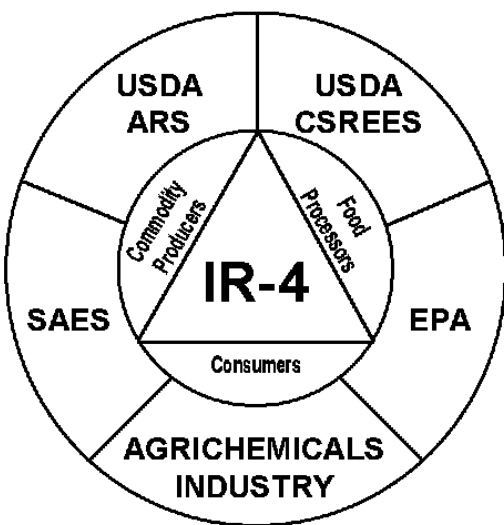

ANNUAL REPORT 2001



**A NATIONAL AGRICULTURAL
PROGRAM TO CLEAR CROP
PROTECTION CHEMICALS AND
BIOLOGICAL PEST CONTROL
AGENTS FOR MINOR USE**

INTERREGIONAL RESEARCH PROJECT NO. 4



University of California · Cornell University ·
University of Florida · Michigan State University

THE STATE UNIVERSITY OF NEW JERSEY
RUTGERS

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

January 1, 2001 - December 31, 2001

INTRODUCTION

BACKGROUND

The Interregional Research Project No. 4 (IR-4 Project) was organized 38 years ago by the Directors of the State Agricultural Experiment Stations (SAES) to obtain regulatory clearances for crop protection chemicals on 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 (USDA) and 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 program 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. Also in 1982, the project added a Minor Use Animal Drug component to the work effort. The animal drug portion of the program became a separate entity several years later and continues today as a separate project funded by CSREES. The minor crop program works as a model government funded program due to a unique partnership formed between the USDA (CSREES and ARS), the IR-4 Headquarters and Regional Leader Laboratory staff, the land grant university system, the crop protection industry, commodity and grower groups and the Environmental Protection Agency (EPA) to bring crop protection solutions to minor crop growers.

PROGRAMS

Food Use Program

In order for the program to respond to the pest control needs of minor crop growers, project requests are solicited from growers, commodity groups, university researchers and extension agents, 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 2001, the program scheduled 107 projects with 620 field trials.

Legislative initiatives have played an important role in the strategies for the program over the past 15 years. FIFRA 88 required a focused program on reregistration of existing products at that time because many of the older products did not have sufficient minor crop sales to justify industry supporting them on those crops. Between 1989 and 1996, the FIFRA 88 initiative led to the successful defense of over 700 minor crop registrations.

The passage of the Food Quality Protection Act or 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 being developed by the crop protection industry and their potential value to minor crop agriculture. These products were extremely safe to mammalian systems as well as birds, wildlife, aquatic species and beneficial organisms making them ideal for use in integrated pest management (IPM) systems. IR-4 started integrating these new products into the 1997 program; over 30% of the projects that year involved those safer chemistries. This trend has continued and has reached the 70-80% level the past two years. This focused effort has given the program a high level of credibility with the EPA in partnering with them to implement the mandates of FQPA as noted in the Program Cooperation and Coordination Section.

The impact of the FQPA has become clearer this past year. Residues of the older products in foods have been confirmed to be low and not a health concern. However, some products have been shown to have levels of exposure to farm workers and applicators as part of the aggregate risk assessment process leading to label restrictions, especially for minor crops. The impact of the cumulative risk assessment on the organophosphorous insecticides will become clear in 2002. Fortunately, the EPA has worked closely with minor crop growers and commodity groups to preserve critical uses of certain older products while working with IR-4 to rapidly make available the new products. IR-4 strongly believes that the projects now underway and the petitions that were

submitted in 2001 and will be submitted in the upcoming years will provide minor crop growers with safe and effective crop protection tools.

Ornamentals Program

The ornamental industry is an extremely important component of minor crop agriculture with over \$12 billion in annual sales which comprise over 25% of all minor 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.

FUTURE DIRECTIONS

This past year has given IR-4 an opportunity to observe our progress in implementing the 2001 to 2005 Strategic Plan which was approved by the Project Management Committee in 2000. It is important that we continue to focus our efforts on the Mission Statement (“To provide pest management solutions to growers of fruits, vegetables and the other minor crops. People who benefit from IR-4 are consumers, growers and food processors”) developed as a key part of the Strategic Plan. The cornerstone of the Plan is to focus on the latest crop protection chemistries and biopesticides as solutions for the pest control needs of minor crop growers. As noted in the introduction, the program has gone from 30% of our projects in this category in 1997 to nearly 80% this year. The Plan also reinforced the importance of the 30-month completion schedule which was initiated in 1999 to speed the registration of new technologies in order to get them into the hands of growers as soon as possible. This year was the first year to judge the submission rate which ended up at over 70%. This number is considered good and could have even been higher if the EPA had the capacity to review more petitions. As it is, the EPA’s 2001 Workplan was comprised of 46% of our projects and this will rise to 50% on their 2002 Workplan. We can hardly ask more of the Agency and greatly appreciate this level of support for minor crop agriculture.

The Strategic Plan also targeted additional support for and emphasis on the Methyl Bromide Alternatives (MBA) Program and the Biopesticide Research Program and associated biopesticide registration support. This past year validated the importance of initiating the MBA Program in 1999 on strawberries and tomatoes in Florida and California. We now have two years of solid research data from large scale, replicated research trials which demonstrate that currently 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 minor crops since 2001 saw the level of methyl bromide reduction hit 50%. The program was expanded to mulched vegetables in 2001. In addition, IR-4 has been active in serving as a facilitator to help university researchers apply for USDA funding resulting in a \$335,000 two-year grant for the cut flowers and bulb industry. Further details on this important program are found in a later section.

The Biopesticide Research Program continued its sixth year of competitive grant funding of 44 projects for \$300,000 and amounting to over \$1,800,000 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 minor crops), IR-4 has continued to help biopesticide registrants with regulatory advice and petition preparation help if requested. This past year has seen the growth of the Biopesticides Industry Alliance (BPIA) as a trade association of biopesticide companies focused on improving the industry’s image, improving product quality and developing standards for product certification. IR-4 has been an active ad hoc member of BPIA and is working closely with them 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.

The 2001 Annual Report highlights the progress of IR-4 toward achieving the goal of providing safe and effective chemical and biopesticide options for minor crop growers which are compatible with IPM programs. The accomplishments, as measured by clearances, were the second highest on record with 564 food use clearances including 21 biopesticides food use clearances (compared to the record of 567 in 2000) along with 289 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, 2001 to December 31, 2001.

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 8465 IR-4 food-use requests, an increase of 328 over the 8137 requests reported in 2000. Of these, 1200 are researchable projects. In 2001, SAES and USDA-ARS cooperators scheduled research on 107 requested clearance projects (studies) which represented 620 field trials. Residue samples from 608 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 pesticides/commodities researched in 2001 are shown in Attachment 3.

FOOD USE REGULATORY ACCOMPLISHMENTS:

IR-4 Supported Approvals

IR-4 and EPA efforts continue to result in high numbers of new uses for minor crop growers. Ninety-three permanent tolerances were established, based on IR-4 data. The new tolerances support up to 512 new minor uses that can be added to crop protection chemical labels (Attachment 4). Again, this year IR-4 has been successful in utilizing “Super Crop Group Strategies” as noted for many of the 168 new uses resulting from IR-4’s submissions on azoxystrobin fungicide. However, many of the tolerances that resulted in 2001 were a direct result of EPA and California Department of Pesticide Regulation reviewing a greater number of IR-4 data packages (a nearly two-fold increase).

IR-4 data were used to support 21 new biopesticide food uses in 2001. IR-4 data were used to support the following EPA approvals: Lysophosphatidylethanolamine on 16 fruit crops to promote ripening and extend storage shelf life; *Aspergillus flavus* AF36 on cotton for reducing aflatoxin; and methyl anthranilate on corn and sunflower as a bird repellent.

IR-4 data were also used to support many of the time-limited Section 18 tolerances established over the past year. Fifty-seven Section 18 time limited tolerances were established based on IR-4 data. These Section 18 tolerances supported 66 minor crop uses and many of these tolerances support uses in multiple states.

In summary, the total new food use clearances supported by IR-4 research in 2001 include: 477 new chemical clearances, 21 new biopesticide clearances and 66 Section 18 uses for a total of 564 uses. This number is basically equal to the record numbers reported in 2000.

Crop Group Definitions

In addition to the “Super Crop Group” submissions, IR-4 submitted a crop group petition to include Lingonberry, Juneberry and Salal in the Berries Crop Group and Bushberry Subgroup. This action was approved by EPA on 20 SEP 01. This and others are shown in Attachment 5. Additional needs will surface at the 2002 IR-4 Crop Group Symposium which will be aligned with the 39th IR-4 Annual Meeting in Arlington, VA in October 2002.

REGULATORY PROGRESS:

IR-4 continues to work closely with EPA to steward IR-4 projects through the Agency. Items such as the “Super Crop Group Strategies” noted above, providing an IR-4 submission schedule to assist EPA planning, and personnel exchanges to better understand the operations at EPA. IR-4 is anticipating EPA’s 2002 work plan to be similar to 2001, with approximately 140 petitions scheduled for review, which should again result in 400 to 500 new clearances. EPA’s work share program with the California Department of Pesticide Regulation (Ca-DPR) should be extremely productive with over 100 of the new uses resulting from data packages reviewed by Ca-DPR. It also is expected that the first EPA/PMRA Joint Review of an IR-4 petition will be a success in 2002.

EPA’s Notice of Filings (NOF’s)

NOF’s provide the supporting companies risk assessments and other supporting information regarding the chemicals. EPA has published NOF’s on the IR-4 projects regarding the following active ingredients: Bentazon, Cyfluthrin, Cymoxanil, Dicloran, Ethafluralin, Fosetyl-Al, Halosulfuron, Pendimethalin, Tebuconazole, and Triflurosulfuron. IR-4 expects tolerances to be established soon for many of these projects.

Data Package Development

IR-4 submitted 115 data packages to EPA in 2001 (see Attachment 6). This number is basically equal to the number submitted in 2000. The current number of projects in queue for report writing is 242 (see Attachment 7); many of these have been considered for the EPA 2002 work plan. As part of the 30-month timeline, IR-4 is planning to submit 80 data packages in 2002 from research started in 2000.

ORNAMENTAL RESEARCH AND REGISTRATIONS:

Since the IR-4 Ornamentals Program was initiated in 1977, a total of 21,458 ornamental pest control clearance requests have been received. There are now 4801 researchable projects still requiring research data. Requests for 551 of these projects were received during 2001. IR-4 supported 643 ornamental research trials during 2001 and prepared 121 registration packages containing 1327 reports that were sent to registrants for future labeling. These included 36 fungicide, 46 herbicide, 29 insecticide, 2 nematocide and 8 plant growth regulator packages. Eight biofungicides and three bioinsecticides were also included among these data packages. These research data are used for national label registrations for floral, forestry, nursery, Christmas tree and turf production. Data are also provided for use in the maintenance of commercial landscape, and interior plantscapes. During the year, industry labeled 289 ornamental uses based on IR-4 data. These are shown in Attachment 8.

