

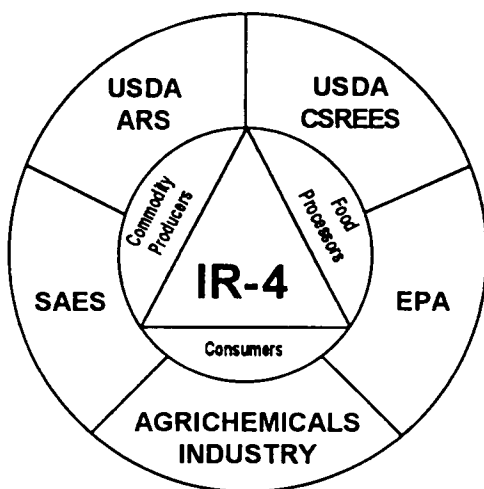
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# ANNUAL REPORT 1998

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**A NATIONAL AGRICULTURAL  
PROGRAM TO CLEAR  
PESTICIDES AND BIOLOGICAL  
PEST CONTROL AGENTS FOR  
MINOR USE**

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**INTERREGIONAL RESEARCH  
PROJECT NO. 4**

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

## January 1, 1998 - December 31, 1998

### INTRODUCTION

#### BACKGROUND

The Interregional Research Project No. 4 (IR-4 Project) was organized 35 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), 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 and floral crops, forest seedlings and turf grass 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.

#### PROGRAM

##### Food Use Program

In order for the program to be responsive to the needs of minor crop growers, project requests from growers, commodity groups, grower organizations and university research and extension agents/specialists are reviewed annually and targeted for research at the Food Use Workshop. The National Research Planning Meeting takes the high priority projects determined at the workshop and develops a field residue and laboratory analytical program for the following year. In 1998, the program scheduled 157 projects with 626 field trials. However, the scope of the program has changed rather dramatically the past ten years since the enactment of FIFRA 88 and the Food

Quality Protection Act (FQPA) in 1996. FIFRA 88 initiated a focused program to reregister many older products for which registrants lacked economic justification to maintain many key minor crop tolerances. This program led to the successful defense of over 700 minor crop registrations as part of a dedicated effort over the past 10 years.

The passage of the FQPA presented a new set of challenges which IR-4 had foreseen in 1995 when it developed a new Strategic Plan to seek minor crop registrations for the new, safer (Reduced Risk) chemicals in the pipeline for major crop registrations. Beside being safe to mammalian systems, these newer products are safe to birds, other wildlife, and beneficial organisms which make them ideal for use in integrated pest management (IPM) systems. The program started to integrate these new products into its project workload in 1996 and greatly expanded that effort in 1997 when over 30% of the projects involved the safer chemistries. In 1998, over 50% of the projects were devoted to this safer chemistry program. It is still unclear how FQPA will impact the availability of currently used products on minor crops. However it appears certain that some uses of organophosphate and carbamate insecticides as well as the crop protection chemicals with a B, carcinogen classification will be restricted or possibly eliminated for use on minor crops. Whatever the ultimate decisions made by EPA in 1999 as part of the FQPA mandate to assess over 3,000 tolerances by August, IR-4 is in a position to offer many Reduced Risk alternatives as we partner with the EPA to make these options available through final clearances or by using IR-4 generated residue data to support state Section 18 requests.

##### Ornamentals

Research to develop registration data (usually crop safety and efficacy) for new pest control products on ornamental (non-food) crops continues to be an important and successful component of our overall program. The IR-4 focus on safer, Reduced Risk chemicals for both food and non-food crops is clearly compatible with the objective of developing pest control solutions that are safe for workers, adaptable to existing cultural practices and are effective in IPM programs.

## **FUTURE DIRECTIONS**

The IR-4 Project is committed to implementing its Strategic Plan and addressing FQPA issues to insure that continued effective pest management tools and solutions are available to minor crop growers. The IR-4 National Headquarters has formed a New Technology Team to aggressively seek the newest chemistries and technologies from the crop protection industry and biopesticide companies for minor crop users and to expedite their registration. The 1999 program will again focus on the safer, Reduced Risk products with nearly 60% of the projects dedicated to this objective. The program has also committed to a defined project completion schedule of 30 months or less from initiation (project protocols in November) to petition submission. This means that the 1999 projects targeted in November 1998 will be submitted to the EPA on or before April 2001. This is an aggressive program but one that is critical for IR-4 to be a credible partner with the industry and facilitate availability of these newer products to the minor crop growers facing loss of older materials to FQPA actions.

