanced Stage projects included: *Trichoderma hamatum* 382 a Unique Mode of Control for Foliar Pathogens in Nursery Crops; Use of Azatrol to Control Japanese Beetle Adults; Pheromone-Based Strategy for Control of Western Poplar Clearwing Moth; Efficacy of Sonata and Serenade for Powdery Mildew in Pumpkin and Foliar Diseases in Tomato Used in Organic and Conventional Production Systems; TerraClean for Control of Plant Parasitic Nematodes; The Microbial EcoGuard (*B. licheniformis*) for Management of *Botrytis* Flower Blight of Ornamental Plants; Greenhouse Evaluation of Lexx-A-Phos (BioPhos[®], FNX-100) for Control of *Phytophthora capsici* on Peppers; Electrolyzed Oxidized Water for Plant Disease Control; Use of Cytokinin and Auxin Formulations for Control of

Pythium spp on Tomato and *Phytophthora capsici* on Pepper; Greenhouse Evaluation of Lexx-A-Phos (BioPhos, FNX-100) for Control of *Phytophthora capsici* on Cucurbits; Preventing Foliar Diseases in Pumpkins with Biophos in Rotational Systems; and Control of Foliar Nematodes in Nurseries and Landscapes.

The Biopesticide Demonstration Program was initiated in 2004 through a cooperative effort between IR-4 and EPA which funded \$80,000 of this \$100,000 grant program. Proposals funded under this program included: Biopesticide-Based Area-Wide Approach to Managing Codling Moth in Michigan Apple; Effectiveness of the Biological Pesticide Serenade (*Bacillus subtilis*) within an Apple IPM system to Control Major Diseases; Evaluation of Mycotrol O[®] (*Beauveria bassiana*, GHA strain) Application Enhanced with Canola Oil to Prevent Grasshopper Infestation of Improved Pastures and Irrigated Fields; Demonstration of Effective Tactics for the Biopesticide Botanigard, Alone and in Conjunction with Spintor for Control of the Blueberry Flea Beetle; Incorporating NPV into an IPM Program for Corn Earworm; Evaluating Several Biopesticides for Powdery Mildew in Cucurbit Crops; Demonstration of Effectiveness of Serenade, *Bacillus subtilis*, Within a Grape IPM Program to Control Powdery Mildew and *Botrytis* Bunch Rot; Effectiveness of Contans and Serenade Within a Biologically Intensive Integrated Pest Management System for *Sclerotinia* Drop on Lettuce; and A Demonstration Trial of Biofungicides with Efficacy for Controlling Dollar Spot in Turfgrasses.

In 2004, four biopesticide petitions, amendments or data submissions were made to EPA. These are listed in Attachment 9.

METHYL BROMIDE ALTERNATIVES (MBA) PROGRAM

The IR-4 Methyl Bromide Alternatives (MBA) program began in the fall of 1998 and since then many field trials have been run in the states where methyl bromide is an important product for the protection of tomato and strawberry crops from weed competition, and attack by plant parasitic nematodes and phytopathogenic fungi. Recently, the program was expanded to include peppers, eggplant, cucurbit vegetables, cut flowers, ornamental bulb crops, and turf. Trial locations, in addition to those in CA and FL, included large scale programs in AL, MI, and NC. Collaborating researchers included land grant university and USDA ARS scientists and professional contract research organizations in CA and FL. Driscolls Strawberry Associates and the CA Cut Flower Commission also played key roles in the expansion of the IR-4 MBA program by facilitating research in the crops of importance to them. To a lesser extent, IR-4 has also been involved in finding and assisting in the development of products to protect specialty products in storage. Beginning in 2002, IR-4 provided data and other support in efforts to help commodity organizations obtain critical use exemptions (CUE's) to enable the continued use of methyl bromide until economical and technically viable alternatives can be registered and phased into grower practice. IR-4 has served as a member of the USDA/EPA MBA Working Group since it was first formed and participates in meetings when requested to discuss IR-4 results with products that have been evaluated in the IR-4 field programs. The "outreach" component of IR-4's MBA program includes not only Newsletter publications but also field tours of research in strawberries, fresh market tomatoes, solanaceous vegetables and cut flowers in all states involved in the IR-4 MBA program. Additionally, oral presentations of results are given in professional meetings and at grower's meetings arranged by company representatives or by commodity organizations when requested to do so.

Results to Date: Products that show promise as methyl bromide alternatives for all crops include the registered products containing 1,3-dichloropropene (Telone/InLine), chloropicrin, and metam sodium/metam potassium (Vapam/K-Pam). Consistently excellent control comparable to methyl bromide plus chloropicrin has been obtained from either Telone/InLine or chloropicrin injected into beds followed 5 to 7 days later with full label rates of either metam sodium or metam potassium.

Products that are now registered for use in tomatoes for control of nutsedge (*Cyperus* spp.) and other weeds include halosulfuron methyl (Sanda) and trifloxysulfuron sodium (Envoke). Sandea may also be used in other fruiting vegetables and in cucurbits. Fosthiazate nematocide has now been registered for

nematode control in fresh market tomatoes but labeling issues need to be resolved before the registrant will be willing to market the product.

Products pending registration as MBA's and under expedited data reviews include Midas (iodomethane), Basamid (dazomet), MULTIGUARD™PROTECT (furfural), and SEP-100 (sodium azide). Registration is anticipated in 2005 for these products.

Propylene oxide has shown promise in many trials as a soil fumigant to replace methyl bromide but at this time the registrant has not applied for a registration. This product is EPA registered for the post harvest protection of stored nutmeats, inshell nuts, cocoa, and spices. Other post harvest label amendments are under EPA review.

Products extensively evaluated by IR-4 but dropped from further testing due to company decisions to bring the research back into the companies for use refinement include AJ1629 from Ajay, North America, Enzone from Helena Chemicals, and MCC-A1641 from Uniroyal Corporation.

Products entering the IR-4 MBA program for the first time in 2004 included STAN, a seed protectant product from Syngenta; F3825 200CS, a nematicide from FMC Corporation, and sulfentrazone herbicide from FMC Corporation. These products along with other products that have shown promise as MBA's will be evaluated further in the IR-4 MBA programs in 2005.

QUALITY ASSURANCE (QA)

The IR-4 Project's Quality Assurance Unit (QAU) continues to provide monitoring and support of cooperating scientists throughout the United States. Quality Assurance Coordinators have continued conducting on-site facility compliance inspections, in-life critical phase inspections, and raw data and final report audits as required by the Good Laboratory Practice Standards, 40 CFR 160 (GLPs). QA findings, recommendations and documentation of corrective actions (160.35b(3)) were forwarded to the Study Directors and Testing Facility Management.

In addition to their standard duties, members of the IR-4 QAU were involved in US EPA GLP compliance inspections. Six IR-4 participating field testing sites and four IR-4 analytical laboratories (or manufacturer sponsored labs) were audited in 2004 by the US EPA for GLP compliance and data integrity. Two inspections were postponed for rescheduling. A total of 57 IR-4 related facilities have been inspected for GLP compliance since April 27, 1997.

The IR-4 QAU is comprised of HQ 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 (SOPs) by which it maintains consistent monitoring activities of IR-4 GLP research studies.

The IR-4 QAU is a cooperative unit. Representatives mutually monitor studies and coordinate activities in an efficient manner. In 2004, regular inspections included 39 facility inspections, more than 170 field in-life inspections (29 conducted by our Canadian QA participants), 95 analytical in-life inspections, 60 analytical summary report/data audits and 659 field data book audits. There were over 45 final reports completed during the 2004 calendar year and a total of 62 final reports audited.

The IR-4 QAU held meetings twice in 2004. The annual QA Planning Meeting was held on March 3-5, 2004 in Orlando, FL. We were joined by Ms. H. Penny of Agriculture and Agri- Food Canada (AAFC), who represented the Canadian QA/GLP monitoring program and Dr. P. Schwartz of the USDA-ARS Minor Use Program. The fall IR-4 QA Meeting was held October 26-27, 2004 at IR-4 Headquarters in conjunction with the IR-4 National Research Planning Meeting.

PROGRAM COOPERATION AND COORDINATION

The IR-4 Program continues to pride itself as being a model of interagency cooperation for a federally funded program by forming partnerships with the crop protection industry, the land grant university system, commodity organizations, specialty crop groups, our USDA funding agencies (ARS and CSREES), and regulatory agencies (the EPA, California's Department of Pesticide Regulation and Canada's Pest Management Regulatory Agency) to provide the latest pest control tools to specialty crop growers. The various partnership initiatives with the organizations noted are discussed below for 2004:

- **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 have the newest crop protection products to provide our specialty crop stakeholders. We have continued and expanded our senior management and technical review meetings with crop protection industry companies this year. Over 50 meetings were held with 25 different companies including ten in Japan. Drs. Bob Holm, Executive Director, and Jerry Baron, Associate Director, were invited to Japan in March by Professor Naoki Motoyama of Chiba University to attend meetings with Japan's Ministry of Agriculture, Forestry and Fisheries to discuss the IR-4 program and its operations. The trip was sponsored by the Japan Crop Protection Association and allowed visits to the leading crop protection companies who have research and development programs. These companies provide new crop protection products to U.S. affiliates or license them to third parties for U.S. registration and marketing. We were surprised to learn that over 40 products that IR-4 has and is working with in the U.S. for specialty crop uses were discovered in Japan. The Japan visits strengthened IR-4's credibility with U.S. affiliates and gave the companies additional confidence in our working on their products with third party licensees. IR-4 is also encouraged that the new product pipeline restriction noted the past few years appears to be easing. In 2002 and 2003, the industry submitted only 9 new chemistries each year for EPA review compared to 20 in 1999. However, IR-4 came across at least 15 new products being commercialized by the crop protection industry in 2004. IR-4 formed unique partnerships with at least three companies on their new molecules at a stage shortly after the commercialization decision was made. An outstanding example of this partnership initiative was with Dupont Crop Protection and their exciting new insecticide DPX-E2Y45. DuPont and IR-4 worked together to develop a specialty crop strategy. Dupont used this opportunity to introduce DPX-E2Y45 at the 2004 Food Use Workshop rather than the traditional launch at a scientific society meeting. This approach allowed the university researchers working with the insecticide the past two years under confidentiality agreements to submit Project Clearance Requests for prioritization. The end result was two DPX-E2Y45 projects for the 2005 field research program. This is just one example of many that typify the excellent partnerships developed between IR-4 and crop protection industry companies. As noted previously in the Introduction Section under 2004 challenges, IR-4 would not have been able to conduct a nearly complete field research program as prioritized by our stakeholders at the 2003 Food Use Workshop without the financial support from the companies we work with, and especially Bayer CropScience, BASF, Dow AgroSciences, Dupont Crop Protection, Syngenta Crop Protection, Valent USA Corporation and commodity organizations.
- **EPA.** Four meetings of the EPA/IR-4 Technical Working Group (TWG) were held this past year bringing the total to 23 held since the TWG was formed in 1999. The TWG has expanded in recent years to include California's Department of Pesticide Regulation, Canada's Pest Management Regulatory Agency, and Agriculture and Agri-Food Canada. The day long TWG Meetings consist of a morning session with EPA and IR-4 staff to discuss new regulatory approaches and ways to enhance the ongoing petition submission and review process. The afternoon session is open to all TWG partners in discussing U.S. and NAFTA regulatory efficiencies. IR-4 also sponsored a tour for EPA staff in the fall highlighting greenhouse production practices and organic farming.