BIOPESTICIDE RESEARCH AND REGISTRATIONS:

In 2001, IR-4 funded a total of 38 research projects on the following biopesticides: ATEze™ on Field Grown Fresh Market Tomato and Pepper for control of Soilborne Diseases; *Xanthomanos campestris* pv. *poannua* for Control of Annual Bluegrass as part of an IPM program; Milsana for the control of powdery mildew of cucurbits, lettuce, grape and strawberry; Serenade® AS an organic fungicide for control of *Alternaria* on basil and collard; Elexa™ for the control of powdery mildew of grape, lettuce, roses and cucurbits; *Pseudomonas fluorescens* strain BL915 for Control of Soil Borne Diseases of Ornamentals; Control of *Thielaviopsis basicola*, *Rhizoctonia solani*, *Botrytis cinerea* and other Pathogens of Ornamental Crops with Biofungicides; Mating Disruption of Two Leafroller Species in Apple Using Isomate Hand-applied Dispenser Technology; *Puccinia thlaspeos* for biological control of the weed, *Isatis tinctoria* (Dyer’s Woad); Evaluation of Formulated Douglas-Fir Tussock Moth Pheromone as a Mating Disruptant; Serenade® AS and Organic Biofungicide for Control of *Botrytis cinerea* on Red Raspberry, Strawberry, and Chive; AgBio-222 for Suppression/Control of *Alternaria* Diseases of Potato, *Phytinia* leaf spot, and *Pythium* on Geranium; Testing of a New Codling Granulosis Virus Product to

Supplement Mating Disruption; Pelargonic Acid for Weed Control in Stevia; Biopesticides for Control of *Sclerotinia* Leaf Drop of Lettuce; New Verbenone Pouch for Suppression of Southern Pine Beetle Infestations; Serenade® Biofungicide for control of Mummy Berry Disease when Applied to Blueberry Flowers by Bees; Nature's Glory Insecticide for Blueberry and Eggplant; Serenade® as Biofungicides for Post-harvest Control of *Botrytis cinerea* on Kiwifruit; Nature's Glory Weed and Grass Killer for Control of Weeds in Snapbeans and Transplanted Tomato; Mating Disruption of Codling Moth and Oriental Fruit Moth in Apple using Isomate CM/OFM Hand-applied Dispenser Technology; Potential for Management of *Sclerotinia* blight with the Biological Control Agent *Coniothyrium minitans* (CONTANS); Individual Tree Protection with an Antiaggregation Pheromone, 3-methylcyclohex-2-en-1-one (MCH); Mycotrol® for Management of Tarnished Plant Bug on Romaine Lettuce; and Aminoethoxyvinylglycine hydrochloride (AVG) as a Postharvest Treatment on Plum, Peach and Cherry to extend Shelf Life.

In 2001, IR-4 data were used to support the following EPA approvals: lysophosphatidylethanolamine on 16 fruit crops to promote ripening and extend storage shelf life; *Aspergillus flavus* AF36 on cotton for reducing aflatoxin; methyl anthranilate on corn and sunflower as a bird repellent; and *Verticillium dahliae* isolate WCS 850 for the prevention of Dutch elm disease.

In 2001, five biopesticide petitions, amendments or data packages were submitted to EPA or the registrant. These are listed in Attachment 9.

METHYL BROMIDE ALTERNATIVES (MBA) PROGRAM:

IR-4 has completed 20 large-scale company-sponsored methyl bromide alternative field trials during the 1999-2001 period and 8 more are scheduled to be run in 2001/2002. These trials mimic commercial application and product results that we believe will be duplicated when used by growers. The crops using the greatest amounts of methyl bromide in the US are strawberries and tomatoes and because of this, these crops have been the focus of our efforts since IR-4 became involved in methyl bromide alternatives programs. Registered products that show promise for immediate usage to replace methyl bromide in minor crops include combinations of Telone/InLine®, Chloropicrin EC, Metam Sodium and DiTera®. Promising new products used either alone or in various combinations and under evaluation in the 2001 IR-4 methyl bromide alternatives program include iodomethane, sodium azide, propylene oxide (PROPOZONE), fosthiazate, PlantPro 45, PlantPro 20EC, ENZONE, and MULTIGUARD™ FFA. Information on these products will be made available upon request by contacting Dr. Jack Norton norton@aesop.rutgers.edu; telephone 908-735-9585. Also visit the IR-4 website for details of the IR-4 methyl bromide alternatives test protocols.

IR-4 has coordinated research programs in Florida where the soil fumigant Telone® C35 is being applied in mulched vegetables and strawberries and followed with selective registered and non-registered herbicides to provide the full spectrum of control given by methyl bromide. This program began in 2000 and is continuing into 2002 with a great deal of success. The herbicides halosulfuron methyl and trifloxysulfuron sodium have been given official methyl bromide alternative status for "Fast track" regulatory decisions as a result of this program. In the IR-4 MBA program these products have shown good control of nutsedge species in fruiting vegetables.

IR-4 assisted researchers at the University of Florida and at the University of California, Davis, in applying for and receiving a large grant from USDA for methyl bromide alternatives research and "outreach" for cut flowers and ornamental bulb crops. This grant covers a two year period and was awarded \$335,000. IR-4 also assisted the California Cut Flower Commission in obtaining a grant from the US EPA for \$20,000 to further support research on cut flowers in California.

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 and Puerto Rico. 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 four US EPA GLP compliance inspections. Three IR-4 participating field testing sites and one IR-4 analytical laboratory were audited by the US EPA for GLP compliance and data integrity. A total of 36 IR-4 related facilities have been inspected for GLP compliance since April 27, 1997.

The IR-4 QAU is comprised of Regional QA Coordinators, university cooperating 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 entire set of IR-4 QAU SOPs (15) were reviewed by QA at HQ and Regional QA Coordinators, and necessary revisions were made. The new QA SOPs became effective on January 31, 2001.

The IR-4 QAU is a cooperative unit in which representatives mutually monitor studies and coordinate activities in an efficient manner. In 2001, regular inspections included approximately 33 facility inspections, more than 120 field in-life inspections, approximately 79 analytical in-life inspections, approximately 30 analytical summary report/data audits and 665 field data book audits. There were over 79 final reports completed during the 2001 calendar year and a total of 97 final reports audited.

PROGRAM COOPERATION AND COORDINATION

The IR-4 Project continued to pride itself in being a model of interagency cooperation for a federally funded program by forming partnerships with the land grant university system, commodity organizations and minor crop groups, our USDA funding agencies (CSREES and ARS) and the EPA to bring the latest crop protection solutions to minor crop growers. The various organizations and the partnership initiatives are noted below:

- Crop Protection Industry. IR-4 would not have new products to evaluate without the cooperation of the biopesticide and chemical companies who discover, develop, register and market their new technologies. The consolidation that started in the early 1990's and accelerated at the end of the decade continued in 2001 with Dow AgroSciences purchasing the agricultural business of Rohm and Haas and Bayer purchasing the Aventis crop protection business. In spite of these mergers and the consolidation of the previous years, the industry continued to work closely with IR-4 to develop minor crop strategies for their new products. Several companies have taken the leadership in working with IR-4 to develop residue data on representative crops in various crop groupings leading to the potential for many new tolerances and minor crop uses. However, in some cases, these companies lacked the product performance/efficacy data to put the minor crops on their labels. IR-4 allocated 15% (\$300,000) of its 2001 field research budget for an efficacy program and industry contributed financial matching funding in some cases. The cost per project for efficacy data is about \$25,000 vs over \$100,000 for a residue study, making the investment for this approach a very cost effective way to obtain new minor crop labeled uses.
- EPA. The partnership started with the EPA in 1999 with the formation of the EPA/IR-4 Technical Working Group (TWG) extended into its third successful year with four TWG meetings and two IR-4 sponsored minor crop tours (greenhouse tomatoes in Virginia and fruits and vegetables in Maryland and Pennsylvania). Dr. Willis Wheeler, IR-4 Liaison to the Director of the Office of Pesticide Programs, completed a successful second year working closely with Pat Cimino, EPA Minor Use Team Leader, and other members of the Minor Use Team to further the partnership initiatives started in 1999 and 2000. One notable result of this effort was the publication of the EPA Minor Use Report which was highly complimentary of the IR-4 Program.

Willis retired during the year and his contributions will be missed. However, Dan Kunkel, Registration Manager, spent about a week per month over a six month period on an EPA sabbatical to learn more about the internal procedures within the Agency, especially in the Registration and Health Effects Divisions, to handle IR-4 petitions so that improvements and efficiencies could be implemented. Dan has taken the leadership with Hoyt Jamerson, EPA's Minor Use Officer, to develop the Annual Workplan over a period of 8 or 9 months to maximize the number of petitions for review by grouping as many as possible around key active ingredients and combining with registrants petitions to minimize the FQPA risk assessment process. This resulted in increasing the percentage of IR-4 petitions on the EPA Workplan from 25% in 2000 to 46% in 2001. Additional efficiencies are expected in future years from electronic petition submissions, Data Evaluation Record summary petition formats and other innovative approaches using crop groupings and reduced data requirements with Reduced Risk products. The EPA partnership has been made possible by the strong management support from Marcia Mulkey, OPP Director, Jim Jones, Registration Division Director promoted to Deputy Program Director in OPP during 2001, and Dr. Margaret Stasikowski, Director, Health Effects Division.

- California's Department of Pesticide Regulation (DPR). Our partnership started with DPR in 2000 with their joint review with the EPA of one IR-4 minor crop petition. This partnership greatly expanded in 2001 with DPR's joint EPA review of 30 IR-4 petitions which were 20% of our submitted petitions and 10% of the entire EPA workload. This was a major contribution and one of the reasons why the Agency was able to increase its percentage of IR-4 petitions in 2001. Again, as with the EPA, the DPR partnership would not have happened without strong management support from Paul Helliker, Director, and his management team.
- Health Canada's Pest Management Regulatory Agency (PMRA). PMRA accepted its first IR-4 petition for joint review with the EPA in 2001 and it is hoped that this will lead to an expansion of this partnership effort in the future since Canada has been a partner through PMRA and the Canadian Horticultural Council since 1996 in conducting joint field residue programs with IR-4. Canada conducted 16 residue trials as part of the joint field residue program in 2001 and a total of over 60 since 1996.
- Biopesticides and Pollution Prevention Division (BPPD). BPPD along with PMRA, DPR and IR-4 sponsored a Biopesticide Registration Workshop in November 2001 which was attended by 192 scientists, registration experts and interested parties from the biopesticide industry, the land grant university system, USDA and commodity groups in the U.S., Canada, Mali, Ethiopia, Tanzania, Kenya, and Senegal. The sponsors believe that the Workshop should help registrants and IR-4 to more efficiently prepare petitions for BPPD, PMRA and DPR review.
- Commodity Liaison Committee (CLC). The CLC under the leadership of Chair Rocky Lundy, Executive Director of the Mint Industry Research Council, made a major goal for the year to increase funding for the program. Although Congress had increased funding for the ARS portion of the program in 2000 (their first increase since 1992), the CSREES portion had not seen an increase since 1997 which was holding back a number of the initiatives highlighted in the 2001 to 2005 Strategic Plan. The CLC held a Congressional Staff Luncheon and a Senate Staff Briefing in addition to extensive contacts with key House and Senate Agriculture Appropriations Committee members and their staffs to stress the importance of minor crops to agriculture in their states. Sandy Perry's (National Outreach Specialist) project to capture the economic loss data from state Section 18 requests using IR-4 residue data was a key component in demonstrating the value of our program in economic terms. The value of EPA approved Section 18's supported by IR-4 data was over \$2.2 billion from 1998 to 2000. The CLC's efforts were successful and resulted in increases in both the USDA-CSREES and USDA-ARS budget appropriations. This funding will allow IR-4 to support additional field residue projects, purchase needed analytical equipment and increase funding for the Ornamentals and Biopesticides Programs in 2002 and subsequent years.

- Workshops. The Food Use Workshop, held in Fort Collins, Colorado, from September 11th to the 13th, is the best example of our partnership initiatives in action since representatives from the crop protection industry, the land grant university system, USDA (CSREES and ARS), EPA, DPR, PMRA, commodity groups and growers attended. Unfortunately, the September 11th terrorist attacks placed a somber mood over the meetings and some people were unable to fly in for the entomology and plant pathology sessions on the 12th and 13th due to the airline groundings. However, the dedication of those who did attend and those who participated by teleconference demonstrated the patriotic spirit of our partners for our great nation and their dedication to minor crop agriculture. We were able to complete the priority setting process and implement the planning for a full field program in 2002. Unfortunately, the Ornamentals Workshop scheduled later in September had to be postponed until April 15th to 18th, 2002 in Houston, Texas although the field program was discussed in breakout sessions at the Annual Meeting.

USEFULNESS OF FINDINGS

IR-4 goes through an extensive process each year to obtain input on the most critical pest control needs of minor crop producers and to prioritize those research needs using committees of regional and national level agricultural 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 minor crop pest solutions. All IR-4 food use residue research is carried out according to EPA approved Good Laboratory Practices with coordination and implementation by the Quality Assurance Unit (QAU). Annual training of Field Cooperators, Laboratory personnel and other support staff involved in the conduct of the work is essential to the success of the IR-4 Project. GLP compliance audits of facilities and of ongoing field and laboratory procedures, provide assurance that IR-4 food safety data will be accepted by the registrants and the EPA. The success of the IR-4 Project depends on its credibility with 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 minor crops today.

WORK PLANNED FOR 2002

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 and the EPA to insure the program maintains its focus on important minor use needs. Established partnerships will be enhanced while new partnerships will be sought.