This future focus on newer chemistries will be combined with tolerance development for existing effective products that have safe use patterns and resi-

due profiles. IR-4 will work on risk mitigation measures where feasible with the concurrence of the product registrants and commodity producers. Some of the older products are being reintroduced by the registrants as the active isomer where new production and separation technologies have allowed separation from the inactive isomer(s). IR-4 has supported these projects because they have resulted in 30 to 50% less product per acre and greatly enhance the environmental safety aspects of their use.

IR-4 will continue to support biopesticide projects in the future because they fit well into the safer, environmentally friendly category of pest control options for minor crop growers, especially where IPM compatible products are critical to crop production and management systems. Three biotechnology applications for minor crops will be supported in 1999 with projects on herbicide tolerant crops (lettuce, strawberries and sweet corn).

The 1998 Annual Report highlights the progress toward achieving the goal of providing safe and effective pest control (both traditional and biological) options for minor crop growers in an overall context of IPM compatible management systems.

## PROJECT:

National Research Service Project No. 4 (NRSP/IR-4). A National Agricultural Program to Clear Pest Control Agents for Minor Uses. January 1, 1998 to December 31, 1998.

## 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 7357 IR-4 food-use requests, an increase of 403 over the 6954 requests reported in 1997. Of these, 1143 are researchable projects with 1042 representing requests for new uses and 101 representing reregistration requests. SAES and USDA-ARS cooperators scheduled research on 157 requested clearance projects (studies) which represented 626 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 1998 are shown in Attachment 3.

### FOOD USE REGULATORY ACCOMPLISHMENTS:

#### New Tolerance, Exemption and Reregistration Approvals

The FQPA log jam at EPA has started to clear! IR-4 received 212 new minor use pesticide clearances in 1998. See Attachment 4. Twelve permanent tolerances were granted by EPA, that accounted for 59 new uses. IR-4 received tolerance exemptions on three biologicals: *Pseudomonas fluorescens*, Phospholipid, and Kaolin that accounted for 65 new uses. Forty-seven Section 18 time-limited tolerances were established based on IR-4 data that allowed for 72 emergency uses in 1998. The remaining 16 new clearances were based on tolerance exemption extensions, 24(c) labels, and EPA opinion letters for registration and reregistration projects. IR-4 expects that EPA will review even more packages in 1999 and that several of the Section 18 time-limited tolerances will become permanent.

#### Crop Group Definitions

IR-4 (USDA Interregional Research Project No. 4) published the revised second edition of *Food and Feed Crops of the United States* by G.M. Markle, J.J. Baron, and B.A. Schneider. This 517-page book covers selected botanical and horticultural information on 691 crop monographs which represent over 1000 crops. It is an important reference for anyone concerned with commodity vocabulary, crop groupings, and pesticide residue testing. It can be ordered from Meister Publishing Company for \$34.95 by calling 800-572-7740, FAXing 440-942-0662, or on the web at <<http://www.meisterpro.com>>.

EPA crop groups and definitions provide for the extension of tolerances or exemptions for a pest control agent from a representative or major crop to other closely related crops [see 40 CFR 180.1(h) and 180.41] to support minor crop growers, IPM, and crop rotations. IR-4 petitions to expand crop groups and definitions substantially leverage the number of pest control options available to producers of minor crops. In 1998, IR-4 submitted 1 crop group definition petition to EPA and obtained 7 favorable EPA reviews which represent 29 tropical/subtropical fruit crops. These are shown in Attachment 5.

## REGULATORY PROGRESS:

IR-4 continues to work with all facets of the project to decrease the time required to register a new pesticide on minor crops. 1998 provides several examples of where IR-4 initiated and completed projects in less than three years and in one case, a project was submitted to EPA in less than two years after initiation. IR-4 continues to move new minor uses through the registration process utilizing conventional methods, crop groupings, crop rotation rationale and a greater focus on the Reduced Risk pesticides. These efforts are being made in cooperation with EPA to support the objectives of the Food Quality Protection Act and will be providing growers with new safer pesticides for their integrated pest management programs (IPM). The following is a report of regulatory progress being made in obtaining future minor use registrations.

### EPA's Notice of Filing (NOF) of IR-4 Petitions

In addition to tolerances and exemptions approved by EPA in 1998, IR-4 received seven Notices of Filings for potential pesticide tolerances. These have been published for comment in the *Federal Register* and are likely to become tolerances in 1999. These are shown in Attachment 4.