EPA management support continued to be excellent at all levels in the Agency from Jim Jones/OPP Director and his senior management staff of Division Directors: Lois Rossi/Registration Division, Margaret Stasikowski/Health Effects Division and Debbie Edwards/Special Review and Reregistration Division. Dr. Stasikowski retired at the end of the year and we thank her for her support of the partnership initiatives between the EPA and IR-4. Jeff Herndon, Assistant Director and longtime TWG leader, served as Acting HED Director until Tina Levine was named as HED Director in December. Sidney Jackson filled in very capably while the Registration Division (RD) searched for a Minor Use Officer to replace Hoyt Jamerson. Dan Rosenblatt was named as Minor Use, Section 18 and Inerts Branch Chief with oversight management for the IR-4 petitions in RD. Dan has worked closely with Dan Kunkel, Assistant Director Registrations, to coordinate IR-4 petition submissions and the new requirements under the Pesticide Registration Improvement Act (PRIA).

In spite of the challenges faced by PRIA and personnel shifts/retirements, the Agency regulatory tolerance approvals of IR-4 submitted petitions resulted in a record 1014 food use clearances for a 28% improvement over the previous record of 793 recorded in 2003.

- **California's Department of Pesticide Regulation (CDPR).** CDPR has been a member of the TWG since 2000 and has been an active and productive contributor to the overall accomplishments as noted in the EPA section through a work share program on IR-4 petitions. In 2004, CDPR continued its commitment to provide the residue chemistry and risk assessment reviews for over 20 IR-4 petitions which accounted for approximately 20% of the total IR-4 petition reviews and 10% of the entire EPA workload. This was in spite of the continual state budget pressures thanks to strong management support from Paul Helliker, CDPR Director, and senior management staff which included Paul Gosselin, Tobi Jones and Barry Cortez as well as David Supkoff, Senior Regulatory Specialist, who manages the program. David and the CDPR team actively participated in the TWG meetings and hosted a meeting for Headquarters and Western Region IR-4 staff at their offices in Sacramento in October to discuss additional partnership initiatives. A January meeting has been scheduled with Mary-Ann Warmerdan, the new CDPR Director, to continue our fine partnership initiatives.
- **Health Canada's Pest Management Regulatory Agency (PMRA).** PMRA staff, especially Doug Rothwell, continued their active participation in the Food Use Workshop and National Research Planning Meeting to facilitate the regulatory discussion on projects that AAFC selected to partner with IR-4 for joint resource sharing. The PMRA/EPA NAFTA workshare project on four IR-4 petitions for joint review that was approved by the December 2003 NAFTA Technical Working Group has progressed to the petition submission phase. The December 2004 NAFTA Technical Working Group approved an expansion of the program to 10 or more IR-4 petitions for joint review in 2005/2006.
- **Agriculture and Agri-Food Canada (AAFC).** The partnership between IR-4 and AAFC'S Pest Management Centre in Ottawa continued to flourish in 2004. IR-4 staff, at the invitation of AAFC, participated in the March 2004 Canadian Minor Use Workshop to explore ways to work jointly on projects of mutual interest to U.S. and Canadian specialty crop growers. Shirley Archambault, AAFC IR-4 Coordinator, has done an excellent job in facilitating communications between our teams. Shirley and Alan Tomlin, Acting Director, attended the summer PMC Meeting in Traverse City, MI to explore means to expand cooperation efforts. Shirley and several AAFC team members attended the Food Use and Ornamental Workshops as well as the National Research Planning Meeting. AAFC will conduct the food use residue trials in 2005 as part of their partnership interest on projects prioritized by IR-4 stakeholders.
- **Commodity Liaison Committee (CLC).** The CLC under the proactive leadership of Rocky Lundy, CLC Chair and the Mint Industry Research Council Executive Director, continued to provide stakeholder input on behalf of commodity groups and specialty crop growers to the PMC on overall operations and program direction. They also were responsible for actively addressing

with Congress the negative impact of the 10.59% (from \$10.6 million in FY2003 to \$9.5 million for FY 2004) reduction in funding through USDA-CSREES. Their efforts were extremely successful as the result of numerous contacts with Congressional representatives and their agriculture staff leadership that resulted in a final CSREES appropriation of \$11.235 million for FY 2005. The entire program is grateful for their efforts which will result in increased funding for the Food Use and Ornamental Horticulture Programs, the Biopesticide Program and special initiatives such as a pilot food use efficacy program.

USEFULNESS OF FINDINGS

IR-4 goes through an extensive process 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. IR-4 provides program coordination, technical guidance and funding for both field and laboratory research to develop residue and other data required by the EPA to register specialty crop pest control solutions. All IR-4 food use residue research is carried out by EPA approved GLP's with coordination and implementation by the QAU. Annual training of the Field Research Directors, laboratory personnel and other support staff involved in the conduct of work is essential to the success of the IR-4 Project. GLP compliance audits of facilities and of ongoing field and laboratory procedures, provides assurance that IR-4 food safety data will be accepted by the crop protection industry, growers and the Agency. Without the existence of the IR-4 Project, fewer safe and effective crop protection chemicals and biological alternatives would be available for use on specialty crops today.

WORK PLANNED FOR 2005

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. Established partnerships will be enhanced while new partnerships will be expanded with AAFC, PMRA and CDPR.

The research program for year 2005 will consist of approximately 93 studies supported by 637 field trials. Eighty-seven of these studies will require the collection of residue samples and 6 will be for collecting efficacy and/or crop safety data to support specific data needs. Four hundred and ninety-four of the field trials (494) will be conducted by regional state agricultural research stations, while USDA-ARS will be conducting 99 field trials and Canada has agreed to cooperate on 44 trials.

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 hold GLP and/or QA training sessions for IR-4 personnel and cooperators, 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 15-16, 2005 in Davis, California to conduct the annual QA Planning Meeting. The implementation of the IR-4 30 month time-line for study completion and the EPA review plan will be the major focuses as QA assignments are planned for year 2005. Coordination of the field research monitoring season with our Canadian QA partners will be a productive addition to the QA work plan.

For the 2005 Biopesticide Research Program, IR-4 received a total of 91 proposals requesting approximately 1 million dollars. Out of the 91 proposals, 16 were Early Stage, 52 were Advanced Stage and 23 were Demonstration Program proposals. Of the 91 proposals, 58 involved disease management, 22 were for insect/mite management, 6 were for weed control, 4 are for nematode control, and one was for a plant growth regulator.

The IR-4 Methyl Bromide Alternatives program in 2005 will involve new trials in peppers, tomatoes, and cucurbit vegetables in FL plus completing a number of studies that were started in 2004 in AL, NC, MI, and CA. These trials involve research in tomatoes, peppers, eggplant, summer and winter squash, cucumber, watermelon, cantaloupe, ginseng, and asparagus. New trials are to be run in strawberries with Driscolls Strawberry Associates and in association with the CA Strawberry Commission and UCD scientists in 2005. Additionally, a number of new tests will be initiated in cut flowers and bulb crops in CA through programs funded by IR-4 through the CA Cut Flower Commission. IR-4 will continue to play an active role at the EPA and CDPR where a number of products are pending initial registrations as methyl bromide alternatives. These products include MULTIGUARD(TM)PROTECT (furfural), SEP-100(sodium azide), Propozone(propylene oxide), and label modifications for fosthiazate which was EPA-registered as a methyl bromide alternative via recommendations from IR-4 but needs amendments to the label to ensure adequate efficacy. IR-4 will continue its role of participating with USDA ARS and USDA CSREES in a number of capacities, including Critical USE Exemption (CUE) support, the National Methyl Bromide Alternatives Transition Plan, and proposal reviews when asked to do so. IR-4 will work with the land grant universities in proposal preparations for submission to USDA CSREES for funding consideration and will also direct companies to land grant universities if they have products that may have promise as methyl bromide replacement products (e.g. DMDS, Hydrogen Cyanamid). IR-4 will continue participation on the USDA/EPA MB Alternatives Working Group and attend meetings as they are scheduled in 2005.

In the non-food, ornamental horticulture area, IR-4 will continue to focus research efforts on the “Super A” priority projects. For 2005, six of these high priority projects were identified by the stakeholders at the 2004 Ornamental Horticulture Priority Setting Workshop. The “Super A” priorities are scale/mealybug management and white grub management with entomology, soil and foliar management of *Phytophthora* in plant pathology, and safety of herbaceous perennial plants with herbicides. There is an additional “Super A” priority on the testing of the herbicide quinclamine on numerous woody plants for crop safety. In addition to the above, IR-4 will continue to work on crop safety testing of herbicides, insecticides and fungicides on various crops.

IMPACT

The successes/accomplishments of the IR-4 Program have been documented by the food use and ornamental horticulture clearances obtained as noted in the Food Use New Tolerances and Approvals and Ornamental Horticulture Pest Control Clearances sections, respectively. With the help of Dan Rosenblatt, EPA Minor Use, Section 18 and Inerts Branch Chief, and his staff, IR-4 continued the Section 18 Economic Benefits/Loss Avoidance Project initiated in 2000 to document potential economic impact (loss) data from state submitted Section 18's approved by the EPA and supported by IR-4 residue data. In 2004, the 2003 data were summarized and resulted in a \$1.3 billion impact with 128 Section 18's. The total over the six year period from 1998 to 2003 where the data are available bring the total economic impact/loss avoidance to \$7.5 billion from 831 Section 18's covering 47 states. In 2002 and 2003, the EPA credited IR-4 with eliminating 112 Section 18's by conversion to full Section 3 labels. Since 1998, 143 Section 18's have been converted to full Section 3 labels. The number of Section 18's approved by the Agency using IR-4 data have dropped from a high of 180 in 2001 to 22 in 2004. This is the result of the high rate of Section 18 to Section 3 conversions and IR-4's 30-month completion goal which minimizes the number of years that Section 18's are needed on new crop protection products before Section 3 labels are approved by the EPA.

OVERALL SUMMARY

When the record of 793 food use clearances was set in 2003, it was believed that this number would be difficult to surpass since it represented a 40% increase over the previous record of 567 in 2000. However, the 1014 food use clearances obtained in 2004 represented a 28% increase over the 2003 record, boosting

the 41 year total to over 8300 clearances. It is interesting to note that 3780 or 45.5% of all clearances in the program's history have been obtained in the last 6 years. This remarkable accomplishment is due to the dedication and hard work of our Regional and Headquarters staff, the ARS staff, the entire land grant university system, and of course our regulatory partners, the EPA and California Department of Pesticide Regulation, who did an excellent job of reviewing our petitions and approving these uses. It has become increasingly clear with the Japan trip, our NAFTA partnership with Agriculture and Agri-Food Canada and Health Canada's Pest Management Regulatory Agency, the intense interest of over 130 scientists from 13 countries in the crop grouping project and our visits with European Union representatives that the IR-4 Project is viewed as an important and unique global model for specialty crop agriculture's pest control solutions. The crop protection industry has continued to be an excellent partner in working with IR-4 to provide their latest technologies, both chemical and biological, for specialty crop uses. However, the Project must continue to evolve in order to stay relevant. To this end, the importance of the February 2005 Strategic Planning Conference to obtain stakeholders input on future directions will be critical to the future of IR-4.