The research program for year 2002 will consist of approximately 109 studies requiring the collection of residue samples. Eighty-seven (87) trials will be for collecting additional efficacy and/or crop safety data to support a specific data need. To support this research plan, a total of 684 field trials are planned. Most of these field trials (488) are being covered by regional state agricultural research stations. USDA-ARS will be conducting 99 field trials and Canada has agreed to cooperate on 10 trials. IR-4 is looking forward to another productive research season in 2002.

IR-4 will continue its commitment to producing quality scientific data in order to meet EPA's Good Laboratory Practice 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 February 26-28, 2002 in Miami, Florida to conduct the annual QA scheduling 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 we plan QA assignments for year 2002.

Forty-one (41) proposals have been submitted to the IR-4 Biopesticide Program for funding in the year 2002. A selection of the projects to be funded will be made in February, 2002 by the IR-4 Project Management Committee. The Biopesticides Program will continue to work with university and federal scientists, registrants and EPA to expand the number of registered biopesticides.

The Methyl Bromide Alternatives Program's new initiative planned in 2002 includes a large scale field program in the Southeastern US with Telone plus selective herbicides in strawberries, tomatoes, peppers, and melons. Also planned in 2002 is research for methyl bromide alternatives on cut flower and bulb crops and a new post harvest initiative which involves residue programs with propylene oxide (PPO) as a fumigant to sanitize in-shell nuts, cocoa beans and dried fruit in storage.

Ornamental protocols have been prepared for 110 chemicals and biopesticides. Approximately 560 research trials are being scheduled to be conducted by 36 federal, state, and private researchers in 21 states.

OVERALL SUMMARY

IR-4 was fortunate to have visionary leadership on its Project Management Committee to develop Strategic Plans in 1996 and 2001 with strategies and action plans to address the rapidly changing regulatory (FQPA) and crop protection (biopesticide and safer new chemistries) paradigms. The strategy of developing strategic partnerships with the crop protection industry, the regulatory agencies (EPA, CDPR and PMRA) and the growers and their commodity organizations has led to a new era of crop protection tools for minor crop growers. It is remarkable to note that in the last three years there have been more food use clearances granted on behalf of IR-4 efforts (1444) than in the 12 years pre-FQPA from 1984 to 1996 (1205). This kind of accomplishment was made possible by the dedication and teamwork from everyone internal in the IR-4 program in the land grant university system (regional teams of chemists, quality assurance specialists, field coordinators, field researchers and management) and the USDA (our CSREES funding partner and its management and our ARS team and their similar compliment of skills to their land grant universities) coordinated by a dedicated Headquarters staff. IR-4 prides itself as a model of interagency cooperation for a federally funded program with matching support from the land grant university system.

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December 31, 2001

R.E. Holm, Executive Director
IR-4, Cook College, Rutgers - The State University
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Approved:

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

N.P. Thompson, Chair, Administrative Advisers
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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
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ATTACHMENT 1 - 2001

COOPERATING DEPARTMENTS AND AGENCIES

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

PRINCIPAL LEADERS

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Dr. B. Carlton, *Rutgers University (Jan-Jun)*
Dr. C. Hefferan, *U.S. Department of Agriculture*
Dr. F. Horn, *U.S. Department of Agriculture*
Dr. G. Lemme, *Michigan State University (Mar-Dec)*
Dr. E. Ortman, *Purdue University (Jan-Feb)*
Dr. M. Parrella, *University of California, Davis*
Dr. D. Rossi, *Rutgers University (Jul-Dec)*
Dr. N. Thompson, *University of Florida, Chair*

Project Management Committee (PMC):

Dr. R. Hollingworth, *Michigan State University, Chair*
Dr. R. Holm, *Rutgers University, Executive Director*
Mr. R. Lundy, *Mint Industry Research Council*
Dr. M. Marshall, *University of Florida*
Dr. J. Parochetti, *U.S. Department of Agriculture*
Ms. P. Sarica, *Rutgers University, Executive Secretary*
Dr. P. Schwartz, Jr., *U.S. Department of Agriculture*
Dr. T. Shibamoto, *University of California, Davis*
Dr. D. Soderlund, *Cornell University, Geneva*
Dr. N. Thompson, *University of Florida*

Representing

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

Northcentral Region
IR-4 Headquarters
CLC's Chair
Southern Region
USDA-CSREES
IR-4 Headquarters
USDA-ARS
Western Region
Northeast Region
AA's Chair

SUPPORT GROUPS

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Dr. M. Braverman, *Coordinator*
Dr. H. Chen, *Coordinator*
Dr. J. Corley, *Coordinator*
Dr. K. Dorschner, *Coordinator*
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Dr. J. Norton, *Methyl Bromide Manager*
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ATTACHMENT 1 (Continued)

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Mrs. P. Sarica, *Associate Director for Administration*
Mrs. K. Sims, *Administrative Assistant (Jul-Dec)*
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Dr. D. Thompson, *Coordinator*
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Ms. T. White, *Manager, Quality Assurance*

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Dr. Z. Chen, <i>Regional Quality Assurance Coordinator (May-Dec)</i>	Northcentral Region
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Commodity Liaison Committee (CLC):

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Mr. E. Kurtz, <i>EAK Ag., Inc.</i>	Salinas, CA
Mr. R. Lundy, <i>Mint Industry Research Council, CLC Chair</i>	Stevenson, WA
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Mr. R. Ratto, <i>Ratto Brothers</i>	Modesto, CA
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Ms. L. Schmale, <i>Society of American Florists</i>	Alexandria, VA
Dr. J. Sharp, <i>California Strawberry Commission</i>	Watsonville, CA
Mr. B. Spencer, <i>Spencer Brothers</i>	Yuma, AZ
Mr. D. Trinko, <i>MBG Marketing</i>	Grand Junction, MI

ATTACHMENT 1 (Continued)

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Ms. E. Pfeil, USDA-ARS	MD
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Dr. S. Whitney	DE
Dr. D. Yarborough	ME

ATTACHMENT 1 (Continued)

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

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Dr. H. Toba, USDA-ARS	WA
Dr. D. Walsh	WA
Mr. T. Wixson, USDA-ARS	WA
Vacant	NV

ATTACHMENT 2

FIELD AND LABORATORY RESEARCH COOPERATORS - 2001

The IR-4 Project is grateful to the many agricultural scientists who participated in the field and laboratory research phases of the program in 2001. 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

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Dr. M. Bari	CA	Mr. R. McReynolds	OR
Mr. B. Boutwell	CA	Mr. W. Meeks	ID
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Mr. J. DeFrancesco	OR	Mr. C. Mourer	CA
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Mr. B. Fischer	CA	Mr. S. Scheufele	CA
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ATTACHMENT 2 (Continued)

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Mr. B. Fraelich	GA	Mr. T. Treat	WA
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CANADA

Ms. S. Bouffard	QC	Dr. J. O'Sullivan	ON
Mr. J. Jotchem	NS	Mr. G. Thomson	QC
Mr. B. Kerr	ON	Mr. C. vandenBerg	BC
Mr. G. O'Neill	ON		

2001 IR-4 Ornamental Researchers

NORTHCENTRAL REGION

B.A. Anderson	OH, USDA-ARS
T.W. Davis	MI
C.R. Krause	OH, USDA-ARS
R.K. Lindquist	OH
D.G. Nielsen	OH
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NORTHEAST REGION

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SOUTHERN REGION

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J.F. Derr	VA
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B.A. Fraelich	GA, USDA-ARS
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WESTERN REGION

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R.G. Linderman	OR, USDA-ARS
S.A. Tjosvold	CA
T.L. Treat	WA, USDA-ARS

ATTACHMENT 3

Food Use Research Projects - 2001

CHEMICAL	COMMODITY	PR #	CHEMICAL	COMMODITY	PR #
• Abamectin	Chives	7102	• Clopyralid	Collard	5008
• Abamectin	Lychee	7831	• Clopyralid	Corn (Sweet)	7788
• AVG	Cherry	8052	• Clopyralid	Peach	3621
• AVG	Peach	8053	• Clopyralid	Plum	3625
• AVG	Plum	8054	• Cyfluthrin	Grasses (Timothy)	6837
• Azoxystrobin	Basil	7104	• Cyfluthrin	Greens (Mustard)	7563
• Azoxystrobin	Chives	7105	• Cyfluthrin	Spinach	7566
• Azoxystrobin	Citrus	7593	• Cyprodinil + Fludioxonil	Basil	7123
• Azoxystrobin	Dill	7363	• Cyprodinil + Fludioxonil	Bean (Dry)	7782
• Azoxystrobin	Parsley	7111	• Cyprodinil + Fludioxonil	Bean (Lima)	7783
• BAS 500	Broccoli	7493	• Cyprodinil + Fludioxonil	Bean (Snap)	7614
• BAS 500	Cabbage	7494	• Cyprodinil + Fludioxonil	Lettuce (Head & Leaf)	7131
• BAS 500	Greens (Mustard)	7595	• Cyprodinil + Fludioxonil	Onion (Green & Dry Bulb)	5033
• BAS 500	Turnip Greens	7594	• Cyromazine	Bean (Snap)	3909
• BAS 510	Bean	7924	• Difenoconazole	Yam	6958
• BAS 510	Lettuce (Head & Leaf)	7933	• Diflubenzuron	Greens (Mustard)	8031
• BAS 510	Tomato	8126	• Diflubenzuron	Peanut	7737
• BAS 516	Almond	7923	• Dimethenamid-P	Beet (Garden)	6662
• BAS 516	Beet (Garden)	7926	• Dimethenamid-P	Onion (Green)	7699
• BAS 516	Blueberry	8008	• Dimethenamid-P	Turnip (Roots & Tops)	7696
• BAS 516	Caneberry	7930	• Diuron	Peach	7962
• BAS 516	Carrot	7925	• Emamectin	Cucumber	6987
• BAS 516	Celery	8091	• Fenhexamid	Apple (PH)	7601
• BAS 516	Onion (Green & Dry Bulb)	7920	• Fenhexamid	Pepper (Bell & Non- Bell)	7264
• BAS 516	Parsley	7932	• Fenhexamid	Tomato	7251
• BAS 516	Radish	7928	• Fenpropathrin	Blueberry	7815
• BAS 516	Spinach	8090	• Fenpyroximate	Hops	8087
• BAS 516	Stone Fruits	7921	• Ferbam	Cherry	4085
• BAS 516	Strawberry	7929	• Fludioxonil	Apple (PH)	7568
• BAS 516	Turnip (Roots & Tops)	7927	• Fludioxonil	Cantaloup	7618
• Bifenazate	Cherry	7054	• Fludioxonil	Citrus (PH)	7947
• Bifenazate	Tomato (GH)	8035	• Fludioxonil	Kiwifruit	7639
• Bifenthrin	Cilantro	7557	• Fludioxonil	Yam	8107
• Buprofezin	Peach	7517	• Flumioxazin	Bean (Dry)	8058
• Buprofezin	Pear	7518	• Flumioxazin	Mint	8075
• Buprofezin	Tomato (GH)	7406	• Flumioxazin	Onion	7389
• Carfentrazone-ethyl	Pepper (Bell & Non- Bell)	7959	• Flumioxazin	Potato	7964
• Carfentrazone-ethyl	Tomato	7960	• Fluroxypyr	Apple	7706
• Chlorimuron ethyl	Cranberry	3023	• Fluroxypyr	Onion (Dry Bulb)	7705
• Chlorpyrifos	Apple	8015	• Fluroxypyr	Pear	7707
• Clethodim	Bean (Lima)	5206	• Glyphosate	Strawberry	1409
• Clethodim	Bean (Snap)	5205	• Imidacloprid	Banana	7333
• Clethodim	Hops	8086	• Imidacloprid	Chives	6259
• Clethodim	Lettuce (Leaf)	5224	• Imidacloprid	Sugar Apple	6993
• Clethodim	Pea (Dry)	5204	• MBTA-HCL	Grapefruit	7785
• Clopyralid	Cabbage, Chinese (Bok Choy)	5006	• Mefenoxam	Bean (Lima)	6776
• Clopyralid	Cabbage, Chinese (Napa)	5007			

ATTACHMENT 3 (Continued)