### Data Package Development

During 1998, IR-4 Study Directors worked on 87 regulatory packages and amendments. These packages were either submitted to EPA for review or are being reviewed by registrants for potential registration. Fifty-two of these data packages were submitted to EPA in support of new tolerances, as amendments to existing petitions, or in support of re-registration of existing tolerances. Thirty-three tolerance petitions are still awaiting review by the registrant and/or Quality Assurance and will be submitted to EPA in the near future. Two data packages were submitted to registrants to support label expansions. These are shown in Attachment 6.

### Regulatory Documents in Preparation

Regulatory packages representing 162 new uses and re-registrations are currently in various stages of preparation. These are shown in Attachment 7.

## ORNAMENTAL RESEARCH AND REGISTRATIONS:

Since the IR-4 Ornaments Program was initiated, 17,851 pesticide clearance requests have been received. There are now 6707 ornamental requests including 4614 new requests in 1998. IR-4 funded 450 ornamental research trials in 1998 and prepared 13 registration packages containing 380 reports that were sent to registrants for future labeling. These included 7 fungicides, 5 insecticides, and one plant growth regulator. During the year, industry labeled 495 ornamental uses based on IR-4 data. These are shown in Attachment 8.

## BIOPESTICIDE RESEARCH AND REGISTRATIONS:

In 1998, IR-4 funded 14 research projects: Fumigant alternative to methyl bromide from rangeland plants; Antiaggregation pheromone MCH to protect Douglas-fir from Douglas-fir beetle; Sucrose octanoate for control of greenhouse pests on floriculture crops; Verbenone Pouch for control of Southern Pine Beetle; *Dactylaria higginsii* to control nutsedge in vegetables, ornamentals and turf; 4-Allylanisole as a repellent for conifer feeding bark beetles; Non-aflatoxin producing *Aspergillus flavus* to reduce aflatoxin contamination in Arizona cottonseed; Herbicide-resistant creeping bentgrass; Management of sparganothis fruitworm by pheromone-mediated mating disruption in cranberries; Biopesticides for specialty mushrooms *Lentinula edodes* and *Pleurotus* spp; *Beauveria bassiana* for insect control on lowbush blueberry; Improving *In-Vitro* Production of insect pathogenic fungi; *Pseudomonas aureofaciens* for control of brown patch and Pythium on turf; Microbial fortified potting mixes for control of *Thielaviopsis* Black Root Rot and *Xanthomonas* bacterial blight.

In 1998, EPA approved a tolerance exemption for Kaolin for insect control on 48 crops based on an IR-4 petition. EPA also approved the following temporary tolerance exemptions based on IR-4 petitions: Lysophosphatidylethanolamine on 13 fruit crops to promote ripening and extend the storage shelf life; *Pseudomonas fluorescens* strain PRA-25 as a planter box seed treatment for control of soil borne diseases of peas, snapbeans and sweet corn. In 1998, ten biopesticide petitions, amendments or data packages were submitted to EPA or the registrant. These are shown in Attachment 9.

## QUALITY ASSURANCE:

The IR-4 Project's Quality Assurance Unit 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)) are forwarded to the Study Directors and Testing Facility Management.

The IR-4 QAU is comprised of Regional QA Coordinators, University cooperating QA Officers and USDA-ARS QA Officers at analytical test sites. 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. In 1998, regular inspections included some 60+ facility inspections, 100+ field in-life inspections, and over 250 analytical in-life inspections and data audits. In addition, some 400+ of the 520 field data books from 1997 were received for auditing by the IR-4 QAU staff. In addition, the IR-4 QAU was involved with 12 EPA inspections in 1998. Five of the test sites inspected by the EPA were analytical, the remaining were field research stations.

The IR-4 Project QAU is making a change in 1999. This year will be the first year that all field in-life auditing will be performed by IR-4 full time QA Officers from each of the four regional leader laboratories. We wish to take this opportunity to thank the USDA-ARS participating field QA Officers for their assistance in previous years. Their help in conducting in-life field inspections has been a great service to the Project.

## PROGRAM COOPERATION AND COORDINATION:

The IR-4 program prides itself in being a model of interagency cooperation for a federally funded program by forming partnerships with the land grant university system, the crop protection industry, commodity interest groups, USDA-CSREES and ARS and the United States Environmental Protection Agency (USEPA) to bring crop protection solutions to minor crop growers. As part of this cooperative spirit, IR-4 requested that CSREES sponsor a Peer Review of the Project which was accomplished in December 1997 by a panel chaired by Dr. Dean Plowman, USDA-ARS Administrator (retired) and representatives from the USDA, EPA, commodity groups, the food processing industry, the crop protection industry and the land grant university system with a final report issued in January 1998. The report covered the areas of response to FQPA, Project operations, accomplishments, good laboratory practices (GLP), the ARS companion program and future outlook with specific recommendations for each area. Most of those recommendations have been implemented in 1998 programs or will be implemented in 1999. The panel was "in unanimous agreement that IR-4 is a very successful program which serves an important need to producers of agricultural products for ultimate consumption by the American public. The program is effectively and efficiently administered by a dedicated professional staff". The goal in 1999 and beyond will be to build on this basis and fully implement the recommendations of the panel.