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December 31, 2004

R.E. Holm, Executive Director
IR-4, Cook College, Rutgers - The State University
of New Jersey

Approved:

R.M. Hollingworth, Chair, Project Management
Committee
Michigan State University

G. Lemme, Chair, Administrative Advisers
Michigan State University

Attachments:

1. Cooperating Personnel, Departments and Agencies
2. Field and Laboratory Research Cooperators
3. Food Use Research Projects
4. New Tolerances and Approvals
5. Crop Groups/Definitions
6. Data Packages Completed
7. Regulatory Documents in Preparation
8. Ornamentals Pest Control Registrations
9. Biopesticide Research and Development

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ATTACHMENT 1

COOPERATING DEPARTMENTS AND AGENCIES

Agriculture and Agri-Food Canada
California Department of Pesticide Regulation
Canadian Horticultural Council
Canadian Pest Management Regulatory Agency
U.S. Department of Agriculture, Agricultural Research Service
U.S. Department of Agriculture, Animal and Plant Health Inspection Service
U.S. Department of Agriculture, Cooperative State Research Education and Extension 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

Administrative Advisers (AA's):

Dr. M. Duryea, *University of Florida*
Dr. C. Hefferan, *U.S. Department of Agriculture*
Dr. E. Knipling, *U.S. Department of Agriculture*
Dr. G. Lemme, *Michigan State University, Chair*
Dr. M. Parrella, *University of California, Davis*
Dr. D. Rossi, *Rutgers University*

Representing

Southern Region
USDA-CSREES
USDA-ARS
Northcentral Region
Western Region
Northeast Region

Project Management Committee (PMC):

Dr. M. Duryea, <i>University of Florida</i>	Southern Region
Dr. R. Hollingworth, <i>Michigan State University, Chair</i>	Northcentral Region
Dr. R. Holm, <i>Rutgers University, Executive Director</i>	IR-4 Headquarters
Dr. D. Kopp, <i>U.S. Department of Agriculture (after Fall 2004)</i>	USDA-CSREES
Dr. G. Lemme, <i>Michigan State University</i>	AA Chair
Mr. R. Lundy, <i>Mint Industry Research Council</i>	CLC Chair
Dr. M. Marshall, <i>University of Florida</i>	Southern Region
Dr. M. Miller, <i>University of California, Davis</i>	Western Region
Dr. J. Parochetti, <i>U.S. Department of Agriculture (until Fall 2004)</i>	USDA-CSREES
Dr. M. Parrella, <i>University of California, Davis</i>	Western Region
Dr. N. Ragsdale, <i>U.S. Department of Agriculture</i>	USDA-ARS
Dr. D. Rossi, <i>Rutgers University</i>	Northeast Region
Dr. P. Schwartz, Jr., <i>U.S. Department of Agriculture</i>	USDA-ARS
Dr. D. Soderlund, <i>Cornell University, Geneva</i>	Northeast Region

SUPPORT GROUPS

Headquarters Technical and Support Staff:

Dr. M. Arsenovic, *Coordinator*
Mr. W. Barney, *Coordinator*
Dr. J. Baron, *Associate Director*
Dr. M. Braverman, *Manager, Biopesticides*
Dr. H. Chen, *Coordinator*
Dr. J. Corley, *Coordinator*
Dr. K. Dorschner, *Coordinator*
Ms. C. Ferrazoli, *Program Coordinator*
Ms. J. Forder, *Project Associate*
Ms. C. Griffith, *Administrative Assistant*
Ms. K. Hackett-Fields, *QA Specialist*
Dr. R. Herrick, *Manager, Ornamentals (Jan-July)*
Dr. R. Holm, *Executive Director*
Ms. D. Infante, *Research Assistant*
Dr. D. Kunkel, *Assistant Director Registrations*
Ms. E. Lovuolo, *Business Manager (retired November)*

ATTACHMENT 1 (Continued)

Ms. S. Nagahiro, *Department Administrator*
Ms. E. Nath, *Secretarial Assistant*
Dr. J. Norton, *Manager, Methyl Bromide Program*
Ms. S. Novack, *Communications and Publications Coordinator*
Dr. F. Salzman, *Coordinator*
Mr. K. Samoil, *Coordinator*
Ms. K. Sims, *Administrative Assistant*
Dr. V. Starner, *Coordinator*
Dr. D. Thompson, *Coordinator*
Ms. J. Thompson, *Principal Clerk*
Dr. E. Vea, *Manager, Data Mining Project*
Ms. T. White, *Quality Assurance Manager*

The National Headquarters is located at the Technology Centre of New Jersey, 681 U.S. Highway #1 South, North Brunswick, NJ 08902-3390; (732) 932-9575; FAX (732) 932-8481

Regional Technical Staff:

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

Consultants Committee:

Ms. P. Cimino, *EPA-OPP, Minor Use Team Leader*
Mr. G. Herndon, *EPA-OPP-HED*
Mr. E. Maurer, *CropLife America Representative*
Dr. B. Schneider, *EPA-OPP-HED*

Commodity Liaison Committee (CLC):

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. H. Ewart, <i>California Citrus Quality Council</i>	Auburn, CA
Mr. M. Fields, <i>Cranberry Institute</i>	East Wareham, MA
Dr. B. Flood, <i>DelMonte Foods</i>	Rochelle, IL
Ms. R. Freeman, <i>American Farm Bureau Federation</i>	Washington, DC
Ms. A. George, <i>Washington Hop Commission</i>	Moxee, WA
Mr. H. Giclas, <i>Western Growers Association</i>	Newport, CA
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

ATTACHMENT 1 (Continued)

Commodity Liaison Committee (CLC) (continued):

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. Teffeau, <i>American Nursery & Landscape Association</i>	Washington, DC
Mr. D. Trinka, <i>MBG Marketing</i>	Grand Junction, MI

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. S. Fernando	FL
Ms. R. Hornbuckle	USDA-ARS GA
Dr. M. Lugo	PR
Ms. M. Matthews	FL
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Northeastern Region

Ms. B. Anderson	NY
Consultants	
Ms. D. Johnston	DE
Dr. K. Kanagalingam	MD
Ms. E. Lopez	DE

Western Region

Dr. M. Beran	CA
Ms. J. Campbell	ID
Dr. J. Maitlen,	USDA-ARS WA (Jan-Jul)
Mr. J. McFarland	CA
Ms. D. Monter-Rodgers	WA
Ms. P. Yahata	HI (Jan-Feb)
Consultants	
Ms. B. Glazier	ID
Ms. T. Witter	NM

State and Federal IR-4 Liaison Representatives

Northcentral Region

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

Northeast Region

Dr. J. Allen	DC
Dr. R. Ashley	CT
Dr. F. Caruso	MA
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Dr. G. Ghidiu	NJ
Dr. G. Good	NY
Dr. A. Hazelrigg	VT
Dr. P. Heller	PA
Mr. W. Lord	NH
Ms. E. Lurvey	NY
Ms. E. Pfeil	USDA-ARS MD
Mr. W. Smith	NY
Dr. D. Wallace	RI
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

Ms. N. Acin	PR
Dr. R. Bellinger	SC
Dr. C. Collison	MS
Dr. S. Culpepper	GA
Dr. R. Davis	USDA-ARS GA
Mr. B. Fraelich	USDA-ARS GA
Dr. M. Grodner	LA
Dr. H. Harrison	USDA-ARS SC
Mr. T. Hendricks	USDA-ARS GA
Dr. J. Kemble	AL
Mr. C. Luper	OK
Mr. M. Matocha	TX
Dr. C. Meister	FL
Dr. D. Monks	NC
Dr. W. Nesmith	KY
Dr. A. Simmons	USDA-ARS SC
Dr. R. Talbert	AR
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Vacant	VI

Western Region

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Mr. J. Davison	NV
Dr. H. Deer	UT
Dr. M. Ferrell	WY
Dr. R. Hirnyck	ID
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Dr. M. Kawate	HI
Dr. P. Landolt	USDA-ARS WA
Dr. R. Linderman	USDA-ARS OR
Dr. S. McDonald	CO
Dr. R. Miller	GU
Dr. J. Palumbo	AZ
Dr. R. Petroff	MT
Dr. M. Renz	NM
Ms. R. Sisco	CA
Dr. D. Walsh	WA
Mr. T. Wixson	USDA-ARS WA

ATTACHMENT 2

FIELD AND LABORATORY RESEARCH COOPERATORS - 2004

The IR-4 Project is grateful to the many agricultural scientists who participated in the field and laboratory research phases of the program in 2004. 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. J. Baldock	WI	Dr. W. Jiang	MI
Dr. S. Chapman	WI	Ms. J. Knodel	ND
Mr. M. Ciernia	ND	Mr. C. Lee	ND
Dr. S. Clay	SD	Dr. R. Wilson	NE
Dr. J. Fleeker	ND	Mr. J. Wise	MI
Mr. D. Heider	WI	Dr. J. Wyman	WI
Dr. C. Hoy	OH	Dr. B. Zandstra	MI
Mr. B. Jenks	ND		

NORTHEAST REGION

Dr. R. Bellinder	NY	Ms. M. Ross	MD
Dr. F. Drummond	ME	Ms. H. Sandler	MA
Ms. E. Hitchner	NJ	Dr. D. Yarborough	ME
Dr. G. Jordan	NY	Ms. M. Zimmerman	NJ
Dr. P. Larsson-Kovach	NY		

SOUTHERN REGION

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

WESTERN REGION

Dr. D. Anderson	OR	Dr. Q. Li	HI
Dr. M. Bari	CA	Mr. S. Mangini	CA
Mr. B. Boutwell	CA	Mr. W. Meeks	ID
Mr. D. Cervantes	ID	Mr. M. Miller	CA
Mr. M. Craig	NM	Ms. M. Mitchell	CA
Mr. J. DeFrancesco	OR	Mr. C. Oman	CO
Mr. D. Ennes	CA	Ms. F. Patterson	CA
Mr. C. Farrar	CA	Mr. J. Roncoroni	CA
Dr. M. Hengel	CA	Mr. S. Scheufele	CA
Mr. P. Jones	CA	Mr. M. Straugh	CA
Dr. M. Kawate	HI	Dr. D. Stoffel	CA
Ms. G. Koskela	OR	Mr. R. Wight	WA

Attachment 2 (Continued)

USDA-ARS

Ms. S. Benzen	CA	Mr. D. McCommas	TX
Mr. B. Fraelich	GA	Ms. E. Pfeil	MD
Ms. M. Giovannini	OH	Mr. T. Treat	WA
Mr. T. Hendricks	GA	Mr. T. Wixson	WA

CANADA

Ms. C. Bastiani	QC	Mr. D. McArthur	QC
Ms. K. Bedford	BC	Mr. D. Pankhurst	MB
Ms. S. Bouffard	QC	Ms. J. Penner	ON
Ms. V. Brookes	BC	Mr. M. Pogoda	ON
Mr. J. Davis	ON	Mr. G. Riddle	ON
Mr. M. Harris	PE	Ms. K. Vander Wilp	ON
Mr. J. Jotcham	NS	Mr. B. Wright	BC
Mr. B. Kerr	ON		

2004 IR-4 Ornamental Horticulture Researchers

NORTHCENTRAL REGION

T.W. Davis	MI
M.K. Hausbeck	MI
M. Kline	OH, USDA-ARS
H.M. Mathers	OH
D.G. Nielsen	OH
D. Williams	OH, USDA-ARS

NORTHEAST REGION

T. Freiberger	NJ
J. Hammond	MD, USDA-ARS
K. Lehnert	MD, USDA-ARS
J.C. Locke	MD, USDA-ARS
T.L. Mervosh	CT
A.F. Senesac	NY

SOUTHERN REGION

D.M. Benson	NC
M.A. Czarnota	GA
J.F. Derr	VA
G.R. Fain	MS
C.H. Gilliam	AL
S. Ludwig	TX
J.C. Neal	NC
P. Norman	FL
M. Reddy	AL
P.B. Schultz	VA

WESTERN REGION

J. Altland	OR
B. Ambraz	CO
R. Boydston	WA, USDA-ARS
J.E. Klett	CO
H. Leith	CA
R.G. Linderman	OR, USDA-ARS
T.L. Treat	WA, USDA-ARS