CHEMICAL	COMMODITY	PR #	CHEMICAL	COMMODITY	PR #
• Metaldehyde	Artichoke	7396	• Pyriproxyfen	Onion (Dry Bulb)	7886
• Metldehyde	Blueberry	7397	• Pyriproxyfen	Tomato	7412
• Methoxyfenozide	Bean (Snap)	7532	• Quinoxifen	Cantaloup	7252
• Methoxyfenozide	Bean (Succulent)	7531	• Quinoxifen	Cherry	7757
• Methoxyfenozide	Beet (Sugar)	7522	• Quinoxifen	Grape	7256
• Methoxyfenozide	Carrot	7529	• Quinoxifen	Pepper (Bell & Non-Bell)	8006
• Methoxyfenozide	Grasses	7524	• Sethoxydim	Cantaloup	7343
• Methoxyfenozide	Papaya	7063	• Spinosad	All Crops	8095
• Methoxyfenozide	Pea (Succulent Shelled)	7528	• Spinosad	Banana	7332
• Methoxyfenozide	Strawberry	6768	• Spinosad	Grasses (Seed Crop)	8040
• Metribuzin	Pea (Succulent)	6388	• Sulfentrazone	Broccoli	7724
• Myclobutanil	Caneberry (Raspberry)	5058	• Sulfentrazone	Greens (Mustard)	7581
• Myclobutanil	Mayhaw	5737	• Sulfentrazone	Potato	7723
• NAA	Grapefruit	7578	• Tebuconazole	Asparagus	7991
• NAA	Orange	6024	• Thiacloprid	Cherry	7812
• Paraquat	Cantaloup	1476	• Thiacloprid	Peach	7811
• Paraquat	Cucumber	2978	• Thiacloprid	Plum	8038
• Paraquat	Ginger	7824	• Thiamethoxam	Barley	7746
• Paraquat	Squash (Summer)	2982	• Thiamethoxam	Blueberry	7051
• Prometryn	Celeriac	3567	• Thiamethoxam	Pepper (Bell)	3454
• Pronamide	Radicchio	4601	• Thiamethoxam	Spinach	7429
• Pyridate	Broccoli	3449	• Tribenuron-Methyl	Sunflower	8138
• Pyridate	Cabbage	3218	• Triflumizole	Filbert	7996
• Pyridate	Corn (Sweet)	7883	• Zoxamide	Taro	8122

ATTACHMENT 4

New Tolerances and Approvals - 2001

Tolerance Type Pesticide Type Chemical	Crop	PR #	Tolerances	New/Added Uses
Conditional				
Fungicide				
Cyprodinil	Onion	5033	1	2
	Strawberry	6790	1	1
Herbicide				
Carfentrazone	Caneberry	6758	1	4
Exempt				
Bird Repellent				
Methyl Anthranilate	Corn	5030	1	1
	Sunflower	5031	1	1
Fungicide				
<i>Pseudomonas chlororaphis</i>	Tomato and Pepper	173B	1	2
Exempt (temp)				
Fungicide				
<i>Aspergillus flavus</i> AF36	Cotton	52B	1	1
PGR				
<i>Lysophosphatidylethanolamine (LPE)</i>	Blueberry, Cherry, Pepper	85B	1	16
NOF				
Fungicide				
Cymoxanil	Hop	6941	1	1
Dicloran	Leafy Greens	6316	1	1
Fosetyl-AI	Blueberry	4937	1	5
Fosetyl-AI	Citrus	7761	1	14
Fosetyl-AI	Lingonberry	6950	1	1

ATTACHMENT 4 (Continued)

Tolerance Type Pesticide Type Chemical	Crop	PR #	Tolerances	New/Added Uses
Fosetyl-AI	Pea (succulent)	7570	1	7
Fosetyl-AI	Turnip	5085	1	2
Tebuconazole	Cucumber	5277	1	6
Tebuconazole	Hops	6672	1	1
Tebuconazole	Lychee	6702	1	1
Tebuconazole	Mango	6426	1	1
Tebuconazole	Okra	6261	1	1
Tebuconazole	Plum	6553	1	2
Tebuconazole	Pumpkin	5278	1	1
Tebuconazole	Squash	5279	1	5
Tebuconazole	Sunflower	6414	1	3
Tebuconazole	Turnip (Roots & Tops)	6234	1	2
Herbicide				
2,4-D	Soybean	1164	1	1
Bentazon	Clover	1840	2	1
Dicamba	Sweetcorn	7376	2	1
Diflufenzopyr	Grasses, Pasture	7804	112	112
Diflufenzopyr	Sweetcorn	7376	2	1
Ethafaluralin	Canola	6883	1	1
Ethafaluralin	Dill	5320	1	1
Ethafaluralin	Safflower	2700	1	1
Pendimethalin	Almond	6219	1	6
Pendimethalin	Carrot	4084	1	1
Pendimethalin	Pecan	6077	1	6
Pendimethalin	Pepper, Bell	2740	1	2
Pendimethalin	Pepper, Non-Bell	2219	1	1
Pendimethalin	Pistachio	6221	1	1
Pendimethalin	Tomato	2741	1	6
Triflusaluron	Chicory	6709	1	1
Insecticide				
Cyfluthrin	Garbanzo	6535	1	6
Cyfluthrin	Pea Dry	6533	1	6
Cyfluthrin	Southern Pea	5524	1	6
Diflubenzuron	Grasses	3871	112	112
Diflubenzuron	Pear	6367	1	1
Thymol	Honey	160B	1	1
Non-Food Use				
PGR				
Hydrogen Cyanamide	Apple	6304	1	1
Hydrogen Cyanamide	Peach	6303	1	3
Hydrogen Cyanamide	Plum	6177	1	1
Permanent				
Fungicide				

ATTACHMENT 4 (Continued)

Tolerance Type Pesticide Type Chemical	Crop	PR #	Tolerances	New/Added Uses
Azoxystrobin	Blueberry	6721	1	5
Azoxystrobin	Cabbage, Bok, Choy	7265	-	1
Azoxystrobin	Collard	7106	-	1
Azoxystrobin	Grass, Seed Crop	6690	3	112
Azoxystrobin	Lychee	6866	1	1
Azoxystrobin	Mango	6867	-	1
Azoxystrobin	Mint	6828	2	2
Azoxystrobin	Mint, Fresh	6756	-	1
Azoxystrobin	Mustard Greens	6813	1	6
Azoxystrobin	Pepper	6868	3	3
Azoxystrobin	Strawberry	6785	1	1
Azoxystrobin	Tropical Fruits	7491	12	33
Azoxystrobin	Watercress	6722	1	1
Chlorothalonil	Asparagus	319	1	1
Chlorothalonil	Mango	2162	1	1
Chlorothalonil	Pistachio	5196	1	1
Mefenoxam	Artichoke	4979	1	1
Mefenoxam	Artichoke (Seed)	4978	-	1
Mefenoxam	Atemoya	4941	-	1
Mefenoxam	Basil	5756	1	19
Mefenoxam	Carambola	4939	-	1
Mefenoxam	Chives	6045	1	18
Mefenoxam	Coriander	2832	-	1
Mefenoxam	Kiwi	3050	1	1
Mefenoxam	Lingonberry	6951	1	1
Mefenoxam	Mint (Fresh)	5045	-	1
Mefenoxam	Papaya	5404	-	-
Mefenoxam	Papaya	5184	1	5
Mefenoxam	Rosemary	4082	-	1
Mefenoxam	Sage	2491	-	1
Mefenoxam	Sugar Apple	2940	1	3

Herbicide

Clethodim	Beet, Garden	6245	-	1
Clethodim	Broccoli	5215	-	1
Clethodim	Cabbage	5216	1	10
Clethodim	Cantaloup	5225	1	3
Clethodim	Carrot	5217	1	14
Clethodim	Cauliflower	6242	-	1
Clethodim	Celery	5218	1	6
Clethodim	Clover	6218	1	1
Clethodim	Cranberry	5358	1	1
Clethodim	Flax	7558	1	1
Clethodim	Horseradish	6283	-	1
Clethodim	Lettuce, Leaf	5224	1	1
Clethodim	Mustard Seed	7758	1	1
Clethodim	Onion, Green	6362	1	1
Clethodim	Potato (Sub-Group)	5198	1	16
Clethodim	Pumpkin	6488	-	1
Clethodim	Radish	5227	-	1
Clethodim	Rhubarb	5297	-	1
Clethodim	Squash (Summer)	5228	-	6
Clethodim	Squash (Winter)	5229	1	5
Clethodim	Strawberry	5230	1	1

ATTACHMENT 4 (Continued)

Tolerance Type	Pesticide Type	Crop	PR #	Tolerances	New/Added Uses
	Chemical				
	Clethodim	Turnip, Roots & Tops	6244	-	1
	Clethodim	Watermelon	5232	-	1
	Clomazone	Cucurbits	3943	1	14
	Clomazone	Root Crops	5374	1	17
	Halosulfuron	Melon	6366	1	3
	Imazamox	Pea and Bean	Many	1	38
	Paraquat	Artichoke	2275	1	1
	Paraquat	Endive	7420	1	1
	Paraquat	Pea, Dry	3200	1	2
	Paraquat	Persimmon	6247	1	1

Insecticide

Abamectin	Celeriac	6593	1	1
Hexythiazox	Caneberry	4020	1	2
Hexythiazox	Caneberry	3238	-	2
Hexythiazox	Mint	6436	2	2
Imidacloprid	Bean, Lima	6201	-	12
Imidacloprid	Bean, Snap	5477	1	12
Imidacloprid	Cilantro	6396	1	1
Imidacloprid	Sweet Corn	7605	1	1
Imidacloprid	Turnip, Tops	7802	1	1
Pyriproxyfen	Pistachio	7759	1	1
Spinosad	Artichoke	6767	1	1
Spinosad	Asparagus	6649	1	1
Spinosad	Beet, Garden	6906	2	2
Spinosad	Blueberry	6850	3	7
Spinosad	Cranberry	6823	1	1
Spinosad	Okra	8041	1	1
Spinosad	Pomefruit	6714	1	7
Spinosad	Strawberry	6822	1	1
Spinosad	Tree Nut Group	6824	3	14
Spinosad	Vegetable, foliage of legume group	7299	2	16
	Vegetable leaves of root and tuber group			

Reregistration

Herbicide

Diuron	Blueberry	5471	1	2
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Time-Limited Tolerance (TLT)

Fungicide

Azoxystrobin	Cabbage	6868	1	1
Azoxystrobin	Lychee	6866	1	1
Azoxystrobin	Pepper	6868	1	1
Carboxin	Onion (Dry Bulb)	6128	1	1
Chlorothalonil	Ginseng	988	1	1
Cymoxanil	Hop	6941	1	1
Cyprodinil	Caneberries	6838	1	4

ATTACHMENT 4 (Continued)

Tolerance Type	Pesticide Type	Crop	PR #	Tolerances	New/Added Uses
	Chemical				
	Dimethomorph	Cucurbits	6754	1	3
	Fludioxonil	Peach	6934	1	3
	Fludioxonil	Plum	6943	1	1
	Mancozeb	Ginseng	992	1	1
	Myclobutanil	Artichoke	7020	1	1
	Myclobutanil	Hop	6939	1	1
	Myclobutanil	Pepper	6071	1	1
	Myclobutanil	Sugarbeet	7998	1	1
	Propiconazole	Cranberry	6320	1	1
	Propiconazole	Dry Bean	2008	1	1
	Tebuconazole	Barley	6513	1	1
	Tebuconazole	Garlic	7197	1	1
	Tebuconazole	Hops	6672	1	1
	Tebuconazole	Sunflower	6414	1	1
	Thiabendazole	Lentil	6531	1	1
	Herbicide				
	Carfentrazone	Hops	7596	1	1
	Clethodim	Grass	6836	2	2
	Clopyralid	Canola	5125	1	1
	Clopyralid	Cranberry	3882	1	1
	Clopyralid	Flax	7223	1	1
	Desmedipham	Garden Beet	337	1	1
	Ethafluralin	Canola	6883	1	1
	Ethafluralin	Safflower	2700	1	1
	Metolachlor	Spinach	1217	1	1
	Metolachlor	Tomato	2000	1	1
	Pendimethalin	Mint	5523	1	1
	Pronamide	Cranberry	3152	1	1
	Sethoxydim	Safflower	2531	1	1
	Sulfentrazone	Strawberry	7044	1	1
	Terbacil	Watermelon	2841	1	1
	Insecticide				
	Abamectin	Avocado	7198	1	1
	Abamectin	Basil	6755	1	1
	Bifenazate	Tomato (GH)	8035	1	1
	Diflubenzuron	Pear	6367	1	1
	Fenpropathrin	Currant	6739	1	1
	Imidacloprid	Blueberry	6817	1	1
	Imidacloprid	Cherry	7202	1	1
	Imidacloprid	Cranberry	7279	1	1
	Imidacloprid	Peach	6399	1	2
	Spinosad	Cranberry	6823	1	1
	Spinosad	Grass	7401	1	1
	Spinosad	Peanut	6908	1	1
	Tebufenozide	Grape	6763	1	1
	Tebufenozide	Longan, Lychee	7069	1	2
	Tebufenozide	Sweetpotato	6512	1	1
	Rodenticide				
	Zinc Phosphide	Barley	6626	1	1

ATTACHMENT 4 (Continued)

Tolerance Type				
Pesticide Type	Crop	PR #	Tolerances	New/Added
Chemical				Uses
Zinc Phosphide	Potato	6123	1	1
Zinc Phosphide	Sugarbeet	3951	1	1
Zinc Phosphide	Wheat	2240	1	1

ATTACHMENT 5

Crop Grouping: Update

This document lists the revisions and amendments to Commodity Definitions under 40 CFR § 180.1(h) and Crop Group/Subgroups under 40 CFR § 180.41 that have been approved by the HED Chemistry Science Advisory Council (ChemSAC). The changes are entitled: I. Tropical and subtropical fruit commodity definitions; II. White sapote change to crop group and commodity definition; III. Commodity definition change for celery; IV. New commodity definition for parsley = cilantro; V. New commodity definition for winter squash; VI. Crop group change for turnip greens; VII. Almond residue data translatable to pistachios; VIII. Lingonberry, Juneberry, and Salal added to Crop Group 13 Berries and Crop Subgroup 13-B Bushberry.