IR-4 has actively pursued partnerships with the EPA, USDA-Office of Pest Management Policy (OPMP), the American Crop Protection Association (ACPA) and commodity groups to advance goals of mutual interest. Jim Jones, Director of EPA's Registration Division was a keynote speaker at our Annual Meeting in

October and brought encouraging news for additional minor crop priority petition review slots for FY 1999. Subsequent meetings with Mr. Jones, Pat Cimino, newly appointed Minor Use Team Leader and Ombudsperson, Hoyt Jamerson, Minor Use Officer and other EPA staff have led to important discussions on IR-4's petition formatting for more rapid Agency review, a streamlined proposal for minor crop Reduced Risk classification and multiple year Section 18 Time-Limited Tolerances. An important addition to the Headquarters Team has been Dr. Willis Wheeler as IR-4 Washington D.C. Liaison to interface with the EPA and other important partners within the Beltway. Willis has an office in the USDA's OPMP and has started to provide minor crop input into this program. He also has been invited to be a member of ACPA's Registration Round Table to discuss regulatory issues for minor crops. IR-4 had strong representation at the Tolerance Reassessment Advisory Committee (TRAC) Meetings held during the summer/fall period and read a statement into the public record concerning the impact of FQPA on minor crop protection chemicals and growers. In addition, IR-4 staff made numerous presentations at various scientific, commodity and trade association meetings to review progress of current programs and obtain input on future directions.

The 1998/1999 Food Use Prioritization Workshop was held in September to review and prioritize clearance requests received from growers, commodity groups and university researchers and extension agents/specialists in order to develop a preliminary 1999 program. This was the 22nd workshop held by IR-4 for this purpose and brought together about 150 partners including those submitting the requests plus representatives from the USDA, EPA, food processors and the crop protection industry to gain broad-based input. The Workshop provided the basis for the National Research Planning Meeting in October attended by the Project Management Committee, USDA (ARS and CSREES), Regional staff (Directors, and Laboratory and Field Coordinators) plus Headquarters staff where the final projects were prioritized and the field and laboratory assignments were made. An Annual Meeting was also held in early October to give everyone involved in IR-4 programs an opportunity to hear the Headquarters staff provide overall program updates, hear presentations by partners like Jim Jones/EPA and Ted Wilson/CSREES, and allow the four regions and ARS to meet and discuss policy, procedures and coordination opportunities.

## **USEFULNESS OF THE FINDINGS:**

IR-4 is the only public funded program responsible for supporting the registration of crop protection chemicals and biological control agents for use on minor food and non-food crops. The program has been responsible for data to support 4745 food use clearances (1405 since 1984), 5526 ornamental registrations (2043 since 1994) and has sponsored research on over 50 biopesticides which has resulted in registration on 107 minor crops.

As described previously, 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 the residue and other data required by the EPA to register minor crop pest solutions. All IR-4 research is carried out according to EPA approved Good Laboratory Practices with coordination and implementation by the Quality Assurance (QA) unit located at Headquarters and the regional QA Coordinators. 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 program. GLP compliance audits, both of facilities and actual field and laboratory work, provide assurance that IR-4 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, few safer and effective crop protection chemicals and biological alternatives would be available for use on minor crops.

## WORK PLANNED FOR 1999:

IR-4 will continue to seek input and technical guidance from 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 future role for IR-4 in bringing new biotechnology and transgenic traits to minor crop growers will be explored with some pilot programs. The New Technology Team will put together a Methyl Bromide Alternatives Program demonstration project in California and Florida on strawberries and tomatoes to provide side-by-side comparisons of the best existing technology and application techniques as well as integrate new technologies like transgenic crops when they become available.

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 SOPs and strive to further enhance our effectiveness and efficiency.

IR-4 will hold regionally sponsored training sessions scheduled for January, February and March of 1999 to be held in Gainesville, FL, Davis, CA and Madison, WI, respectively. These programs will focus on practical data collection, proper use of application equipment, and important updates based on lessons learned during '97-'98 EPA inspections of IR-4 participating test sites.

### Progress of Work and Principal Accomplishments:

#### Staff

Dr. Richard Guest, Executive Director, and member of the IR-4 Headquarters staff for 25 years retired November 1st. Dr. Robert Holm joined the Headquarters staff in June as Associate Executive Director and became Executive Director in November. Dr. Guest was honored at the Annual Meeting for his many years of dedicated service to the program.