ATTACHMENT 3

Food Use Research Projects - 2004

Residue Trials

CHEMICAL	COMMODITY	PR #	CHEMICAL	COMMODITY	PR #
• Acequinocyl	Bean (Snap)	8673	• Famoxadone + Cymoxanil	Celery (GH Transplant, Field)	8758
• Acetamiprid	Strawberry	9058	• Famoxadone + Cymoxanil	Lettuce (Leaf)	8499
• Azoxystrobin	Barley	9088	• Famoxadone + Cymoxanil	Onion (Dry Bulb & Green)	8303
• Bifenazate	Bean (Dry)	8929	• Famoxadone + Cymoxanil	Spinach	8308
• Bifenazate	Caneberry (Raspberry)	7053	• Fenpyroximate	Mint	A8452
• Bifenazate	Grasses	9037	• Fipronil	Broccoli	6884
• Bifenazate	Guava	8928	• Fipronil	Cabbage	6885
• Bifenazate	Lychee	8268	• Fipronil	Greens (Mustard)	6886
• Bifenazate	Tomato	A7266	• Fipronil	Pepper (Bell & Non- Bell)	8880
• Bifenthrin	Blueberry	8736	• Fluazinam	Blueberry	6129
• Bifenthrin	Celery	B4945	• Fluazinam	Broccoli	8795
• Bifenthrin	Spinach	8425	• Flucarbazone- Sodium	Grasses (Seed Crop)	9000
• Buprofezin	Coffee	8828	• Fludioxonil	Sweetpotato	8402
• Buprofezin	Olive	9015	• Flumioxazin	Bean (Dry)	9043
• Buprofezin	Pepper (Bell & Non- Bell)	8848	• Flumioxazin	Celery	8646
• Buprofezin	Strawberry	8737	• Flumioxazin	Squash	8318
• Carfentrazone- Ethyl	Onion (Dry Bulb)	9034	• Fluroxypyr	Mint	8569
• Chlorothalonil	Ginseng	A0988	• Halosulfuron	Potato	7281
• Chlorpyrifos	Sweetpotato	8293	• Hexythiazox	Potato	8829
• Clethodim	Artichoke	9013	• Imidacloprid	Lychee	6676
• Clethodim	Blueberry (Highbush)	5234	• Indoxacarb	Beet (Garden)	8870
• Clethodim	Peach	6875	• Indoxacarb	Cherry	7235
• Clothianidin	Peach	8544	• Iodomethane	Radish	8886
• CPPU (KT-30)	Blueberry	8313	• Iodomethane	Wheat	9118
• Cyazofamid	Carrot	8522	• Mefenoxam + Copper	Spinach	8431
• Cyfluthrin	Flax	9026	• Mesotrione	Cranberry	8903
• Cyprodinil	Kiwifruit	8972	• Methoxyfenozide	Avocado	7060
• Cyprodinil + Fludioxonil	Celery (GH Transplant, Field)	8758	• Methoxyfenozide	Guava	7064
• Cyprodinil + Fludioxonil	Lemon	8297	• Methoxyfenozide	Onion (Green)	9067
• Cyprodinil + Fludioxonil	Radish	9019	• Novaluron	Greens (Mustard)	8420
• Cyprodinil + Fludioxonil	Vegetables (Brassica)	9126	• Novaluron	Tomato (Field & GH)	8419
• Diflubenzuron	Alfalfa	8678	• Oxyfluorfen	Broccoli	8806
• Dimethomorph	Ginseng	8958	• Oxyfluorfen	Cabbage	A5255
• Etoxazole	Cantaloupe	9018	• Oxyfluorfen	Cantaloupe	B3710
• Etoxazole	Cherry	9044	• Oxyfluorfen	Clover (Seed)	A2738
• Etridiazole	Cucumber (GH)	8854	• Oxyfluorfen	Cucumber	A3711
• Etridiazole	Pepper (Bell & Non- Bell) (GH)	9038	• Oxyfluorfen	Pepper (Chili)	A2125
			• Oxyfluorfen	Squash (Summer)	A3712
			• Oxyfluorfen	Ti Palm	7377

ATTACHMENT 3 (continued)

Residue Trials (continued)

• Prometryn	Cilantro	8996	• Sulfentrazone	Pepper (Bell & Non-Bell)	8048
• Pyraclostrobin	Barley	9089	• Sulfentrazone	Tomato	7957
• Pyridalyl	Greens (Mustard)	8594	• Sulfentrazone	Turnip (Roots & Tops)	7915
• Pyrimethanil	Lemon	9085	• Terbacil	Peach	9017
• Pyrimethanil	Peach	8700	• Terbacil	Strawberry (Annual)	A8959
• Pyrimethanil	Plum	8702	• Thiophanate Methyl	Citrus	8294
• Quinoxifen	Artichoke	8817	• Triflumizole	Greens (Mustard)	8865
• S-Metolachlor	Blueberry	B2616	• Triflumizole	Pineapple	8830
• S-Metolachlor	Carrot	8981	• Zeta-Cypermethrin	Barley	8812
• S-Metolachlor	Greens (Mustard)	2255			
• Spinosad	Almond	8739			
• Spinosad	Caneberry	9123			
• Spirodiclofen	Hops	8968			

ATTACHMENT 4

New Tolerances and Approvals - 2004

Product Type	Product	Crop	<u>Approval Type</u>	PR#	No. Uses	Tolerances
			<u>Exemption</u>			
Fungicide						
	Yeast hydrolysate					
		All food commodities (Citrus and tomato)			15	1
	AF36					
		Cotton (Registration in CA)			1	
	<i>Bacillus subtilis</i> QST713					
		Lima Bean			1	
		Squash	292B		1	
		Tomato	311B		1	
	<i>Bacillus pumilis</i> QST2808					
		Bean, snap	301B		1	1
		Bean, lima	307B		1	
		Potato	298B		1	
		Pumpkin	314B		1	
		Tomato	315B		1	
Total					24	2

Permanent

Fungicide

Cyprodinil

Almond Hulls	08481	1	1
Bean, dry	07782	22	1
Bean, succulent	07614	13	1
	07783	1	1
Leafy greens subgroup 4A (except spinach)		27	1

Fludioxonil

Yam, true	08107		1
Leafy greens subgroup 4A (except spinach)		27	1
Bean, dry		22	1
Bean, succulent		14	1
Melon subgroup 9A		1	1
Cantaloupe	07618	1	

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	<u>Approval Type</u>	PR#	No. Uses	Tolerances
	<i>Fludioxonil (continued)</i>					
	Watermelon			07619	1	
	Fruit, citrus, group 10				14	1
	Grapefruit, oil					1
	Fruit, pome, group 11				5	1
	Apple			07568	1	
	Pear			07569	1	
	Kiwifruit			07639	1	1
	<i>Folpet</i>					
	Hops			06947	1	1
	<i>Pyraclostrobin</i>					
	Vegetable, leaves of root and tuber, except sugar beet, group 2			07594	16	1
	Vegetable, leafy, except Brassica, group 4			07640	28	1
	Brassica, head and stem, subgroup 5A			07493	11	1
				07494	1	
	Brassica, leafy greens, subgroup 5B				8	1
	Field corn				1	4
	Popcorn (grain, stover)				1	2
	Sweet corn				1	3
	Fruit, pome, group 11				7	1
	Hops				1	1
	Legume, forage, except peanut and soybean					1
	Vegetable, legume, edible podded, subgroup 6A				12	1
	Succulent pea				7	1
	Pea and bean, dried shelled, except soybean, subgroup 6C				24	1
	Soybean				1	4
	Apple, wet pomace					1
	Peppermint				1	1
	Spearmint				1	1
	Sunflower				1	1
Total: Fungicide					275	42

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	<u>Approval Type</u>	PR#	No. Uses	Tolerances
Herbicide						
	<i>Carfentrazone-ethyl</i>					
	Vegetable, root and tuber, group 1				35	1
	Carrot			08630	1	
	Radish			08631	1	
	Horseradish					1
	Vegetable, leaves of root and tuber, group 2				16	1
	Vegetable, bulb, group 3				9	1
	Onion, dry bulb			08519	1	
	Onion, green			08520	1	
	Vegetable, leafy, except Brassica, group 4				24	1
	Lettuce (head and leaf)			08517	2	
	Parsley			08529	1	
	Celery			08648	1	
	Vegetable, Brassica, leafy, group 5				16	1
	Broccoli			08650	1	
	Cabbage			07445	1	
	Cabbage			08651		
	Cauliflower			08649	1	
	Vegetable, legume, group 6				38	1
	Snap bean			08559	1	
	Edible podded pea			08518	1	
	Southern pea			08805	1	
	Pea, dry			07163	1	
	Vegetable, foliage of legume, except. soybean, group 7					1
	Vegetable, fruiting, group 8				5	1
	Eggplant			07961	1	
	Pepper, bell and non-bell			07959	2	
	Tomato			07960	1	
	Okra			08423	1	1
	Vegetable, cucurbit, group 9				11	1
	Cucumber			08510	1	
	Pumpkin			08512	1	
	Squash, summer			08511	1	
	Fruit, citrus, group 10				13	1
	Grapefruit			08475	1	
	Fruit, pome, group 11				7	1
	Fruit, stone, group 12				11	1
	Berry group 13				9	1

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	<u>Approval Type</u>	PR#	No. Uses	Tolerances
	<i>Carfentrazone-ethyl (continued)</i>					
	Strawberry			07972	1	1
	Grape				1	1
	Nut, tree, group 14				12	1
	Almond, hull					1
	Pistachio				1	1
	Grass, forage			08906	112	1
	Grass, hay					1
	Sorghum, sweet			08319	1	1
	Herb and spice group 19				68	1
	Cilantro			08530	1	
	Dill			08531	1	
	Canola			08562	1	1
	Hop, dried cones			07596	1	1
	Peanut and Peanut, hay				1	2
	Sugarcane			08632	1	1
	Sunflower, seed			08478	1	1
	Stevia				1	1
	Coconut				1	1
	Strawberrypear				1	1
	Date				1	1
	Fig				1	1
	Papaya			08477	1	1
	Avocado			08476	1	1
	Sapote, black				1	1
	Canistel				1	1
	Sapote, mamey				1	1
	Mango				1	1
	Sapodilla				1	1
	Star apple				1	1
	Pumello				1	1
	Guava			08474	1	1
	Feijoa				1	1
	Jaboticaba				1	1
	Wax jambu				1	1
	Starfruit				1	1
	Passionfruit				1	1
	Acerola				1	1
	Lychee			08472	1	1
	Longan				1	1
	Spanish lime				1	1
	Rambutan				1	1
	Pulasan				1	1
	Sugar apple			08473	1	1
	Atemoya				1	1
	Custard apple				1	1
	Cherimoya				1	1

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	<u>Approval Type</u>	PR#	No. Uses	Tolerances
	<i>Carfentrazone-ethyl (continued)</i>					
		Ilama			1	1
		Soursop			1	1
		Biriba			1	1
		Lingonberry			1	1
		Juneberry			1	1
		Salal			1	1
		Kiwifruit			1	1
		Pomegranate			1	1
		Persimmon			1	1
		Pawpaw			1	1
		Palm heart and Palm heart, leaves			1	2
		Kava kava			1	1
		Ti, leaves, and T, roots			1	2
		Wasabi, roots			1	1
		Cactus			1	1
		Rapeseed, seed, and Rapeseed, forage			1	2
		Mustard, seed			1	1
		Flax, seed			1	1
		Safflower, seed			1	1
		Crambe, seed			1	1
		Borage			1	1
		Olive			1	1
		Banana			1	1
		Cacao			1	1
		Tea			1	1
		Mulberry, Indian			1	1
		Vanilla			1	1
		Coffee			1	1
	<i>DCPA</i>					
		Basil, fresh and dried leaves		08334	1	2
		Celeriac			1	1
		Chicory, roots and tops			1	2
		Chive		03541	1	1
		Coriander, leaves		02999	1	1
		Dill		03610	1	1
		Ginseng		06262	1	1
		Marjoram		01627	1	1
		Parsley, fresh and dried leaves		04005	1	2
		Radicchio			1	1
		Radish, oriental		02692	1	1