A user's index to commodities and what sections to find the changes occurring are as follows:

Commodity	Change in Item
Acerola	I
Acorn squash	V
Almond	VII
Atemoya	I
Avocado	I
Birida	I
Black Sapote	I
Brassica Leafy Vegetables Group	VI
Butternut Squash	V
Calabaza	V
Canistel	I
Celery	III
Cherimoya	I
Chinese Celery	III
Cilantro	IV
Citrus	II
Citron Citrus	II
Citrus Fruits	II
Citrus Fruit Group	II
Cucurbit Vegetables Group	V
Custard Apple	I
Cushaw	V
Feijoa	I
Finochio	III
Florence Fennel	V
Forage Turnip	VI
Grapefruit	II
Guava	I
Herb Subgroup	IV
Herbs and Spices Group	IV
Hubbard Squash	V
Ilama	I
Jaboticaba	I
Juneberry	VIII
Kumquat	I
Leafy Vegetables except Brassica Crop Group	III

Commodity	Change in Item
Leaves of Root and Tuber Vegetables Crop Group	VI
Lemon	II
Longan	I
Lychee	I
Lime	II
Lingonberry	VIII
Mamey Sapote	I
Mango	I
Orange	II
Papaya	I
Parsley	IV
Passionfruit	I
Pistachio	VII
Pummelo	I
Pulsan	I
Pumpkin	IV
Rambutan	I
Salal	VIII
Sapodilla	I
Soursop	I
Spanish Lime	I
Spice Subgroup	IV
Star Apple	I
Starfruit	I
Sugar Apple	I
Sweet Anise	III
Sweet Fennel	III
Tangelo	II
Turnip, Forage	VI
Turnip Greens	VI
Turnip Tops	VI
Uniq Fruit	I
Wax Jumbu	I
White Sapote	II
Winter Squash	V

ATTACHMENT 5 (Continued)

ITEM I. TROPICAL AND SUBTROPICAL FRUIT COMMODITY DEFINITIONS:

The six new tropical/subtropical fruit crop definitions are as follows:

General Commodity	Specific Commodities included in definition
Papaya	Papaya; black sapote; canistel; mamey sapote; mango; sapodilla; and star apple
Avocado	Avocado; black sapote; canistel; mamey sapote; mango; papaya; sapodilla; and star apple
Grapefruit	Grapefruit, pummelo and their citrus cultivars and/or hybrids of these including Uniq fruit.
Guava	Guava; feijoa; jaboticaba; wax jambu; starfruit; Passionfruit; and acerola.
Lychee	Lychee; longan; Spanish lime; rambutan; and Pulasan.

?? Modifications or expansions have also been approved for two existing crop definitions, sugar apple and white sapote.

?? For the sugar apple commodity definition: cherimoya, ilama, soursop and biriba will be added to the existing sugar apple definition, which currently covers sugar apple, atemoya and custard apple as follows:

General Commodity	Specific Commodities included in definition
Sugar Apple	Sugar apple, atemoya, custard apple, cherimoya, ilama, soursop, and birida.

ITEM II. WHITE SAPOTE CHANGE TO CROP GROUP AND COMMODITY DEFINITION:

There are two actions concerning white sapote.

?? The first action concerns white sapote becoming a member of the Citrus Fruits Crop Group [40 CFR 180.41 (10)].

?? The second action concerns adding white sapote to the Citrus fruit commodity definition [40 CFR § 180.1(h)] as follows:

General Commodity	Specific Commodities included in definition
Citrus fruits	Grapefruit, lemons, limes, oranges, tangelos, citrus citron, Kumquats, white sapote (<u>Casimiroa</u> spp.) and other cultivars and/or hybrids of these.

ATTACHMENT 5 (Continued)

ITEM III. COMMODITY DEFINITION CHANGE FOR CELERY:

Chinese celery (Apiumgraveolens var.secalinum) will be added to the celery commodity definition under 40 CFR § 180.1(h) as follows:

General Commodity	Specific Commodities included in definition
Celery	Celery, Florence fennel (sweet anise, sweet fennel, Finocchio), Chinese celery, (fresh leaves and stalk only).

Note: Chinese celery is a member of Crop Group 4: Leafy Vegetables, except Brassica group [40 CFR 180.41 (4)].

ITEM IV. NEW COMMODITY DEFINITION FOR PARSLEY = CILANTRO:

A new commodity definition under 40 CFR § 180.1(h) is established for parsley as follows:

General Commodity	Specific Commodities included in definition
Parsley	Parsley, Cilantro

Note: The raw agricultural commodity (RAC) for parsley is parsley, leaves; and for cilantro is cilantro, leaves. The seeds of cilantro are coriander seed and they are not covered as part of this commodity definition. Also, coriander seed is a member of Crop Group 19: Herbs and Spices Group, and crop Subgroup 19B: Spice Subgroup. Cilantro, dried leaves and parsley, dried leaves will remain as a members of Crop Group 19: Herbs and Spices Group, and Crop Subgroup 19A: Herb Subgroup.

ITEM V. NEW COMMODITY DEFINITION FOR WINTER SQUASH:

A new commodity definition under 40 CFR § 180.1(h) is established for winter squash as follows:

General Commodity	Specific Commodities included in definition
Winter Squash	Fruits of the gourd (<u>Cucurbitaceae</u>) family that is consumed when mature, it has an inedible rind, and once picked they can be stored, and harvested seed can be germinated; e.g. <u>Cucurbita</u> spp. (acorn squash, hubbard squash, pumpkin, calabaza, butternut squash, cushaw and other cultivars and/or hybrids of these.

Note: This new commodity definition has been incorporated into Crop Group 9: Cucurbit vegetables.

ITEM VI. CROP GROUP CHANGES FOR TURNIP GREENS:

Turnip greens will be removed from Crop Group 2: Leaves of root and tuber vegetables group [40 CFR 180.24 (2)], and it will become a member of Crop Group 5: Brassica leafy vegetables [40 CFR 180.41 (5)]. It will also be a member of Crop Subgroup 5B: Leafy Brassica greens. Forage turnip varieties grown for livestock feed uses will remain in Crop Group 2: Leaves of root and tuber vegetables group.

ATTACHMENT 5 (Continued)

ITEM VII. ALMOND RESIDUE DATA TRANSLATABLE TO PISTACHIOS:

Field residue data for almonds will be translatable to pistachios. Tolerances established for almonds will be established for pistachios at the same level.

NOTE: Pistachios will be included as a member of the Tree Nuts Crop Group (40 CFR § 180.41). It was also determined that the representative commodities almond and pecan for the Tree Nuts Group adequately represent the Crop Group. The policy paper describing this action was sent to Registration Division for implementation by publishing an amendment to the Crop Group final rule in the Federal Register. However, due to FQPA priorities, the Agency has no plans to amend the Crop Group Regulations at this time, but the Agency is allowing petitioners to request tolerances for pistachios based on residue data submitted for the Tree Nut Crop Group. Until the Federal Register Notice is issued revising the Crop Group Regulation, tolerances for pistachios will be listed separately from the Crop Group, but the tolerance will be established at the same level as the Crop Group.

ITEM VIII. LINGONBERRY, JUNE BERRY, AND SALAL TO BE ADDED TO BERRIES CROP GROUP AND BUSHBERRY SUBGROUP:

Lingonberry, Juneberry, and salal will be included in Crop Group 13 – Berries and Crop Subgroup 13B – Bushberry. Until the Crop Group Regulation is repropose, the correct Section F crop tolerance expressions are as follows for petitions:

- (1) For a Crop Group 13 – Berries tolerance proposal: Berries Group and Juneberry, Lingonberry, and Salal;
 - (2) For a Crop Subgroup 13B tolerance proposal: Bushberry Subgroup and Juneberry, Lingonberry, and Salal;
 - (3) For a blueberry tolerance proposal: Blueberry and Juneberry, Lingonberry, and Salal.
-

Analysis of each commodity definition and crop group/subgroup revisions can be obtained from the author at 703-305-5555 or E-mail Schneider.Bernard@epa.gov. The correct commodity term for each of the commodities discussed in this document can be found in the EPA Food and Feed Commodity Vocabulary (see <http://www.epa.gov/pesticides/foodfeed>).

NOTE: Until the Federal Register Notice is issued revising the Crop Group Regulation, tolerances on the above crops will be listed separately from the Crop Group and Definitions. To update the Crop Groupings in the Federal Register, IR-4 plans to use the IR-4/USDA Crop Grouping Symposium for this purpose. The Symposium is scheduled for 7 to 8 October, 2002 in Virginia.

B.A. Schneider
and G.M. Markle

ATTACHMENT 6

Data Packages Completed in 2001

Tolerance	Chemical	Crop	PR Number
Exemption	<i>Chondrostereum purpureum</i>	Forest Uses	94B
	Sorbitol Octanoate	All Crops	187B
	Sucrose esters	All Crops	89B
	<i>Trichoderma hamatum</i> Isolate 382	All Crops	49B
	Yeast Hydrolysate	All Crops	200B
Label Expansion	Bifenthrin	Grape	8025
New	2,4-D	Hops	5024
	Azoxystrobin	Caneberry	6786
	Azoxystrobin	Cranberry	6859
	Azoxystrobin	Mustard Greens	6813
	Azoxystrobin	Pepper	6868
	Azoxystrobin	Pistachio	6830
	Bifenthrin	Spinach	7088
	Bifenthrin	Tomato	6970
	Buprofezin	Lychee	7739
	Clethodim	Broccoli	5215
	Clethodim	Cabbage	5216
	Clethodim	Cauliflower	6242
	Clethodim	Collard	6490
	Clethodim	Kale	6489
	Clethodim	Lettuce, Leaf	5224
	Clethodim	Mint	5235
	Clethodim	Mustard Greens	5222
	Clethodim	Onion, Green	6362
	Clethodim	Spinach	6243
	Clopyralid	Beet, garden	5432
	Clopyralid	Canola	5125
	Clopyralid	Cherry	3622
	Clopyralid	Crambe	6571
	Clopyralid	Cranberry	3882
	Clopyralid	Flax	7223
	Clopyralid	Head & Stem Brassica	3626
	Clopyralid	Hops	6480
	Clopyralid	Mustard Greens	5010

ATTACHMENT 6 (Continued)