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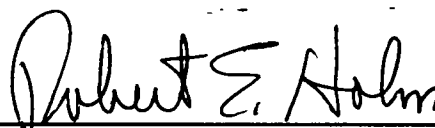
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Thompson, D.C. 1998. Fungicide and Nematicide Registration Update from IR-4. Phytopathology. Abstract 88(9) Supplement p. 89

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White, T.L. 1998. The Interregional Research Project #4 - Meeting Minor Crop Challenges of the New Millennium. 14th Annual Meeting of the Society of Quality Assurance. Abstract, p. II-17.

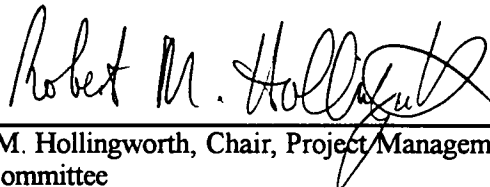
December 31, 1998



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

Approved:

2/6/99



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

2/9/99



N.P. Thompson, Chair, Administrative Advisors  
University of Florida

# **ATTACHMENT 1**

## **COOPERATING DEPARTMENTS AND AGENCIES**

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**

### **Administrative Advisers:**

Dr. B. Carlton, *Rutgers University*  
Dr. C. Hefferan, *U.S. Department of Agriculture*  
Dr. F. Horn, *U.S. Department of Agriculture*  
Dr. A. Lauchli, *University of California, Davis*  
Dr. E. Ortman, *Purdue University*  
Dr. N. Thompson, *University of Florida, Chair*

### **Representing**

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

### **Project Management Committee:**

Dr. R. Durst, *Cornell University, Geneva*  
Dr. R. Guest, *Rutgers University, Executive Director (Jan-Oct)*  
Dr. R. Hollingworth, *Michigan State University, Chair*  
Dr. R. Holm, *Rutgers University, Associate Executive Director (Jun-Oct), Executive Director (Nov-Dec)*  
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. C. Wei, *University of Florida and Auburn University*

Northeast Region  
IR-4 Headquarters  
Northcentral Region  
IR-4 Headquarters

Southern Region  
USDA-CSREES  
IR-4 Headquarters  
USDA-ARS  
Western Region  
Southern Region

## **SUPPORT GROUPS**

### **Headquarters Technical Staff:**

Dr. J. Baron, *Assistant to the Director*  
Dr. W. Biehn, *Senior Coordinator*  
Dr. J. Corley, *Coordinator*  
Dr. K. Dorschner, *Coordinator*  
Mr. R. Frank, *Coordinator*  
Dr. R. Guest, *Executive Director (Jan-Oct)*  
Ms. K. Hackett-Fields, *Project Associate*  
Dr. R. Holm, *Associate Executive Director (Jun-Oct), Executive Director (Nov-Dec)*  
Mrs. D. Infante, *Database Supervisor*  
Dr. D. Kunkel, *Manager, Registrations*  
Mrs. E. Lovuolo, *Administrative Assistant*  
Ms. E. Lurvey, *Coordinator*  
Prof. G. Markle, *Associate Director*  
Dr. J. Norton, *Special Project Manager*  
Mr. K. Samoil, *Coordinator*  
Mrs. P. Sarica, *Assistant Director for Administration*  
Dr. D. Thompson, *Coordinator*  
Dr. W. Wheeler, *IR-4 Washington DC Government Liaison*  
Ms. T. White, *Manager, Quality Assurance*