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	<u>Approval Type</u>	PR#	No. Uses	Tolerances
	<i>Dimethenamid</i>					
		Vegetable, tuberous and corm, subgroup 1C			17	1
		Sugar beet		07702	1	1
		Garden beet		06662	1	1
		Horseradish		07942	1	1
		Onion, dry bulb		06337	1	1
		Garlic			1	1
		Shallot, dry bulb			1	1
	<i>Flumioxazin</i>					
		Grape		08588	1	1
		Almond			1	2
		Pistachio		08669	1	1
		Sugarcane			1	1
		Mint		08075	2	2
		Onion, dry bulb		07389	1	1
		Garlic, bulb			1	1
		Shallot, bulb			1	1
		Vegetable, tuberous/corm subgroup 1C		07964	15	1
		Sweetpotato		08710	1	
Total: Herbicides					538	123
Insecticide/Acaricide						
	<i>Fenpyroximate</i>					
		Fruit, pome, group 11		08346	7	1
	<i>Imidacloprid</i>					
		Blueberry		06122	1	1
		Blueberry		06700		
		Blueberry		06817		
	<i>Methoxyfenozide</i>					
		Vegetable, root, subgroup 1A			14	1
		Carrot		07520	1	
		Radish		07521	1	
		Beet, sugar		07522	1	
		Celeriac		08027	1	
		Beet, garden		08871	1	
		Vegetable, leaves of root and tuber, group 2			15	1
		Turnip greens		07438	1	

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	Approval Type	PR#	No. Uses	Tolerances
<i>Methoxyfenozide (Continued)</i>						
	Vegetable, legume, edible podded, subgroup 6A				10	1
	Edible podded pea			07529	1	
	Snap bean			07532	1	
	Pea and bean, succulent shelled, subgroup 6B				10	1
	Succulent, shelled pea			07528	1	
	Succulent, shelled bean			07531	1	
	Vegetable, foliage of legume except soybean, subgroup 7A					1
	Strawberry			06768	1	1
	Coriander, leaves (Cilantro)			08389	1	1
	Mint			07755	1	2
	Sapote, black				1	1
	Canistel				1	1
	Sapote, mamey				1	1
	Mango			07062	1	1
	Papaya			07063	1	1
	Sapodilla			08615	1	1
<i>Sulfuryl Fluoride</i>						
	Tree Nuts (includes pistachio)			06913	13	4
	Dried Fruit: Stone Fruit			06912	11	1
	Pome Fruit				7	1
	Grape, Raisin				1	1
	Date				1	
	Fig				1	
<i>Spiroxamine</i>						
	Hops			06946	1	1
<i>Tebufenozide</i>						
	Vegetable, tuberous/corm, except potato, subgroup 1D				15	1
	Sweetpotato			06512	1	
	Fruit, citrus, group 10				14	1
	Citrus, oil					1
	Grape			06763	1	1
<i>Inadvertant residues on:</i>						
	Vegetable, foliage of legume, group 7					1
	Grain, cereal, forage, fodder and straw, group				16	1
	Grass, forage, fodder and hay, group 17					1
Total: Insecticides					142	32

ATTACHMENT 4 (Continued)

Product Type	Product	Crop	Approval Type	PR#	No. Uses	Tolerances
						<u>Time Limited Tolerances (TLT's)</u>
Fungicide						
	<i>Azoxystrobin</i>					
		Safflower		08656	1	1
	<i>Fenbuconazole</i>					
		Blueberry		06368	1	1
	<i>Mancozeb</i>					
		Ginseng		00992	1	1
	<i>Myclobutanil</i>					
		Sugar Beet		07998	1	1
	<i>Propiconazole</i>					
		Pineapple		06585	1	1
	<i>Thiabendazole</i>					
		Lentil		06531	1	1
	<i>Thiophanate-methyl</i>					
		Blueberry		08309	1	1
		Fruit, citrus, group 10		08294	14	1
		Mushroom		06708	1	1
Total:	Fungicide	Section 18	TLT's		22	9
Herbicide						
	<i>Desmedipham</i>					
		Garden beet		00337, 05265	1	1
	<i>Mesotrione</i>					
		Cranberry		08903	1	1
	<i>S-Metolachlor</i>					
		Sweet Potato		05413	1	1
	<i>Sulfentrazone</i>					
		Flax		07584	1	1
		Strawberry		07044	1	1
Total:	Herbicide	Section 18	TLT's		5	5

ATTACHMENT 5

Table 1. Expansion of the Crop Group 3, Bulb Vegetables

Existing Crop Group		Updated Crop Group	
#s¹	Commodities²	#s	Commodities
1	Garlic	1	Garlic
2	Great-headed garlic,	2	Great-headed garlic,
3	Leek	3	Leek
4	Dry bulb onion	4	Dry bulb onion
5	Green onion	5	Green onion
6	Welsh onion	6	Welsh onion
7	Shallot	7	Shallot
		8	Canadian garlic
		9	Chive
		10	Chinese chive
		11	Daylily
		12	Elegans hosta
		13	Fritillaria spp.
		14	Kurrat
		15	Lady's leek
		16	Lily
		17	Beltsville bunching onion
		18	Chinese onion
		19	Fresh onion
		20	Macrostem onion
		21	Pearl onion
		22	Potato onion
		23	Serpent garlic
		24	Tree onion
		25	Wild leek

¹ Commodities are numbers alphabetically in this table for reading convenience.

² Commodity names used in this table are one of the common names for each commodity.

Table 2. 2005 Tentative Work Plan

Products/Activities	Target Date
Submit bulb vegetable crop group proposal data package to EPA	Jan 05
Prepare monographs and petition packages for small fruit (13)	Feb – Mar 05
Prepare monographs and petition packages for fruiting vegetables (8)	Apr – May 05
Prepare monographs and petition packages for legume vegetables (6, 7)	Jun – Jul 05
Prepare monographs and petition packages for citrus fruits (10)	Aug – Sept 05
Prepare monographs and petition packages for root/tuber vegetables (1, 2)	Oct – Nov 05
Prepare monographs and petition packages for Brassica leafy vegetables (5)	Dec 05 – Jan 06

Attachment 6
Data Packages Completed in 2004

Product	Crop	PR Number	Reg Type
2,4-D	Potato	1029	Registration Amendment
Acetamiprid	Tomato (GH)	8354	Registration Amendment
<i>Aspergillus flavus</i>	Cotton	52B	State Registration
AVACHEM OCTA SP 50%	All RACs	363B	New
Azoxystrobin	Chives	7105	New
	Parsley	7111	State Registration
Bifenthrin	Cilantro	7557	New
	Pistachio	9219	New
Carfentrazone	Avocado	8476	New
	Bean	8559	New
	Broccoli	8650	New
	Cabbage	7445	New
	Canola	8562	New
	Cauliflower	8649	New
	Celery	8648	New
	Cilantro	8530	New
	Cucumber	8510	New
	Dill	8531	New
	Eggplant	7961	New
	Grapefruit	8475	New
	Grasses	8906	New
	Guava	8474	New
	Guayule	8679	New
	Hops	7596	New
	Lettuce	8517	New
	Lychee	8472	New
	Okra	8423	New
	Onion (bulb)	8519	New
	Onion (green)	8520	New
	Papaya	8477	New
	Parsley	8529	New
	Pea	8518	New
	Pea (dry)	7163	New
	Pea (southern)	8805	New
	Pepper	7959	New
	Pumpkin	8512	New
	Radish	8631	New
	Squash	8511	New
	Strawberry	7972	New
	Sugar apple	8473	New
	Sugarcane	8632	New
	Sunflower	8478	New
	Super crop group		New
	Sweet Sorghum	8319	New
	Tomato	7960	New
	Tropical tree fruit	8472	New

Attachment 6 (continued)

Product	Crop	PR Number	Reg Type
Clethodim	Asparagus	5427	New
	Basil	5759	New
	Bean(lima)	5206	New
	Bean(snap)	5205	New
	Chives	6246	New
	Endive	5221	New
	Hops	8086	New
	Lettuce (head)	7694	New
	Lettuce (leaf)	A5224	New
	Lettuce, head	5223	New
	Parsley	6136	New
	Pea (dry)	5204	New
	Pea (succulent)	A5202	New
	Safflower	8591	New
Sesame	7756	New	
Clofentezine	Persimmon	6601	New
Cyprodinil	Onion	A5033	Conditional
	Strawberry	A6790	Conditional
Cyromazine	Bean (lima)	3908	New
Dimethenamid	Onion (green)	7699	New
Dimethoate	Pea (succulent)	A6693	Registration Amendment
Dimethomorph	Brassica Leafy Vegetables	7620	New
	Broccoli	7199	New
	Cabbage	7248	New
Ethephon	Filbert	4462	New
Fenhexamid	Cilantro	7402	New
	Ginseng	7846	New
	Pepper	7264	Registration Amendment
	Pomegranate	8007	New
Fenpropathrin	Cherry	8016	New
	Peach	8962	New
	Plum	8963	New
Fludioxonil	Onion	A5033	Conditional
Flumioxazin	Strawberry	8063	New
Glyphosate	Safflower	6162	New
	Sunflower	6164	New

Attachment 6 (continued)

Product	Crop	PR Number	Reg Type
Imidacloprid	Avocado	7099	Registration Amendment
MCPA	Flax	5000	ReRegistration
Novaluron	Broccoli	9042	New
	Cabbage	9041	New
	Cauliflower	9051	New
Pendimethalin	Carrot	A4084	New
	Carrot	B4084	New
Phenmedipham	Spinach	5693	Registration Amendment
Pronamide	Pea (Austrian)	A6693	ReRegistration
Pyriproxyfen	Grape	7232	New
	Strawberry	8106	New
	Tomato (GH)	A7412	New
Quinoxifen	Strawberry	8382	New
Sethoxydim	Borage	7208	New
	Buckwheat	A1348	New
	Celery	5702	Registration Amendment
	Dill	7297	New
	Mustard (greens)	6291	Registration Amendment
	Okra	A2339	New
	Radish	A2469	New
Sorbitol Octanoate	All RACs	187B	New
Spinosad	Corn (field and Sweet)	8942	New
	Grasses	8040	New
	Grasses, pasture	7955	New
	Grasses, pasture	7401	New
	Sorgum		New
Thiamethoxam	Carrot	7468	New
	Radish	7677	New
Trifloxystrobin	Oats	9091	New