Tolerance	Chemical	Crop	PR Number
	Clopyralid	Peach	3621
	Clopyralid	Plum	3625
	Clopyralid	Spinach	5434
	Clopyralid	Strawberry	5262
	Clopyralid	Turnip	6491
	Cyfluthrin	Sweetpotato	8140
	Cyprodinil/Fludioxonil	Caneberry	6839
	Cyprodinil/Fludioxonil	Pistachio	7336
	Cyprodinil/Fludioxonil	Watercress	6759
	Dichlobenil	Rhubarb	6665
	Diflubenzuron	Grasses	3871
	Dimethomorph	Lettuce, Head	7021
	Dimethomorph	Lettuce, Leaf	6382
	Ethalfuralin	Dill	5320
	Ethalfuralin	Potato	6567
	Ethalfuralin	Safflower	2700
	Fenhexamid	Blueberry	6935
	Fenhexamid	Caneberry, Raspberry	6840
	Fenhexamid	Pistachio	7818
	Fenpropathrin	Current	6739
	Fenpropathrin	Pea, Succulent	2504
	Fenpropathrin	Pepper	2503
	Folpet	Hops	6947
	Fomesafen	Bean, Dry	5403
	Fosetyl-Al	Leek	6150
	Fosetyl-Al	Lingonberry	6950
	Fosetyl-Al	Onion, Green	6115
	Halosulfuron	Bean, Dry	6627
	Halosulfuron	Bean, Snap	6452
	Hexythiazox	Date	6957
	Imidacloprid	Bushberry	6817
	Imidacloprid	Carrot	6307
	Imidacloprid	Cucumber, Greenhouse	5488
	Imidacloprid	Okra	6588
	Imidacloprid	Passion Fruit	6449
	Imidacloprid	Tomato, Greenhouse	7366
	Methoxyfenozide	Artichoke	7323
	Metolachlor	Green Onion	6717
	Myclobutanil	Artichoke	7020
	Myclobutanil	Eggplant	6732
	Myclobutanil	Hop	6939
	Myclobutanil	Pepper, Non-Bell	6071
	Oxyfluorfen	Hops	5199
	Oxyfluorfen	Strawberry	2900
	Oxyfluorfen	Strawberry, Annual	3443
	Paraquat	Okra	1913
	Paraquat	Onion, Bulb	5434
	Paraquat	Onion, Green	2983
	Pendimethalin	Mint	3888
	Pirimicarb	Asparagus	1500
	Pyridaben	Tomato, Greenhouse	8034
	Pyriproxyfen	Blueberry	7233
	Pyriproxyfen	Guava	7374
	Pyriproxyfen	Lychee	7372
	Quinoxifen	Grape	7256

ATTACHMENT 6 (Continued)

Tolerance	Chemical	Crop	PR Number
	Quinoxifen	Hops	7358
	Spinosad	Artichoke	6767
	Spinosad	Basil	6905
	Spinosad	Bushberry	6850
	Spinosad	Caneberry	6825
	Spinosad	Fig	8150
	Spinosad	Pea, Dry	7273
	Spinosad	Peanut	6908
	Spinosad	Radish	7360
	Spinosad	Strawberry	6822
	Sulfentrazone	Cabbage	6522
	Sulfentrazone	Horseradish	6745
	Sulfentrazone	Mint	6343
	Tebufenozide	Sweet Potato	6512
	Thiabendazole	Bean, Dry	6532
	Thiamethoxam	Mint	7362
	Thiophanate-methyl	Pistachio	6619
	Zinc Phosphide	Barley	6626
	Zinc Phosphide	Bean, Dry	6536
	Zinc Phosphide	Beet, Sugar	3951
	Zinc Phosphide	Wheat	2440

Re-Registration

Diazinon	Caneberry	5589
Ferbam	Cranberry	4092
Phosmet	Sweet Potato	3463
Ziram	Blueberry	4745

ATTACHMENT 7

Regulatory Documents in Preparation - 2001

CHEMICAL	COMMODITY	PR#	CHEMICAL	COMMODITY	PR#
• 2,4-D	Potato	1029	Tebupirimphos		
• Abamectin	Bean (Aduzuki)	6594	• Cyprodinil + Fludioxonil	Broccoli	7122
• Abamectin	Bean (Dry)	5001	• Cyprodinil + Fludioxonil	Cabbage	7121
• Abamectin	Bean (Lima)	7271	• Cyromazine	Onion (Dry Bulb)	7239
• Abamectin	Bean (Snap)	5478	• Cyromazine	Onion (Green)	7238
• Abamectin	Canistel	7828	• Cyromazine	Pea (Southern)	3906
• Abamectin	Onion (Green)	4068	• Desmedipham + Phenmedipham	Beet (Garden)	5265
• Abamectin	Papaya	4078	• Desmedipham	Beet (Garden)	0337
• Abamectin	Sapodillia	7827	• Desmedipham	Spinach	1922
• Abamectin	Sapote (Black)	7826	• Dimethoate	Pea (Dry)	6650
• Abamectin	Sapote (Mamey)	7829	• Dimethoate	Pea (Succulent)	6693
• Abamectin	Star Apple	7825	• Dimethomorph	Onion (Dry Bulb)	7200
• Acifluorfen	Bean (Lima)	6300	• Dimethomorph	Onion (Green)	7246
• Azoxystrobin	Broccoli	7096	• Dimethomorph	Pepper (Bell & Non- Bell)	6750
• Azoxystrobin	Cabbage	7095	• Diuron	Mint (Spearmint)	6952
• Azoxystrobin	Cabbage, Chinese	7838	• Diuron	Olive	5474
• <i>Bacillus thuringiensis</i>	Pea (Pigeon)	2812	• Esfenvalerate	Kale	2843
• BAS 516	Caneberry	7930	• Esfenvalerate	Passion Fruit	3694
• Bentazon	Peach	5115	• Ethephon	Peach	3920
• Bifenazate	Cantaloup	7510	• Ethofumesate	Beet (Garden)	0742
• Bifenazate	Cucumber	7511	• Ethosumesate	Carrot	6703
• Bifenazate	Mint	7386	• Ethoprop	Pepper (Bell & Non- Bell)	5323
• Bifenazate	Pepper (Bell & Non- Bell)	7552	• Ethylene	Pineapple	4124
• Bifenazate	Squash (Summer)	7512	• Fenarimol	Hops	6940
• Bifenazate	Tomato	7266	• Fenhexamid	Kiwifruit	7600
• Bifenthrin	Greens (Mustard)	6970	• Ferbam	Caneberry (Raspberry)	4981
• Bifenthrin	Tomato	4868	• Ferbam	Grape	3934
• Buprofezin	Bean (Snap)	7660	• Ferbam	Papaya	4080
• Captan	Cherry	5418	• Fludioxonil	Yam	8107
• Captan	Turnip (Roots & Tops)	4338	• Fosetyl-Al	Hops	6484
• Carfentrazone-ethyl	Hops	7596	• Fosetyl-Al	Lingonberry	6950
• Chlorothalonil	Pepper (Bell)	0032	• Glufosinate	Corn (Sweet)	6515
• Chlorothalonil	Pepper (Non-Bell)	0571	• Glufosinate	Corn (Sweet)	6953
• Chlorothalonil	Persimmon	5388	• Glyphosate	Flax	6115
• Clethodim	Asparagus	5427	• Glyphosate	Garbanzo	6141
• Clethodim	Basil	5759	• Glyphosate	Garlic	6493
• Clethodim	Flax	7558	• Glyphosate	Pea (Dry)	6139
• Clethodim	Lettuce (Head)	5223	• Glyphosate	Safflower	6162
• Clethodim	Lettuce (Head)	7694	• Glyphosate	Artichoke	7358
• Clethodim	Sesame	7756	• Imidacloprid	Basil	6258
• Clofentezine	Persimmon	6601	• Imidacloprid	Bean (Dry)	6528
• Clomazone	Pepper (Bell)	7488	• Imidacloprid	Beet (Garden)	6305
• Clopyralid	Blueberry	5433	• Imidacloprid	Caneberry	7523
• Clopyralid	Flax	7223	• Imidacloprid	Cherry	7202
• Clopyralid	Pear	3624	• Imidacloprid	Coffee	5760
• Clopyralid	Strawberry	3689	• Imidacloprid	Cucumber	5488
• Cycloate	Swiss Chard	3542	• Imidacloprid	Guava	7738
• Cyfluthrin + Tebupirimphos	Potato	7665	• Imidacloprid	Pea (Southern)	6498
• Cyfluthrin +	Sweetpotato	7664			

ATTACHMENT 7 (Continued)

CHEMICAL	COMMODITY	PR#	CHEMICAL	COMMODITY	PR#
• Imidacloprid	Peach	6399	• Oxyfluorfen	Rhubarb	6592
• Imidacloprid	Pepper (Non-Bell)	6171	• Oxyfluorfen	Safflower	5454
• Imidacloprid	Plum	7279	• Oxyfluorfen	Sweetpotato	3939
• Imidacloprid	Radish	6308	• Paraquat	Broccoli	1475
• Imidacloprid	Strawberry	6260	• Paraquat	Cabbage	1479
• Imidacloprid	Tomato (GH)	5487	• Paraquat	Greens (Mustard)	2980
• Imidacloprid	Tomato (GH)	7366	• Paraquat	Pea (Dry)	6741
• Imidacloprid	Turnip (Roots)	6306	• Paraquat	Pea (Succulent)	5193
• Imidacloprid	Watercress	6501	• Paraquat	Safflower	2939
• Indoxacarb	Collard	6986	• PCNB	Greens (Mustard)	4983
• Iprodione	Clover	5728	• Pendimethalin	Apple	6608
• Linuron	Celeriac	3557	• Pendimethalin	Artichoke	6623
• Linuron	Celery	4936	• Pendimethalin	Asparagus	6660
• Linuron	Coriander	1625	• Pendimethalin	Broccoli	6505
• Linuron	Dill	1432	• Pendimethalin	Cabbage	6387
• Linuron	Horseradish	3609	• Pendimethalin	Cherry	6609
• Linuron	Lupine	5134	• Pendimethalin	Fig	6607
• Linuron	Parsley	3035	• Pendimethalin	Grape	5740
• MBTA-HCL (PT807-HCL)	Grapefruit	7785	• Pendimethalin	Grasses (Seed)	4912
• MCPA	Clover (Seed)	6527	• Pendimethalin	Greens (Mustard)	1986
• Mefenoxam	Sapote (Mamey)	4942	• Pendimethalin	Kenaf	5208
• Metalaxyl + Copper	Grape	6266	• Pendimethalin	Kiwifruit	6681
• Metaldehyde	Caneberry (Blackberry)	4521	• Pendimethalin	Onion (Green)	5097
• Metaldehyde	Caneberry (Raspberry)	4526	• Pendimethalin	Peach	6610
• Methoxyfenozide	Cantaloup	7195	• Pendimethalin	Pear	6760
• Methoxyfenozide	Cranberry	7355	• Pendimethalin	Plum	6611
• Methoxyfenozide	Cucumber	7016	• Pendimethalin	Pomegranate	6669
• Methoxyfenozide	Longan	7070	• Pendimethalin	Strawberry (Perennial)	2739
• Methoxyfenozide	Lychee	7069	• Pendimethalin	Turnip Greens	1987
• Methoxyfenozide	Pea (Blackeyed)	7018	• Permethrin	Turnip Greens	8296
• Methoxyfenozide	Pea (Edible Podded)	7529	• Phenmedipham	Spinach	5693
• Methoxyfenozide	Pistachio	8290	• Prometryn	Carrot	1682
• Methoxyfenozide	Squash (Summer)	7194	• Prometryn	Dill	1630
• Methoxyfenozide	Turnip Greens	7438	• Prometryn	Dill	3040
• Methyl Bromide	Taro (Dry Land)	3885	• Prometryn	Parsley	3618
• Metolachlor	Carrot	6281	• Prometryn	Parsley	5160
• Metolachlor	Horseradish	6470	• Pronamide	Caneberry (Blackberry)	3201
• Metolachlor	Onion (Dry Bulb)	2702	• Pronamide	Caneberry (Raspberry)	3593
• Metolachlor	Onion (Dry Bulb)	5396	• Pronamide	Chicory (Roots)	6474
• Metolachlor	Radish	6899	• Pronamide	Chicory (Roots)	6729
• Metolachlor	Spinach	6336	• Pronamide	Chicory (Tops)	5027
• Metolachlor	Turnip Greens	2578	• Pronamide	Grasses (Pasture)	2297
• Metribuzin	Garlic	6386	• Pronamide	Pea (Austrian)	6217
• Metribuzin	Tanier	6459	• Pronamide	Safflower	5456
• Myclobutanil	Artichoke	7020	• Propiconazole	Cranberry	7359
• NAA	Pomegranate	5389	• Propiconazole	Parsley	6351
• NAA	Tangerine	6025	• Propiconazole	Pineapple	6585
• Oxyfluorfen	Banana	6697	• Propiconazole	Pistachio	6844
• Oxyfluorfen	Blueberry	2133	• Pyrethrin + PBO	Basil	5911
• Oxyfluorfen	Caneberry	3616	• Pyrethrin + PBO	Chives	5921
• Oxyfluorfen	Kale	6108	• Pyridaben	Cherry	6737
• Oxyfluorfen	Kenaf	6318	• Pyridaben	Papaya	6695
• Oxyfluorfen	Mint	6699	• Pyriproxyfen	Carambola	7005
• Oxyfluorfen	Pejibaye (Peach Palm)	6606	• Pyriproxyfen	Okra	7414
			• Pyriproxyfen	Passion Fruit	7009
			• Pyriproxyfen	Sugar Apple	7010