### **Headquarters Support Staff:**

Mr. J. Brashier, *Sec.*  
Mrs. C. Ferrazoli, *Sec.*  
Mrs. J. Streisand, *Sec.*

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

## **ATTACHMENT 1 (Continued)**

### **Regional Technical Staff:**

|                                                                           |                     |
|---------------------------------------------------------------------------|---------------------|
| Dr. R. Durst, <i>Regional Director</i>                                    | Northeast Region    |
| Mr. J. Martini, <i>Field Coordinator</i>                                  | Northeast Region    |
| Dr. P. Kovach-Larsson, <i>Laboratory Coordinator</i>                      | Northeast Region    |
| Ms. D. Snook, <i>Regional Quality Assurance Coordinator</i>               | Northeast Region    |
| Dr. R. Hollingworth, <i>Regional Director</i>                             | Northcentral Region |
| Dr. S. Miyazaki, <i>Field Coordinator</i>                                 | Northcentral Region |
| Dr. R. Leavitt, <i>Laboratory Coordinator</i>                             | Northcentral Region |
| Ms. C. Vandervoort, <i>Regional Quality Assurance Coordinator</i>         | Northcentral Region |
| Dr. M. Marshall, <i>Regional Director</i>                                 | Southern Region     |
| Dr. C. Wei, <i>Regional Director</i>                                      | Southern Region     |
| Dr. C. Meister, <i>Field Coordinator</i>                                  | Southern Region     |
| Ms. J. Yoh, <i>Laboratory Coordinator</i>                                 | Southern Region     |
| Mr. S. Fernando, <i>Regional Quality Assurance Coordinator</i>            | Southern Region     |
| Dr. T. Shibamoto, <i>Regional Director</i>                                | Western Region      |
| Mr. R. Melnicoe, <i>Field Coordinator (Jan-Aug)</i>                       | Western Region      |
| Ms. M. Reiff, <i>Program Coordinator and Field Coordinator (Sept-Dec)</i> | Western Region      |
| Mr. C. Mourer, <i>Laboratory Coordinator</i>                              | Western Region      |
| Mr. J. McFarland, <i>Regional Quality Assurance Coordinator</i>           | Western Region      |

### **Consultants Committee:**

Mr. G. Herndon, *EPA-OPP-HED*  
Mr. J. Holmdal, *ACPA Representative*  
Mr. H. Jamerson, *EPA-OPP-RD, Minor Use Officer*  
Dr. B. Schneider, *EPA-OPP-HED*

### **Commodity Liaison Committee (CLC):**

|                                                                                   |                    |
|-----------------------------------------------------------------------------------|--------------------|
| Dr. S. Balling, <i>Del Monte Foods</i>                                            | Walnut Creek, CA   |
| Dr. A. Bonanno, <i>Bonanno Farm Trust</i>                                         | Methuen, MA        |
| Mr. D. Botts, <i>Florida Fruit and Vegetable Association</i>                      | Orlando, FL        |
| Mr. J. Downing, <i>Cranberry Institute, CLC Chair</i>                             | East Wareham, MA   |
| Dr. H. Ewart, <i>Northwest Horticulture Council</i>                               | Yakima, WA         |
| Mrs. A. George, <i>Washington Hop Commission</i>                                  | Yakima, WA         |
| Mr. P. Korson, <i>Cherry Marketing Institute</i>                                  | Lansing, MI        |
| Mr. E. Kurtz, <i>EAK Ag., Inc.</i>                                                | Salinas, CA        |
| Mr. R. Lundy, <i>Mint Industry Research Council</i>                               | Stevenson, WA      |
| Mr. R. Olszack, <i>Tropical Fruit Growers of South Florida, Inc.</i>              | Homestead, FL      |
| Mr. R. Prewett, <i>Texas Vegetable Association</i>                                | Mission, TX        |
| Mr. R. Romang, <i>Ginseng Board of Wisconsin</i>                                  | Wausau, WI         |
| Mr. R. Ratto, <i>Ratto Brothers</i>                                               | Modesto, CA        |
| Mr. S. Rawlins, <i>American Farm Bureau Federation</i>                            | Park Ridge, IL     |
| Mr. C. Regelbrugge, <i>American Nursery &amp; Landscape Association</i>           | Washington, DC     |
| Ms. L. Schmale, <i>Society of American Florists</i>                               | Alexandria, VA     |
| Mr. M. Sorbello, Jr., <i>Sorbello Farms</i>                                       | Fulton, NY         |
| Mr. P. Traino, <i>Vegetable Growers' Association of New Jersey</i>                | Marlton, NJ        |
| Mr. D. Trinko, <i>MBG Marketing</i>                                               | Grand Junction, MI |
| Mr. D. Zuleger, <i>Wisconsin Potato &amp; Vegetable Growers Association, Inc.</i> | Antigo, WI         |

## **ATTACHMENT 1 (Continued)**

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

#### **Northeastern Region**

|                     |    |
|---------------------|----|
| Ms. B. Anderson     | NY |
| Ms. D. Snook        | NY |
| Consultants         |    |
| Dr. K. Kanagalingam | MD |

#### **Northcentral Region**

|                    |    |
|--------------------|----|
| Dr. B. Jensen      | WI |
| Dr. D. Killilea    | ND |
| Ms. C. Vandervoort | MI |

#### **Southern Region**

|                             |    |
|-----------------------------|----|
| Mr. S. Fernando             | FL |
| Dr. E. Gregory              | VA |
| Ms. R. Hornbuckle, USDA-ARS | GA |
| Dr. M. Lugo                 | PR |
| Ms. M. Matthews             | FL |
| Ms. P. Messick              | NC |