ATTACHMENT 7

Regulatory Documents in Preparation

CHEMICAL	COMMODITY	PR#	CHEMICAL	COMMODITY	PR#
• 2,4-D	Current	3087	• Buprofezin	Peach	7324
• Abamectin	Acerola	7836	• Buprofezin	Plum	7519
• Abamectin	Bean (Aduzuki)	6594	• Buprofezin	Plum	7325
• Abamectin	Bean (Dry)	5001	• Buprofezin	Stonefruit	7303
• Abamectin	Bean (Lima)	7271	• Captan	Lettuce	8447
• Abamectin	Bean (Snap)	5478	• Captan	Pistachio	8507
• Abamectin	Caneberry	6475	• Captan	Tomato	8448
• Abamectin	Carambola	7819	• Captan	Transplants	8370
• Abamectin	Chives	7102	• Chlorimuron-ethyl	Cranberry	3023
• Abamectin	Guava	6435	• Chlorothalonil	Eggplant	1154
• Abamectin	Jaboticaba	7832	• Chlorothalonil	Horseradish	2392
• Abamectin	Lychee	7831	• Chlorothalonil	Kohlrabi	3169
• Abamectin	Onion (Dry Bulb)	7237	• Chlorothalonil	Pepper (Non-Bell)	571
• Abamectin	Onion (Green)	4068	• Chlorothalonil	Pepper (Bell)	32
• Abamectin	Papaya	4078	• Chlorothalonil	Persimmon	5388
• Abamectin	Passion Fruit	7835	• Chlorothalonil	Rhubarb	5410
• Abamectin	Pineapple	8439	• Chlorothalonil	Tomato Transplants	6416
• Abamectin	Wax Jambu	7833	• Chlorpyrifos	Apple	8015
• Acephate	Lettuce	594	• Clethodim	Caneberry	6060
• Acifluorfen	Bean (Lima)	6300	• Clethodim	Grass	8836
• AVG	Cherry	8052	• Clomazone	Broccoli	A3569
• AVG	Peach	8053	• Clomazone	Rhubarb	8724
• AVG	Plum	8054	• Clopyralid	Apple	3623
• Azoxystrobin	Citrus	7593	• Clopyralid	Blueberry	5433
• Bifenazate	Bean (Succulent)	8275	• Clopyralid	Flax	7223
• Bifenazate	Cassava	8277	• Clopyralid	Peach	3621
• Bifenazate	Papaya	8270	• Clopyralid	Pear	3624
• Bifenazate	Pea (Succulent)	8276	• Clopyralid	Plum	3625
• Bifenazate	Potato	8278	• Clopyralid	Strawberry	8021
• Bifenazate	Sweetpotato	8279	• Clopyralid	Swiss Chard	5435
• Bifenthrin	Beet	7556	• Cyazofamid	Grape	8773
• Bifenthrin	Carrot	7089	• Cyfluthrin + Tebupirimphos	Potato	7665
• Bifenthrin	Mayhaw	7513	• Cyfluthrin + Tebupirimphos	Sweetpotato	7664
• Bifenthrin	Peanut	8584	• Cyhalofop	Wild Rice	8951
• Boscalid	Radicchio	9302	• Cyprodinil + Fludioxonil	Garlic	9386
• Boscalid + Pyraclostrobin	Avocado	8446	• Cyprodinil + Fludioxonil	Tomato	8124
• Boscalid + Pyraclostrobin	Basil	8793	• Cyromazine	Bean (Snap)	B3909
• Boscalid + Pyraclostrobin	Chives	8793	• Cyromazine	Bean (Snap)	8013
• Boscalid + Pyraclostrobin	Dill	8691	• DCPA	Carrot	8332
• Boscalid + Pyraclostrobin	Endive (Belgian)	8662	• Deltamethrin	Flax	7666
• Boscalid + Pyraclostrobin	Rosemary	8794	• Desmedipham	Beet (Garden)	337
• Boscalid + Pyraclostrobin	Stone Fruit (PH)	7922	• Desmedipham	Spinach	1922
• Boscalid + Pyraclostrobin	Tomato (GH)	8374	• Dicofol	Caneberry	4102
• Bromoxynil	Leek	6058	• Difenconazole	Arracacha	8347
• Bromoxynil	Timothy Grass	8493	• Difenconazole	Mustard Seed/Rape	
• Buprofezin	Cherry	7250	• Difenconazole	Sweetpotato	8364
• Buprofezin	Mango	6976	• Difenconazole	Yam	6958
• Buprofezin	Papaya	7024	• Diflubenzuron	Barley/Wheat	8024
			• Diflubenzuron	Eggplant	5526
			• Diflubenzuron	Mustard Greens	8031
			• Diflubenzuron	Okra	8910

Attachment 7 (continued)

CHEMICAL	COMMODITY	PR#
• Diflubenzuron	Peanut	7737
• Diflubenzuron	Turnip Greens	8028
• Dimethenamid	Hops	6794
• Dimethenamid	Radish	7695
• Dimethenamid	Rutabaga	7697
• Dimethenamid	Squash	6596
• Dimethenamid	Turnip	7696
• Dimethomorph	Bean (Lima)	7261
• Dimethomorph	Grape	6794
• Ethalfluralin	Kenaf	4858
• Ethofumesate	Onion	5398
• Ethoprop	Carrot	5490
• Ethoprop	Pepper	5323
• Ethoprop	Radish	5731
• Etoxazole	Hops	8873
• Etoxazole	Mint	8816
• Famoxadone + Cymoxanil	Grape	8774
• Famoxadone + Cymoxanil	Hops	7796
• Famoxadone + Cymoxanil	Onion	8303
• Fenamidone	Grape	8164
• Fenamidone	Sunflower	7999
• Fenarimol	Hops	6940
• Fenbuconazole	Pepper	6372
• Fenhexamid	Caneberry	6840
• Fenoxaprop Ethyl	Grasses	6220
• Fenpyroximate	Grapefruit	9129
• Fenpyroximate	Hops	9129
• Fenpyroximate	Lemon	9128
• Fenpyroximate	Mint	8452
• Fenpyroximate	Orange	9130
• Fenpyroximate	Pecan	8815
• Fenpyroximate	Tangerine	9131
• Ferbam	Caneberry	B4981
• Ferbam	Cherry	4085
• Fipronil	Plantain	6712
• Fipronil	Popcorn	8424
• Flonicamid	Hops	8706
• Fluazinam	Bean (Dry)	6369
• Flufenacet	Popcorn	8695
• Flufenacet	Potato	8326
• Flumioxazin	Bean	8058
• Flumioxazin	Garlic	8055
• Flumioxazin	Tomato	8320
• Fluroxypyr	Apple	7706
• Fluroxypyr	Pear	7707
• Foramsulfuron	Corn (Sweet, Pop)	8970
• Glufosinate	Corn (Sweet)	6953
• Glufosinate	Corn (Sweet)	6515
• Glufosinate	Pistachio	8665
• Glyphosate	Canarygrass	6112
• Glyphosate	Flax	6156
• Glyphosate	Horseradish	A6704
• Glyphosate	Indian Mulberry	8853
• Glyphosate	Lettuce (Head)	7547

CHEMICAL	COMMODITY	PR#
• Glyphosate	Lettuce (Leaf)	7229
• Glyphosate	Mustard Seed	8672
• Glyphosate	Pea (Dry)	6139
• Glyphosate	Pea (Pigeon)	2029
• Glyphosate	Strawberry	1409
• Hexakis	Pistachio	6617
• Imidacloprid	Banana	7333
• Imidacloprid	Basil	6258
• Imidacloprid	Chives	6259
• Imidacloprid	Kava	8455
• Imidacloprid	Peanut	6587
• Imidacloprid	Pistachio/Tree Nut	9220
• Imidacloprid	Pomegranate	8254
• Indoxacarb	Cantaloup	8339
• Indoxacarb	Celery	9087
• Indoxacarb	Cherry	7235
• Indoxacarb	Cranberry	8127
• Indoxacarb	Cucumber	6985
• Indoxacarb	Mayhaw	8740
• Indoxacarb	Mint	8418
• Indoxacarb	Okra	8633
• Indoxacarb	Pea (Southern)	6984
• Indoxacarb	Peach	7228
• Indoxacarb	Plum	7234
• Indoxacarb	Spinach	8341
• Indoxacarb	Squash	8340
• Indoxacarb	Sweetpotato	8611
• Lactofen	Pepper	4400
• Lactofen	Tomato	4163
• Linuron	Celery	3557
• Linuron	Celery	4936
• Linuron	Coriander	1625
• Linuron	Dill	1432
• Linuron	Fennel	3608
• Linuron	Parsley	3035
• Mancozeb	Grape	8949
• MBTA-HCL	Grapefruit	7785
• MCPB	Mint	4757
• Mefenoxam	Bean (Snap)	8371
• Mefenoxam	Kiwi	B3050
• Mefenoxam	Mustard Seed/Rape	
• Mefenoxam	Papaya	8449
• Mefenoxam + Cu	Bean (Lima)	6776
• Mefenoxam + Cu	Bean (Snap)	8430
• Mefenoxam + Cu	Caneberry	A1169
• Methoxyfenozide	Bean (Dry)	7530
• Methoxyfenozide	Blueberry	7671
• Metribuzin	Pea (Succulent)	6388
• Metribuzin	Tanier	6459
• Milbemectin	Avocado	8281
• Milbemectin	Eggplant	8398
• Milbemectin	Hops	8450
• Milbemectin	Lychee	8438
• Myclobutanil	Cilantro	7878
• Myclobutanil	Lettuce	7577
• Myclobutanil	Okra	6857
• Myclobutanil	Pepper	6070
• NAA	Almond	3524

Attachment 7 (continued)

CHEMICAL	COMMODITY	PR#	CHEMICAL	COMMODITY	PR#
• NAA	Grapefruit	7578	• Pronamide	Radicchio	4601
• NAA	Plum	3523	• Pronamide	Safflower	5456
• NAA	Pomegranate	5389	• Propiconazole	Beet (Garden)	6352
• NAA	Rambutan	8666	• Propiconazole	Parsley	6351
• NAA	Walnut	3525	• Propiconazole	Pineapple	6585
• Oxyfluorfen	Banana	6697	• Propiconazole	Turnip (Roots & Tops)	6237
• Oxyfluorfen	Blueberry	2133			
• Oxyfluorfen	Brussels Sprout	5123	• Propylene Oxide	Fig	7887
• Oxyfluorfen	Caneberry	3616	• Propylene Oxide	Prune	7786
• Oxyfluorfen	Citrus	7801	• Propylene Oxide	Raisin	7897
• Oxyfluorfen	Eggplant	4134	• Pyraclostrobin	Celery	7642
• Oxyfluorfen	Kenaf	6318	• Pyraclostrobin	Spinach	7643
• Oxyfluorfen	Mint	6699	• Pyraclostrobin	Avocado	8446
• Oxyfluorfen	Pejibaye	6606	(+ Boscalid)		
• Oxyfluorfen	Pepper	4133	• Pyraclostrobin	Basil	8793
• Oxyfluorfen	Rhubarb	6592	(+ Boscalid)		
• Oxyfluorfen	Safflower	5454	• Pyraclostrobin	Endive (Belgian)	8662
• Oxyfluorfen	Sweetpotato	3939	(+ Boscalid)		
• Paraquat	Broccoli	1475	• Pyraclostrobin	Rosemary	8794
• Paraquat	Cabbage	1479	(+ Boscalid)		
• Paraquat	Pea (Succulent)	5193	• Pyraclostrobin	Stone Fruit (PH)	7922
• Paraquat	Safflower	2939	(+ Boscalid)		
• PCNB	Turnip	836	• Pyridaben	Cucumber (GH)	8036
• Pendimethalin	Artichoke	6623	• Pyridalyl	Tomato	8745
• Pendimethalin	Asparagus	6660	• Quinoxifen	Cantaloup	7252
• Pendimethalin	Barley	9362	• Quinoxifen	Lettuce	8367
• Pendimethalin	Broccoli	6505	• Quizalofop	Mustard Seed	7340
• Pendimethalin	Brussels Sprout	6506	• Quizalofop	Pineapple	5174
• Pendimethalin	Cabbage	6387	• Sethoxydim	Celery	5702
• Pendimethalin	Cabbage (Bok Choy)	6773	• Sethoxydim	Date	3702
• Pendimethalin	Cabbage (Chinese)	6507	• Sethoxydim	Kenaf	6319
• Pendimethalin	Cauliflower	6504	• Sethoxydim	Mint	7382
• Pendimethalin	Collard	1988	• Sethoxydim	Mustard Greens	6291
• Pendimethalin	Fig	6607	• Sethoxydim	Pepper	7722
• Pendimethalin	Grape	5740	• Sethoxydim	Pomegranate	3708
• Pendimethalin	Grass (Seed Crop)	4912	• S-Metolachlor	Caneberry	3497
• Pendimethalin	Kenaf	5208	• S-Metolachlor	Sesame	6516
• Pendimethalin	Kiwi	6681	• S-Metolachlor	Squash (Winter)	6630
• Pendimethalin	Mustard Greens	1986	• Sodium	Pear	6621
• Pendimethalin	Onion (Green)	5097	tetrathiocarbonate		
• Pendimethalin	Strawberry	2739	• Spinosad	Dill Seed	7361
• Pendimethalin	Turnip	1987	• Spinosad	Mint	7275
• Permethrin	Turnip	8296	• Spiromesifen	Tomato (GH)	8998
• Pirimiphos-methyl	Sunflower	8813	• Sulfentrazone	Brassicas	9355
• Prometryn	Carrot	1682	• Sulfentrazone	Broccoli	7724
• Prometryn	Celeriac	3567	• Sulfentrazone	Cantaloup	8445
• Prometryn	Dill	1630/3040	• Sulfentrazone	Flax	7584
• Prometryn	Parsley	3618/5160	• Sulfentrazone	Muskmelon	7911
• Pronamide	Blackberry	A3201	• Sulfentrazone	Mustard Greens	7581
• Pronamide	Caneberry	3593/3201	• Sulfentrazone	Watermelon	7917/8049
• Pronamide	Chicory	6729	• Tebuconazole	Asparagus	7991
• Pronamide	Chicory	6474	• Tebuconazole	Beet (Garden)	6353
• Pronamide	Chicory (Tops)	5027	• Tebuconazole	Collard	6232
• Pronamide	Cranberry	3152	• Tebuconazole	Garlic	7197
• Pronamide	Dandelion	A3488	• Tebuconazole	Garlic	8365
• Pronamide	Grasses (Pasture)	2297	• Tebuconazole	Kale	6510
• Pronamide	Grasses (Orchard)	5109	• Tebuconazole	Mustard (Greens)	6233
			• Tebuconazole	Onion (Dry Bulb)	7194