ATTACHMENT 7 (Continued)

CHEMICAL	COMMODITY	PR#	CHEMICAL	COMMODITY	PR#
• Quizalofop	Pineapple	5174	• Tebufenozide	Grape	6763
• Sethoxydim	Basil	4010	• Terbacil	Watermelon	2841
• Sethoxydim	Borage	7208	• Thiacloprid	Cherry	7812
• Sethoxydim	Buckwheat	1348	• Thiamethoxam	Bean (Dry)	7675
• Sethoxydim	Date	3702	• Thiamethoxam	Bean (Succulent)	7589
• Sethoxydim	Kenaf	6319	• Thiamethoxam	Carrot	7468
• Sethoxydim	Savory	7383	• Thiamethoxam	Pea (Dry)	7590
• Spinosad	Dill (Seed)	7361	• Thiamethoxam	Pea (Succulent)	7676
• Spinosad	Grape	6851	• Thiophanate Methyl	Sunflower	5352
• Spinosad	Mint	7347	• Triazamate	Hops	6477
• Spinosad	Nectarine	7580	• Trifloxystrobin	Carrot	7045
• Spinosad	Onion (Green)	6652	• Trifloxystrobin	Celery	7046
• Spiroxamine	Hops	6946	• Zinc Phosphide	Alfalfa	6632
• Sulfentrazone	Bean (Lima)	7583	• Zinc Phosphide	Bean (Lima)	2127
• Tebuconazole	Barley	6513	• Zinc Phosphide	Collard	6401
• Tebuconazole	Beet (Garden)	6353	• Zinc Phosphide	Greens (Mustard)	6402
• Tebuconazole	Collard	6232	• Zinc Phosphide	Pea (Succulent)	2129
• Tebuconazole	Garlic	7197	• Zinc Phosphide	Spinach	1736
• Tebuconazole	Onion (Dry Bulb)	7196	• Zinc Phosphide	Tomato	2131
• Tebuconazole	Onion (Green)	7245	• Ziram	Pepper (Bell)	4088
• Tebuconazole	Squash (Winter)	6322			

ATTACHMENT 8**Ornamental Pest Control Registrations - 2001**

Pest Control Agent	Commodity	PR#	Pest Control Agent	Commodity	PR#
• Acephate	English Daisy (Bellis perennis)	19246A	• Bordeaux Mixture	Maple, Red (Acer rubrum)	11899A
• Azoxystrobin	Douglas Fir (Pseudotsuga menziesii)	20252A	• Bordeaux Mixture	Maple, Red (Acer rubrum)	11900A
• Azoxystrobin	Fir (Abies)	20254A	• Bordeaux Mixture	Maple, Sugar (Acer saccharum)	11901A
• Azoxystrobin	Fir (Abies)	20255A	• Bordeaux Mixture	Maple, Sugar (Acer saccharum)	11902A
• Bendiocarb	Azalea (Rhododendron)	19171A	• Bordeaux Mixture	Pear (Non-Bearing) (Pyrus communis)	11897A
• Bendiocarb	Azalea (Rhododendron)	19180A	• Bordeaux Mixture	Pear (Non-Bearing) (Pyrus communis)	11898A
• Bendiocarb	Azalea (Rhododendron)	19189A	• Bordeaux Mixture	Plum (Non-Bearing) (Prunus sp.)	11895A
• Bendiocarb	Begonia	19177A	• Bordeaux Mixture	Plum (Non-Bearing) (Prunus sp.)	11896A
• Bendiocarb	Begonia	19186A	• Bordeaux Mixture	Poplar (Populus)	12028A
• Bendiocarb	Begonia	19195A	• Bordeaux Mixture	Willow (Salix)	12029A
• Bendiocarb	Carnation (Dianthus caryophyllus)	19174A	• Candida oleophila	Apple (Non-bearing) (Malus)	18956A
• Bendiocarb	Carnation (Dianthus caryophyllus)	19183A	• Candida oleophila	Azalea (Rhododendron)	18960A
• Bendiocarb	Carnation (Dianthus caryophyllus)	19192A	• Candida oleophila	Bunchberry (Cornus Canadensis)	18957A
• Bendiocarb	Hemlock (Tsuga)	12089A	• Candida oleophila	Cedar, Western red (Thuja plicata)	20236A
• Bendiocarb	Hemlock (Tsuga)	12090A	• Candida oleophila	Cedar, Western red (Thuja plicata)	20237A
• Bendiocarb	Holly (Ilex)	19173A	• Candida oleophila	Conifer	20307A
• Bendiocarb	Holly (Ilex)	19182A	• Candida oleophila	Crocus (Colchicum)	20301A
• Bendiocarb	Holly (Ilex)	19191A	• Candida oleophila	Daffodil (Narcissus)	20300A
• Bendiocarb	Laurel (Kalmia)	12084A	• Candida oleophila	Douglas fir (Pseudotsuga menziesii)	20230A
• Bendiocarb	Rhododendron	19169A	• Candida oleophila	Douglas fir (Pseudotsuga menziesii)	20231A
• Bendiocarb	Rhododendron	19178A	• Candida oleophila	Douglas fir (Pseudotsuga menziesii)	20299A
• Bendiocarb	Rhododendron	19187A	• Candida oleophila	Fir (Abies)	20234A
• Bendiocarb	Spruce (Picea)	19172A	• Candida oleophila	Fir (Abies)	20235A
• Bendiocarb	Spruce (Picea)	19181A	• Candida oleophila	Holly (Ilex)	18961A
• Bendiocarb	Spruce (Picea)	19190A	• Candida oleophila	Hydrangea	20305A
• Bendiocarb	Winged euonymus (Euonymus alata)	19170A	• Candida oleophila	Lily (Lilium)	20302A
• Bendiocarb	Winged euonymus (Euonymus alata)	19179A	• Candida oleophila	Maple (Acer)	18958A
• Bendiocarb	Winged euonymus (Euonymus alata)	19188A	• Candida oleophila	Potentilla (Cinquefoil)	18962A
• Bordeaux Mixture	Aspen (Populus)	12026A	• Candida oleophila	Rhododendron	20306A
• Bordeaux Mixture	Cherry (Non-Bearing) (Prunus sp.)	11893A	• Candida oleophila	Rose (Rosa)	20304A
• Bordeaux Mixture	Cherry (Non-Bearing) (Prunus sp.)	11894A	• Candida oleophila	Tulip (Tulipa)	20303A
• Bordeaux Mixture	Crabapple (Non-Bearing) (Malus)	11891A	• Candida oleophila	Western hemlock (Tsuga heterophylla)	20232A
• Bordeaux Mixture	Crabapple (Non-Bearing) (Malus)	11892A	• Candida oleophila	Western hemlock (Tsuga heterophylla)	20233A
• Bordeaux Mixture	Flowering dogwood (Cornus florida)	11903A	• Chlorfenapyr	Chrysanthemum	12715A
• Bordeaux Mixture	Flowering dogwood (Cornus florida)	11904A	• Chlorfenapyr	New Guinea (Impatiens)	12716A
• Bordeaux Mixture	Kousa dogwood (Cornus kousa)	13136A	• Chlorfenapyr	Rose (Rosa)	18631A
• Bordeaux Mixture	Kousa dogwood (Cornus kousa)	13137A			
• Bordeaux Mixture	Lilac (Syringa)	12027A			

ATTACHMENT 8 (Continued)

Pest Control Agent	Commodity	PR#	Pest Control Agent	Commodity	PR#
• Clethodim	Boxwood (Buxus)	19609A	• Dithiopyr	Blanket flower (Gaillardia)	17261A
• Clethodim	Bridal-Wreath spirea (Spiraea)	19601A	• Dithiopyr	Camellia	18744A
• Clethodim	Candytuft (Iberis)	17256A	• Dithiopyr	Candytuft (Iberis)	17267A
• Clethodim	Lilyturf, Creeping (Liriope spicata)	20713A	• Dithiopyr	Candytuft (Iberis)	18510A
• Clethodim	Lilyturf, Creeping (Liriope spicata)	20734A	• Dithiopyr	Cypress, Leyland (Cupressocyparis leylandii)	18745A
• Clethodim	Pinks (Dianthus)	19611A	• Dithiopyr	Fern, Sprengeri (Asparagus densiflorus)	18743A
• Clethodim	Potentilla (Cinquefoil)	19602A	• Dithiopyr	Maple, Red (Acer rubrum)	18740A
• Clofentezine	Ageratum	10185A	• Dithiopyr	Oak, Live; southern (Quercus virginiana)	18754A
• Clofentezine	Juniper (Juniperus)	11302A	• Dithiopyr	Sage, Scarlet (Salvia splendens)	12315A
• Clofentezine	Juniper (Juniperus)	11305A	• Dithiopyr	Yarrow (Achillea millefolium)	12306A
• Clofentezine	Marigold, Field/Pot (Calendula)	10186A	• Extract of Neem Oil	Rose (Rosa)	19039A
• Clofentezine	Persian violet (Cyclamen)	10202A	• Fenpropathrin	Azalea (Rhododendron)	11101A
• Clofentezine	Rose (Rosa)	12728A	• Fludioxonil	Cedar, Western red (Thuja plicata)	14590A
• Clofentezine	Rose (Rosa)	12729A	• Fludioxonil	Cedar, Western red (Thuja plicata)	20279A
• Clofentezine	Snapdragon (Antirrhinum majus)	10198A	• Fludioxonil	Cedar, Western red (Thuja plicata)	20280A
• Copper Hydroxide (Kocide)	Maple (Acer)	02897A	• Fludioxonil	Douglas fir (Pseudotsuga menziesii)	14367A
• Copper Hydroxide (Kocide)	Pine (Pinus)	01907A	• Fludioxonil	Douglas fir (Pseudotsuga menziesii)	20273A
• Copper Hydroxide (Kocide)	Zinnia	02849A	• Fludioxonil	Douglas fir (Pseudotsuga menziesii)	20274A
• Copper Sulphate Pentahydrate	Gloxinia (Sinningia speciosa)	11237A	• Fludioxonil	Fir (Abies)	14640A
• Copper Sulphate Pentahydrate	Ladies-Eardrops (Fuchsia)	11238A	• Fludioxonil	Fir (Abies)	20277A
• Copper Sulphate Pentahydrate	Pine, Mugo & mugho (Pinus mugo)	11298A	• Fludioxonil	Fir (Abies)	20278A
• Copper Sulphate Pentahydrate	Pine, Mugo & Mugho (Pinus mugo)	11299A	• Mancozeb	Flowering quince (Chaenomeles)	00021A
• Copper Sulphate Pentahydrate	Rose periwinkle (Catharanthus roseus)	11233A	• Mancozeb + Zoxamide	Balsam (Impatiens)	19225A
• Copper Sulphate Pentahydrate	Snapdragon (Antirrhinum majus)	11236A	• Mancozeb + Zoxamide	Camellia	19220A
• Cyromazine (Foliar)	Carnation (Dianthus caryophyllus)	09926A	• Mancozeb + Zoxamide	Chrysanthemum	19221A
• Cyromazine (Foliar)	Geranium (Pelargonium)	09924A	• Mancozeb + Zoxamide	Geranium (Geranium sp.)	20347A
• Cyromazine (Foliar)	Geranium (Pelargonium)	09927A	• Mancozeb + Zoxamide	Maple, Red (Acer rubrum)	19228A
• DCNA	Douglas fir (Pseudotsuga menziesii)	05993A	• Mancozeb + Zoxamide	Pansy (Viola)	19231A
• DCNA	Douglas fir (Pseudotsuga menziesii)	05994A	• Mancozeb + Zoxamide	Pansy (Viola)	20338A
• DCNA	Redwood (Sequoia sempervirens)	05991A	• Mancozeb + Zoxamide	Pine, Red (Pinus resinosa)	19235A
• DCNA	Redwood (Sequoia sempervirens)	05992A	• Mancozeb + Zoxamide	Pinse, Scotch (Pinus sylvestris)	19233A
• Dithiopyr	Azalea, Formosa (Rhododendron sp.)	18755A	• Mancozeb + Zoxamide	Pine, White (Pinus strobus)	19234A
• Dithiopyr	Black-eyed Susan (Rudbeckia hirta)	17259A	• Mancozeb + Zoxamide	Rose (Rosa)	20342A
			• Myclobutanil	Bee balm (Monarda didyma)	19214A
			• Oryzalin	Blanket flower (Gaillardia)	11648A
			• Oryzalin	Chrysanthemum	11874A