#### **Western Region**

|                          |    |
|--------------------------|----|
| Mr. M. Beran             | CA |
| Ms. D. Garvin            | OR |
| Ms. B. Glazier           | ID |
| Ms. K. Johnson           | ID |
| Dr. J. Maitlen, USDA-ARS | WA |
| Mr. J. McFarland         | CA |
| Ms. P. Yahata            | HI |

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

#### **Northeast Region**

|                         |    |
|-------------------------|----|
| Dr. J. Allen            | DC |
| Dr. R. Ashley           | CT |
| Dr. F. Caruso           | MA |
| Dr. G. Ghidui           | NJ |
| Dr. A. Gotlieb          | VT |
| Dr. A. Herner, USDA-ARS | MD |
| Dr. J. Hinz             | WV |
| Dr. J. Linduska         | MD |
| Dr. J. Locke, USDA-ARS  | MD |
| Mr. W. Lord             | NH |
| Mr. J. Martini          | NY |
| Dr. C. Mullin           | PA |
| Dr. D. Rutz             | NY |
| Dr. D. Wallace          | RI |
| Dr. R. Webb, USDA-ARS   | MD |
| Dr. S. Whitney          | DE |
| Dr. D. Yarborough       | ME |

#### **Northcentral Region**

|                         |    |
|-------------------------|----|
| Dr. M. Gleason          | IA |
| Dr. S. Kamble           | NE |
| Dr. M. Klein, USDA-ARS  | OH |
| Dr. C. Krause, USDA-ARS | OH |
| Dr. R. Lindquist        | OH |
| Dr. C. Marr             | KS |
| Dr. S. Miyazaki         | MI |
| Dr. C. Starbuck         | MO |
| Dr. D. Walgenbach       | MN |
| Dr. L. Wax, USDA-ARS    | IL |
| Dr. J. Wedberg          | WI |
| Dr. D. Williams         | IL |
| Dr. L. Wrage            | SD |
| Dr. A. York             | IN |
| Dr. R. Zollinger        | ND |

## **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. F. Eastin              | GA |
| Dr. C. Gilliam             | AL |
| Dr. H. Harrison, USDA-ARS  | SC |
| Mr. T. Hendricks, USDA-ARS | GA |
| Dr. R. Holloway            | TX |
| Dr. A. Johnson, USDA-ARS   | GA |
| Dr. T. Lavy                | AR |
| Dr. R. Leidy               | NC |
| Dr. C. Meister             | FL |
| Mr. M. New                 | OK |
| Dr. A. Simmons, USDA-ARS   | SC |
| Dr. C. Southards           | TN |
| Dr. R. Story               | LA |
| Dr. M. Weaver              | VA |
| Dr. L. Weston              | KY |
| Vacant                     | VI |

#### **Western Region**

|                            |    |
|----------------------------|----|
| Dr. D. Carling             | AK |
| Dr. R. Hirnyck             | ID |
| Dr. H. Deer                | UT |
| Dr. M. Ferrell             | WY |
| Dr. J. Jenkins             | OR |
| Dr. M. Kawate              | HI |
| Dr. R. Lee                 | NM |
| Dr. R. Linderman, USDA-ARS | OR |
| Dr. S. McDonald            | CO |
| Dr. R. Miller              | GU |
| Dr. J. Palumbo             | AZ |
| Dr. R. Parker              | WA |
| Dr. R. Petroff             | MT |
| Ms. M. Reiff               | CA |
| Dr. J. Seiber              | NV |
| Dr. H. Toba, USDA-ARS      | WA |
| Vacant, USDA-ARS           | WA |

## **ATTACHMENT 2**

### **FIELD AND LABORATORY RESEARCH COOPERATORS**

The IR-4 Project is grateful to the many agricultural scientists who participated in the field and laboratory research phases of the program in 1998. 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.

#### **NORTHEAST REGION**

|                  |    |                   |    |
|------------------|----|-------------------|----|
| Dr. A. Averill   | MA | Dr. P. Kovach     | NY |
| Dr. R. Bellinder | NY | Dr. J. Linduska   | MD |
| Dr. T. Bewick    | MA | Mr. W. Lord       | NH |
| Dr. E. Beste     | MD | Mr. L. Rossell    | NJ |
| Dr. F. Caruso    | MA | Dr. C. Smith      | PA |
| Dr. F. Drummond  | ME | Mr. J. Steffel    | PA |
| Dr. C. Eckenrode | NY | Dr. D. Yarborough | ME |
| Dr. B. Goulart   | PA | Dr. W. Wilcox     | NY |
| Mr. G. Jordan    | NY | Ms. A. Wise       | NY |