Attachment 7 (continued)

CHEMICAL	COMMODITY	PR#
• Tebuconazole	Onion (Green)	7245
• Tebuconazole	Squash (Winter)	6322
• Thiacloprid	Blueberry	7813
• Thiamethoxam	Artichoke	8282
• Thiamethoxam	Barley	7746
• Thiamethoxam	Caneberry	8039
• Thiamethoxam	Hops	8541
• Thifensulfuron-methyl	Safflower	A3454
• Thiophanate-methyl	Blueberry	8309
• Thiophanate-methyl	Caneberry	5039
• Thiophanate-methyl	Mushroom	8289
• Thiophanate-methyl	Mustard Seed	8789
• Thiophanate-methyl	Pistachio/Almond	8486

CHEMICAL	COMMODITY	PR#
• Thiophanate-methyl	Sunflower/Mustard Seed	5352
• Thiophanate-methyl	Sweetpotato	9294
• Thiophanate-methyl	Tomato	8506
• Thymol	Honey	8661
• Trifloxystrobin	Asparagus	8212
• Trifloxystrobin	Radish	8363
• Triflumizole	Cantaloup	9343
• Uniconazole	Pepper (Bell)	4595
• Uniconazole	Tomato	4597
• Zeta-Cypermethrin	Grapefruit	8215
• Zeta-Cypermethrin	Lemon	8214
• Zeta-Cypermethrin	Orange	8216
• Zeta-Cypermethrin	Wild Rice	9125
• Ziram	Caneberry	4118

Attachment 8

Ornamental Pest Control Clearances - 2004

Pest Control Agent	Commodity	PR#	Pest Control Agent	Commodity	PR#
• 2,4-D	Big Blue Stern (<i>Andropogon gerardii</i>)	12292A	Biophos Fungicide	Holly, Japanese (<i>Ilex crenata</i>)	23472A
• 2,4-D	Blue Fescue (<i>Festuca cinerea</i>)	12290A	• Biophos Fungicide	Maple (Acer)	23463A
• 2,4-D	Chinese Pennisetum (<i>Pennisetum alopecuroides</i>)	12286A	• Biophos Fungicide	Maple (Acer)	23475A
• 2,4-D	Little Blue Stern (<i>Schizachyrium scoparium</i>)	12299A	• Biophos Fungicide	Rhododendron	23454A
• 2,4-D	Maiden Grass (<i>Miscanthus</i>)	12289A	• Biophos Fungicide	Rhododendron	23466A
• 2,4-D	Moor Grass (<i>Molinia caerulea</i>)	12296A	• Biophos Fungicide	Rose (Rosa)	23455A
• 2,4-D	Northern Sea Oats, Wild Oats (<i>Chasmanthium latifolium</i>)	12285A	• Biophos Fungicide	Rose (Rosa)	23467A
• 2,4-D	Plum Grass; Ravenna (<i>Erianthus</i>)	12297A	• Buprofezin	Arrowwood (Viburnum)	21675A
• 2,4-D	Reed Grass (<i>Calamagrostis arundinacea</i>)	12291A	• Buprofezin	Crabapple (Non-Bearing) (<i>Malus</i>)	21677A
• 2,4-D	Ribbon Grass, Gardeners- Garters (<i>Phalaris arundinacea</i>)	12300A	• Buprofezin	Honey Locust (Gleditsia)	21669A
• 2,4-D	Switch-Grass (<i>Panicum virgatum</i>)	12288A	• Buprofezin	Oak (Quercus)	21679A
• 2,4-D + Dicamba + MCP	Big Blue Stem (<i>Andropogon gerardii</i>)	12321A	• Buprofezin	Winged Euonymus (<i>Euonymus alata</i>)	21673A
• 2,4-D + Dicamba + MCP	Blue Fescue (<i>Festuca cinerea</i>)	18380A	• Buprofezin	Wisteria	21667A
• 2,4-D + Dicamba + MCP	Blue Fescue (<i>Festuca ovina glauca</i>)	12317A	• Chloromequat	Sweet Potato Vine (<i>Ipomoea batatas</i>)	13497A
• 2,4-D + Dicamba + MCP	Cordgrass, Marsh Grass (<i>Spartina</i>)	12326A	• Chloromequat	Umbrella Tree (Schefflera)	19674A
• 2,4-D + Dicamba + MCP	Feather Redd Grass (<i>Calamagrostis acutiflora</i>)	18486A	• Chlorothalonil + Thiophanate- Methyl	Bee Balm (<i>Monarda didyma</i>)	21391A
• 2,4-D + Dicamba + MCP	Fountain Grass (<i>Pennisetum setaceum</i>)	12325A	• Chlorothalonil + Thiophanate- Methyl	Daylily (Hemerocallis)	21390A
• 2,4-D + Dicamba + MCP	Indian Grass, Wood Grass (<i>Sorghastrum</i>)	12327A	• Chlorothalonil + Thiophanate- Methyl	Rose Periwinkle (<i>Catharanthus roseus</i>)	18966A
• 2,4-D + Dicamba + MCP	Little Blue Stem (<i>Schizachyrium scoparium</i>)	12323A	• Chlorothalonil + Thiophanate- Methyl	Rose Periwinkle (<i>Catharanthus roseus</i>)	18971A
• 2,4-D + Dicamba + MCP	Maiden Grass (<i>Miscanthus</i>)	12320A	• Chlorothalonil + Thiophanate- Methyl	Snapdragon (<i>Antirrhinum majus</i>)	18963A
• 2,4-D + Dicamba + MCP	Moor Grass (<i>Molinia caerulea</i>)	12324A	• Chlorothalonil + Thiophanate- Methyl	Snapdragon (<i>Antirrhinum majus</i>)	18968A
• 2,4-D + Dicamba + MCP	Northern Sea Oats, Wild Oats (<i>Chasmanthium latifolium</i>)	12316A	• Chlorothalonil + Thiophanate- Methyl	Vervain (Verbena)	18964A
• 2,4-D + Dicamba + MCP	Plume Grass; Ravenna (<i>Erianthus</i>)	12319A	• Cyromazine	Columbine (Aquilegia)	21682A
• 2,4-D + Dicamba + MCP	Ribbon-Grass, Gardeners- Garters (<i>Phalaris arundinacea</i>)	12322A	• Cyromazine	Fir (Abies)	21097A
• 2,4-D + Dicamba + MCP	Wild Rye, Lyme Grass (<i>Elymus</i>)	12318A	• Cyromazine	Fir, Douglas (<i>Pseudotsuga menziesii</i>)	21096A
• Biophos Fungicide	Azalea (Rhododendron)	23462A	• Cyromazine	Holly (Ilex)	21680A
• Biophos Fungicide	Azalea (Rhododendron)	23474A	• Cyromazine	Holly (Ilex)	21681A
• Biophos Fungicide	Holly, Japanese (<i>Ilex crenata</i>)	23460A	• Dichlobenil	Arborvitae (Thuja)	18395A
			• Dichlobenil	Ash (Fraxinus)	18396A
			• Dichlobenil	Beautybush (<i>Kolkwitzia amabilis</i>)	18399A
			• Dichlobenil	Birch (Betula)	18400A
			• Dichlobenil	Cotoneaster	18404A

Pest Control Agent	Commodity	PR#
• Dichlobenil	Crabapple (Non-Bearing) (Malus)	18406A
• Dichlobenil	Elm (Ulmus)	18409A
• Dichlobenil	Linden, Basswood (Tilia)	18413A
• Dichlobenil	Locust, Black (<i>Robinia pseudoacacia</i>)	18414A
• Dichlobenil	Maple (Acer)	18416A
• Dichlobenil	Mountain Ash (Sorbus)	18418A
• Dichlobenil	Oak (Quercus)	18420A
• Dichlobenil	Pine (Pinus)	18423A
• Dichlobenil	Russian Olive (<i>Elaeagnus angustifolia</i>)	18430A
• Dichlobenil	Weigela	18432A
• Dichlobenil	Willow (Salix)	18433A
• Dichlobenil	Yew (Taxus)	18434A
• Dikegulac Sodium	Periwinkle (Vinca)	23324A
• Dithiopyr (WSP) (Over-The-Top)	Azalea (Rhododendron)	23603A
• Dithiopyr (WSP) (Over-The-Top)	Begonia	23159A
• Dithiopyr (WSP) (Over-The-Top)	Cypress, Leyland (<i>Cupressocyparis leylandii</i>)	23639A
• Dithiopyr (WSP) (Over-The-Top)	Daylily (Hemerocallis)	23158A
• Dithiopyr (WSP) (Over-The-Top)	Fern, Leatherleaf (<i>Rumohra adiantiformis</i>)	11268A
• Dithiopyr (WSP) (Over-The-Top)	Fern, Leatherleaf (<i>Rumohra adiantiformis</i>)	11880A
• Dithiopyr (WSP) (Over-The-Top)	Fern, Royal, Flowering Fern (Osmunda)	18507A
• Dithiopyr (WSP) (Over-The-Top)	Fern, Uncrested Lady (Athyrium)	17262A
• Dithiopyr (WSP) (Over-The-Top)	Fern, Uncrested Lady (Athyrium)	18505A
• Ethephon	Apple (Non-Bearing) (Malus)	18792A
• Ethephon	Cottonwood, Fremont (<i>Populus fremontii</i>)	18515A
• Ethephon	Maple, Norway (<i>Acer platanoides</i>)	11886A
• Ethephon	Maple, Red (<i>Acer rubrum</i>)	11887A
• Ethephon	Maple, Silver (<i>Acer saccharinum</i>)	18521A
• Ethephon	Maple, Sugar (<i>Acer saccharum</i>)	11888A
• Ethephon	Oak, Bur (<i>Quercus macrocarpa</i>)	18518A
• Ethephon	Oak, Bur (<i>Quercus macrocarpa</i>)	18808A
• Ethephon	Oak, Northern Pin (<i>Quercus ellipsoidalis</i>)	18520A
• Ethephon	Oak, Northern Red (<i>Quercus rubra</i>)	18737A
• Ethephon	Oak, Northern Red (<i>Quercus rubra</i>)	18809A
• Ethephon	Oak, Red (<i>Quercus rubra</i>)	18516A
• Ethephon	Oak, Sawtooth (<i>Quercus acutissima</i>)	18795A
• Ethephon	Oak, Sawtooth (<i>Quercus acutissima</i>)	18807A