ATTACHMENT 8 (Continued)

Pest Control Agent	Commodity	PR#	Pest Control Agent	Commodity	PR#
• Oryzalin	Cypress, Leyland (Cupressacyparis leylandii)	12796A	• Oxyfluorfen	Flowering dogwood (Cornus florida)	05542A
• Oryzalin	Foxglove (Digitalis)	11150A	• Oxyfluorfen	Flowering dogwood (Cornus florida)	12839A
• Oryzalin	Foxglove (Digitalis)	11151A	• Oxyfluorfen	Maple (Acer)	02349A
• Oryzalin	Holly (Ilex)	12805A	• Oxyfluorfen	Maple, Red (Acer rubrum)	12829A
• Oryzalin	Leopards-Bane (Doronicum)	11148A	• Oxyfluorfen	Maple, Sugar (Acer saccharum)	12830A
• Oryzalin	Leopards-Bane (Doronicum)	11149A	• Oxyfluorfen	Oak (Quercus)	00545A
• Oryzalin	Lilac (Syringa)	12036A	• Oxyfluorfen	Oak (Quercus)	01746A
• Oryzalin	Magnolia, Star (Magnolia stellata)	17287A	• Oxyfluorfen	Red bud, Eastern (Cercis Canadensis)	10578A
• Oryzalin	Montauk daisy (Chrysanthemum keibels)	11611A	• Oxyfluorfen	Red bud, Eastern (Cercis Canadensis)	12835A
• Oryzalin	Ornamental cabbage (Brassica sp.)	13304A	• Oxyfluorfen	Sweetgum (Liquidambar)	12855A
• Oryzalin	Ornamental cabbage (Brassica sp.)	18460A	• Oxyfluorfen	Tulip tree (Liriodendron tulipifera)	08263A
• Oryzalin	Pampas grass (Cortaderia)	04363A	• Oxyfluorfen	Tulip tree (Liriodendron tulipifera)	12856A
• Oryzalin	Pinks (Dainthus)	06095A	• Oxyfluorfen	Walnut (Non-Bearing) (Juglans)	08260A
• Oryzalin	Pinks (Dianthus)	09144A	• Oxyfluorfen	Yew (Taxus)	08389A
• Oryzalin	Poplar (Populus)	17282A	• Oxyfluorfen + Oryzalin	Rhododendron	20699A
• Oryzalin	Shasta daisy (Chrysanthemum x superbum)	10757A	• Oxyfluorfen + Pendimethalin	Broom, Andorrna (Cytisus purgans)	20142A
• Oryzalin	Speedwell, Brooklime (Veronica)	10723A	• Oxyfluorfen + Pendimethalin	Camellia	18775A
• Oryzalin	Statice (Limonium)	10532A	• Oxyfluorfen + Pendimethalin	Geranium (Geranium sp.)	19506A
• Oryzalin	Statice (Limonium)	11451A	• Oxyfluorfen + Pendimethalin	Jasmine, Jessamine (Jasmimum)	18778A
• Oryzalin	Statice (Limonium)	11649A	• Oxyfluorfen + Pendimethalin	Oak (Quercus)	19546A
• Oryzalin	Stonecrop (Sedum)	04168A	• Oxyfluorfen + Pendimethalin	Oak, Live; southern (Quercus virginiana)	18784A
• Oryzalin	Stonecrop (Sedum)	12183A	• Oxyfluorfen + Pendimethalin	Red bud, Eastern (Cercis Canadensis)	19538A
• Oryzalin	Stonecrop ella. (Sedum kamtschaticum)	11620A	• Oxyfluorfen + Pendimethalin	Viburnum (Viburnum suspensum)	18786A
• Oryzalin	Sweetgum (Liquidambar)	12811A	• Pendimethalin	Abelia	19460A
• Oryzalin	Tickseed (Coreopsis)	10758A	• Pendimethalin	Andromeda (Pieris)	19485A
• Oryzalin	Tickseed (Coreopsis)	11621A	• Pendimethalin	Arborvitae (Thuja)	19494A
• Oryzalin	Treasure flower (Gazania)	18701A	• Pendimethalin	Arrowwood (Viburnum)	12913A
• Oryzalin	Yarrow (Achillea millefolium)	09145A	• Pendimethalin	Birch (Betula)	19465A
• Oryzalin	Yarrow (Achillea millefolium)	10751A	• Pendimethalin	Boxwood (Buxus)	19466A
• Oryzalin	Yarrow (Achillea millefolium)	12344A	• Pendimethalin	Camellia	19467A
• Oxadiazon	Treasure flower (Gazania)	18706A	• Pendimethalin	Canna	19429A
• Oxyfluorfen	Ash (Fraxinus)	08391A	• Pendimethalin	Cotoneaster	19470A
• Oxyfluorfen	Ash, White (Fraxinus Americana)	12842A	• Pendimethalin	False cypress (Chamaecyparis)	19468A
• Oxyfluorfen	Birch (Betula)	10582A	• Pendimethalin	Fire thorn (Pyracantha)	19488A
• Oxyfluorfen	Birch, River (Betula nigra)	12832A	• Pendimethalin	Flowering dogwood (Cornus florida)	19469A
• Oxyfluorfen	Crape myrtle (Lagerstroemia indica)	01737A	• Pendimethalin	Geranium (Geranium sp.)	12385A

ATTACHMENT 8 (Continued)

Pest Control Agent	Commodity	PR#	Pest Control Agent	Commodity	PR#
• Pendimethalin	Golden bells (Forsythia)	19475A	• Prodiamine	Hottentot fig (Carpobrotus)	09271A
• Pendimethalin	Heavenly bamboo (Nandina domestica)	19482A	• Prodiamine	Jasmine, Jessamine (Jasminum)	18731A
• Pendimethalin	Indian hawthorn (Raphiolepis indica)	19489A	• Prodiamine	Lily-of-the-nile (Agapanthus)	18726A
• Pendimethalin	Japanese barberry (Berberis thunbergii)	19464A	• Prodiamine	Pampas grass (Cortaderia)	04510A
• Pendimethalin	Jasmine, Cape, Common gardenia (Gardenia)	19476A	• Prodiamine	Photinia	04520A
• Pendimethalin	Jasmine, Jessamine (Jasminum)	19478A	• Pyridaben	Bulbous iris (I. Xiphium)	16491A
• Pendimethalin	Lily (Lilium)	19454A	• Pyridaben	Bulbour iris (I. Xiphium)	16764A
• Pendimethalin	Madwort (Alyssum)	11454A	• Pyridaben	Cardinal flower, Indian pink (Lobelia cardinalis)	16503A
• Pendimethalin	Madwort (Alyssum)	11462A	• Pyridaben	Cardinal flower, Indian pink (Lobelia cardinalis)	16776A
• Pendimethalin	Mexican fan palm (Washingtonia robusta)	19623A	• Pyridaben	Potentilla (Cinquefoil)	16373A
• Pendimethalin	Oleander, Rosebay (Nerium oleander)	19483A	• Pyridaben	Potentilla (Cinquefoil)	16646A
• Pendimethalin	Oregon grape (Mahonia aquifolium)	19481A	• Pyridaben	Spruce (Picea)	16573A
• Pendimethalin	Pygmy date palm (Phoenix roebelenii)	19622A	• Pyridaben	Winged euonymus (Euonymus alata)	16350A
• Pendimethalin	Rose mallow (Hibiscus)	19477A	• Pyriproxyfen	Chrysanthemum	19161A
• Pendimethalin	Southern yew (Podo- carpus macrophyllus)	19486A	• Pyriproxyfen	Coleus, Fla menettle (Coleus)	19160A
• Pendimethalin	Spruce (Picea)	19484A	• Pyriproxyfen	Leatherleaf, Fig (Ficus)	19162A
• Pendimethalin	Stonecrop (Sedum)	11453A	• Pyriproxyfen	Pothos (Epipremnum aureum)	19163A
• Pendimethalin	Stonecrop (Sedum)	11461A	• Pyriproxyfen	Yew (Taxus)	18623A
• Pendimethalin	Weigela	19498A	• Pyriproxyfen	Yew (Taxus)	18624A
• Pendimethalin	Xylosma	19499A	• Tefluthrin	Azalea (Rhododendron)	19164A
• Pendimethalin	Yew (Taxus)	19493A	• Tefluthrin	Begonia	20222A
• Permethrin	African violet (Saintpaulia)	08769A	• Tefluthrin	Camellia	11755A
• Permethrin	Azalea (Rhododendron)	06971A	• Tefluthrin	Camellia	11756A
• Permethrin	Buttercup (Ranunculus)	08476A	• Tefluthrin	Crape myrtle (Lagerstroemia indica)	11751A
• Potassium Bicarbonate	Japanese spurge (Pachysandra terminalis)	19087A	• Tefluthrin	Crape myrtle (Lagerstroemia indica)	11752A
• Potassium Bicarbonate	Japanese spurge (Pachysandra terminalis)	19088A	• Tefluthrin	English ivy (Hedera helix)	11753A
• Potassium Bicarbonate	Pine, Austrian (Pinus nigra)	19073A	• Tefluthrin	English ivy (Hedera helix)	11754A
• Potassium Bicarbonate	Pine, Austrian (Pinus nigra)	19074A	• Tefluthrin	False spirea (Astilbe)	20208A
• Potassium Bicarbonate	Pine, Jap. Black (Pinus thunbergiana)	19075A	• Tefluthrin	Holly, Chinese (Ilex cornuta)	11744A
• Potassium Bicarbonate	Pine, Jap. Black (Pinus thunbergiana)	19076A	• Tefluthrin	Holly, Chinese (Ilex cornuta)	11746A
• Potassium Bicarbonate	Pine, Scotch (Pinus sylvestris)	19071A	• Tefluthrin	Holly, Japanese (Ilex crenata)	11743A
• Potassium Bicarbonate	Pine, Scotch (Pinus sylvestris)	19072A	• Tefluthrin	Holly, Japanese (Ilex crenata)	11745A
• Prodiamine	Azalea (Rhododendron)	04446A	• Tefluthrin	Hydrangea	20215A
• Prodiamine	Azalea, Formosa (Rhododendron sp.)	18738A	• Tefluthrin	Japanese hemlock (Tsuga sieboldii)	20219A
			• Tefluthrin	Juniper (Juniperus)	11747A
			• Tefluthrin	Juniper (Juniperus)	11748A

ATTACHMENT 8 (Continued)

Pest Control Agent	Commodity	PR#
• Tefluthrin	Lily, Plantain (Hosta)	19167A
• Tefluthrin	Pinks (Dianthus)	19166A
• Tefluthrin	Purpleleaf winter-creeper (Euonymus radicans)	20217A
• Tefluthrin	Rhododendron	11749A
• Tefluthrin	Rhododendron	11750A
• Tefluthrin	Rhododendron	20212A
• Tefluthrin	Spruce (Picea)	19165A
• Tefluthrin	Yew (Taxus)	20210A
• Triadimefon	Begonia	07772A
• Trifloxystrobin	Bottle brush (Callistemon)	14353A
• Trifloxystrobin	Bottle brush (Callistemon)	14626A

ATTACHMENT 9

Biopesticide Research and Development - 2001

Biopesticide Petitions/Amendments/Data Packages Submitted to EPA or Manufacturer in 2001

- Trichoderma hamatum isolate 382/vegetable bedding plants and ornamentals

IR-4 in cooperation with Ohio State University and Sellan Associates submitted a petition to EPA requesting an exemption from the requirement of a tolerance for the above use.

- Yeast hydrolysate for disease control on citrus, fruit crops, vegetables and ornamentals

IR-4 in cooperation with the University of Florida and Morse Enterprises submitted a petition to EPA requesting an exemption from the requirements of tolerance for yeast hydrolysate to aid in the prevention of certain plant diseases.

- Chondrostereum purpureum for control of weedy trees in forests and rights of way

IR-4 in cooperation with Mycologic, Inc. submitted a petition to EPA for the above use.

- Sucrose fatty-acid esters for control of soft body insects on all food commodities

Major amendment with additional data submitted to EPA.

- Sorbitol octanoate for control of soft bodied insects on all food commodities

IR-4 in cooperation with the AVA Chemical Ventures submitted a tolerance exemption petition to EPA for sorbitol octanoate for the control of insects.

IR-4

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01/02