Pest Control Agent	Commodity	PR#
• Ethephon	Oak, Shumard Red (<i>Quercus shumardii</i>)	18796A
• Ethephon	Oak, Shumard Red (<i>Quercus shumardii</i>)	18810A
• Ethephon	Oak, White (<i>Quercus alba</i>)	18519A
• Extract of Neem Oil	Azalea (Rhododendron)	19040A
• Extract of Neem Oil	Begonia	19041A
• Extract of Neem Oil	Crape Myrtle (<i>Lagerstroemia indica</i>)	19048A
• Extract of Neem Oil	Dahlia	19042A
• Extract of Neem Oil	Dogwood, Flowering (<i>Cornus florida</i>)	19043A
• Extract of Neem Oil	Geranium (Pelargonium)	19050A
• Extract of Neem Oil	Hydrangea	19044A
• Extract of Neem Oil	Lilac (Syringa)	19045A
• Extract of Neem Oil	Marigold (Tagetes)	19046A
• Extract of Neem Oil	Pansy (Viola)	19038A
• Extract of Neem Oil	Rose Periwinkle (<i>Catharanthus roseus</i>)	19036A
• Extract of Neem Oil	Snapdragon (<i>Antirrhinum majus</i>)	19049A
• Extract of Neem Oil	St.-Johns-Wort (Hypericum)	19051A
• Extract of Neem Oil	Tickseed (Coreopsis)	19035A
• Extract of Neem Oil	Transvaal Daisy (Gerbera)	19052A
• Extract of Neem Oil	Vervain (Verbena)	19034A
• Extract of Neem Oil	Zinnia	19047A
• Fenpyroximate	Cotoneaster	21515A
• Fenpyroximate	Firethorn (Pyracantha)	20183A
• Fenpyroximate	Hackberry (Celtis)	21506A
• Fenpyroximate	Holly (Ilex)	20175A
• Fluazifop-P-Butyl	Hen and chicks (<i>Sempervivum arachnoideum</i>)	23949A
• Fludioxonil	Snapdragon (<i>Antirrhinum majus</i>)	23121A
• Flumioxazin (G)	Dogwood, Red Osier (<i>Cornus sericea</i>)	20031A
• Flumioxazin (G)	Eucalypt, Australian Gum (Eucalyptus)	19791A
• Flumioxazin (G)	Eucalypt, Australian Gum (Eucalyptus)	19850A
• Flumioxazin (G)	Oak, Live; Southern (<i>Quercus virginiana</i>)	19944A
• Flumioxazin (G)	Oregon Grape (Mahonia aquifolium)	19849A
• Flumioxazin (G)	Palm, Sago (<i>Cycas revoluta</i>)	19977A
• Flumioxazin (G)	Pine, Scotch (<i>Pinus sylvestris</i>)	19932A

Pest Control Agent	Commodity	PR#
• Flumioxazin (G)	Pine, White (<i>Pinus strobus</i>)	19931A
• Flumioxazin (G)	Spruce (Picea)	19881A
• Flumioxazin (WDG)	Barberry (Berberis)	20545A
• Flumioxazin (WDG)	Cedar, Red (<i>Juniperus virginiana</i>)	20452A
• Flumioxazin (WDG)	English Ivy (<i>Hedera helix</i>)	20399A
• Flumioxazin (WDG)	Fir (Abies)	20418A
• Flumioxazin (WDG)	Fir, Balsam (<i>Abies balsamea</i>)	23948A
• Flumioxazin (WDG)	Heath (Erica)	20512A
• Flumioxazin (WDG)	Magnolia, Southern (<i>Magnolia grandiflora</i>)	20454A
• Flumioxazin (WDG)	Maple, Amur (<i>Acer ginnala</i>)	20486A
• Flumioxazin (WDG)	Maple, Amur (<i>Acer ginnala</i>)	20538A
• Flumioxazin (WDG)	Oak, Bear (<i>Quercus ilicifolia</i>)	20472A
• Flumioxazin (WDG)	Plum (Non-Bearing) (Prunus sp.)	20365A
• Flumioxazin (WDG)	Spruce (Picea)	20416A
• Flumioxazin (WDG)	Spruce (Picea)	20426A
• Flumioxazin (WDG)	Sumac (Rhus)	19497A
• Flumioxazin (WDG)	Sumac (Rhus)	20374A
• Flumioxazin (WDG)	Sycamore (Platanus)	20467A
• Flumioxazin (WDG)	Yew (Taxus)	19345A
• Isoxaben	Elm, Chinese (<i>Ulmus parvifolia</i>)	12779A
• Isoxaben	Honey Locust (Gleditsia)	12775A
• Isoxaben	Maple, Red (<i>Acer rubrum</i>)	08428A
• Isoxaben	Mugwort, White (<i>Artemisia lactiflora</i>)	22939A
• Isoxaben	Palm, Areca (<i>Chrysalidocarpus lutescens</i>)	13441A
• Isoxaben	Palm, Mexican Fan (<i>Washingtonia robusta</i>)	13443A
• Isoxaben	Sweetgum (Liquidambar)	12767A
• Isoxaben	Weeping Willow (Salix babylonica)	12778A
• Isoxaben + Trifluralin	Palm, Mexican Fan (<i>Washingtonia robusta</i>)	13416A
• Isoxaben + Trifluralin	Sedge (Carex)	23522A
• Napropamide (G)	African Daisy (Osteospermum)	18695A
• Napropamide (G)	Aster	07211A
• Napropamide (G)	Aucuba	06232A
• Oryzalin	African Daisy (Osteospermum)	18700A
• Oryzalin	Baby's-Breath (<i>Gypsophila elegans</i>)	10753A

Pest Control Agent	Commodity	PR#
• Oryzalin	English Ivy (<i>Hedera helix</i>)	02245A
• Oryzalin	Yew (Taxus)	02244A
• Oxadiazon (G)	Apache Plume (<i>Fallugia paradoxa</i>)	23081A
• Oxadiazon (G)	Creeping Phlox, Moss Pink (<i>Phlox subulata</i>)	12122A
• Oxadiazon (G)	Fountain Grass (<i>Pennisetum setaceum</i>)	13184A
• Oxadiazon + Pendimethalin	Ageratum	19330A
• Oxadiazon + Pendimethalin	Ash (Fraxinus)	19388A
• Oxadiazon + Pendimethalin	Boxwood (Buxus)	19374A
• Oxadiazon + Pendimethalin	Camellia	19375A
• Oxadiazon + Pendimethalin	Cotoneaster	19381A
• Oxadiazon + Pendimethalin	Dogwood, Flowering (<i>Cornus florida</i>)	19379A
• Oxadiazon + Pendimethalin	Holly (Ilex)	19392A
• Oxadiazon + Pendimethalin	Honeysuckle (Lonicera)	19397A
• Oxadiazon + Pendimethalin	Jasmine, Cape, Common	19389A
• Oxadiazon + Pendimethalin	Gardenia (Gardenia)	19394A
• Oxadiazon + Pendimethalin	Juniper (Juniperus)	19394A
• Oxadiazon + Pendimethalin	Lilac (Syringa)	19418A
• Oxadiazon + Pendimethalin	Lily (Lilium)	19360A
• Oxadiazon + Pendimethalin	Magnolia	19398A
• Oxadiazon + Pendimethalin	Maple (Acer)	19369A
• Oxadiazon + Pendimethalin	Oak (Quercus)	19411A
• Oxadiazon + Pendimethalin	Periwinkle (Vinca)	19424A
• Oxadiazon + Pendimethalin	Pine (Pinus)	19405A
• Oxadiazon + Pendimethalin	Privet (Ligustrum)	19396A
• Oxadiazon + Pendimethalin	Rhododendron	19413A
• Oxadiazon + Pendimethalin	Spruce (Picea)	19403A
• Oxadiazon + Pendimethalin	St.-Johns-Wort (Hypericum)	19391A
• Oxadiazon + Pendimethalin	Yarrow (<i>Achillea millifolium</i>)	19368A
• Oxadiazon + Pendimethalin	Yew (Taxus)	19419A
• Oxyfluorfen	Crape Myrtle (<i>Lagerstroemia indica</i> x <i>Fauriei</i>)	12853A
• Pendimethalin (3.8%)	Bayberry (<i>Myrica pensylvanica</i>)	12906A
• Pendimethalin (3.8%)	Cockscomb, Wool Flower (Celosia)	19430A

Pest Control Agent	Commodity	PR#
• Pendimethalin (3.8%)	Eucalypt, Australian Gum (Eucalyptus)	11466A
• Pendimethalin (3.8%)	German Statice (<i>Goniolimon tataricum</i>)	13240A
• Pendimethalin (3.8%)	Palm, Areca (<i>Chrysalidocarpus lutescons</i>)	13444A
• Pendimethalin (G)	Sage, Russian; Blue Spire (Perovskia)	12388A
• Prodiamine (WG)	Chrysanthemum	11634A
• Pyriproxyfen	Fir (Abies)	21099A
• Pyriproxyfen	Fir, Douglas (<i>Pseudotsuga menziesii</i>)	21098A
• Thiamethoxam	Canna	21128A

Pest Control Agent	Commodity	PR#
• Thiamethoxam	Coneflower (Rudbeckia)	21127A
• Thiamethoxam	Lily (Lilium)	21134A
• Thiamethoxam	Pinks (Dianthus)	21129A
• Thiamethoxam	Rose (Rosa)	21118A
• Thiamethoxam	Shasta Daisy (Chrysanthemum x superbum)	21121A
• Thiamethoxam	Stonecrop (<i>Sedum spurium</i>)	21120A
• Thiamethoxam	Tickseed (Coreopsis)	21130A
• Trifloxystrobin	Geranium (Pelargonium)	23117A
• Trifloxystrobin	Pansy (Viola)	23118A
• Trifloxystrobin	Petunia	23116A
• Triflumizole	Aster	10647A
• Triflumizole	Chrysanthemum	10648

Attachment 9

Biopesticide Research and Development – 2004

IR-4 Petitions/Petition Amendments Submitted

0160B Thymol/Beehives (Section 18 PA, CT, MO, MI, IA, MA, IL, NE, OK, VT, ND, IN, ME, MN, MI, SC, UT, FL) (1 volume in 2003, 1 volume in 2004 to reduce PHI to 30 days)

0052B AF36/Cotton Addition of California (18 volumes- *most were previously submitted to BPPD*) Section 3 for California and label amendment for EPA

0187B Sorbitol octanoate, amendment (4 volumes)

0200B Yeast Hydrolysate (KeyPlex 350 OR) – Organic formulation

Clearances from IR-4 Petitions

0160B Thymol/Beehives (Section 18 PA, CT, MO, MI, IA, MA, IL, NE, OK, VT, ND, IN, ME, MN, MI, SC, UT, FL)

0200B Yeast hydrolysate/All food commodities (Citrus and tomato on label)-Non organic formulation

0052B AF36/Cotton Addition of California (18 volumes- *most were previously submitted to BPPD*) Section 3 for California not yet approved by CDPR.
EPA label amendment approved by for EPA

0094B *Chondrostereum purpureum*/Forestry, rights of way

New uses supported by IR-4 Biopesticide Grant Program efficacy research funds

0200B Yeast hydrolysate/All food commodities (Grapefruit)

0292B *Bacillus subtilis* QST713/Squash-Powdery mildew

0298B *Bacillus pumilis*_QST2808- Potato

0301B *Bacillus pumilis* QST2808- Snap bean

0307B *Bacillus pumilis* QST2808- Lima bean

0311B *Bacillus subtilis* QST713/ Tomato-Grey mold

0306B *Bacillus subtilis* QST713/Lima beans –White mold

0314B *Bacillus pumilis*_QST2808- Pumpkin

0315B *Bacillus pumilis* QST2808- Tomato



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