#### **NORTHCENTRAL REGION**

|                |    |                  |    |
|----------------|----|------------------|----|
| Dr. J. Baldock | WI | Dr. R. Leavitt   | MI |
| Dr. L. Binning | WI | Dr. J. Nalewaja  | ND |
| Dr. S. Clay    | SD | Ms. C. Nord      | KS |
| Mr. P. Clayton | IA | Mr. N. Riveland  | ND |
| Dr. J. Fleeker | ND | Mr. R. Spotanski | NE |
| Dr. R. Harvey  | WI | Dr. G. Su        | MI |
| Dr. H. Hopon   | WI | Dr. M. Weiss     | ND |
| Dr. C. Hoy     | OH | Dr. R. Wilson    | NE |
| Dr. D. Jardine | KS | Mr. J. Wise      | MI |
| Mr. B. Jenks   | ND | Dr. J. Wyman     | WI |
| Dr. A. Jones   | MI | Dr. A. York      | IN |
| Dr. A. Lamey   | ND | Dr. B. Zandstra  | MI |

#### **SOUTHERN REGION**

|                |    |                 |    |
|----------------|----|-----------------|----|
| Dr. J. Crane   | FL | Mr. W. Mitchem  | NC |
| Dr. T. Crocker | FL | Dr. D. Monks    | NC |
| Mr. L. Gregg   | TX | Dr. C. Mullins  | TN |
| Ms. L. Henry   | GA | Dr. W. Shamiyeh | TN |
| Mr. R. Ingles  | PR | Dr. W. Stall    | FL |
| Dr. R. Johnson | FL | Ms. J. Yoh      | FL |

## **ATTACHMENT 2 (Continued)**

### **WESTERN REGION**

|                    |    |
|--------------------|----|
| Dr. J. Adaskaveg   | CA |
| Dr. D. Anderson    | OR |
| Ms. B. Autotto     | CA |
| Dr. P. Banks       | NM |
| Dr. J. Barbour     | ID |
| Dr. M. Bari        | CA |
| Mr. C. Bell        | CA |
| Mr. M. Bolda       | CA |
| Mr. D. Curtis      | OR |
| Mr. J. DeFrancesco | OR |
| Mr. D. Diaz        | CA |
| Mr. B. Fischer     | CA |
| Mr. V. Fischer     | CA |
| Mr. K. Hembree     | CA |

|                   |       |
|-------------------|-------|
| Dr. M. Kawate     | HI    |
| Dr. Q. Li         | HI    |
| Mr. S. Mangini    | CA    |
| Mr. R. McReynolds | OR    |
| Mr. W. Meeks      | ID    |
| Mr. M. Miller     | CA    |
| Mr. T. Miller     | WA    |
| Dr. G. Moller     | ID    |
| Mr. C. Mourer     | CA    |
| Dr. M. Nelson     | CA    |
| Mr. B. Olsen      | CA    |
| Dr. T. Prather    | CA    |
| Mr. M. Qualls     | ID/WA |
| Mr. S. Robbins    | CA    |
| Mr. R. Wight      | WA    |
| Ms. S. Wingfield  | CO    |

### **USDA-ARS**

|                  |    |
|------------------|----|
| Ms. S. Benzen    | CA |
| Mr. L. Birch     | WA |
| Dr. H. Harrison  | SC |
| Dr. T. Hendricks | GA |
| Dr. A. Herner    | MD |
| Dr. A. Johnson   | GA |

|                 |    |
|-----------------|----|
| Mr. D. McCommas | TX |
| Ms. K. Morford  | WA |
| Dr. A. Simmons  | SC |
| Mr. C. Tappan   | OH |
| Dr. H. Toba     | WA |

## ATTACHMENT 3

### Food Use Research Projects

- 2,4-D/Potato/PR 1029
- Abamectin/Basil/PR 6755
- Abamectin/Celeriac/PR 6593
- Abamectin/Onion/PR 4068
- Abamectin/Papaya/PR 4078
- Azadirachtin/Lychee/PR 6678
- Azoxystrobin/Blueberry/PR 6721
- Azoxystrobin/Greens (Mustard)/PR 6813
- Azoxystrobin/Lychee/PR 6866
- Azoxystrobin/Mango/PR 6867
- Azoxystrobin/Mint/PR 6828
- Azoxystrobin/Mint (Fresh)/PR 6756
- Azoxystrobin/Pepper (Bell & Non-Bell)/PR 6868
- Azoxystrobin/Spinach/PR 6602
- Azoxystrobin/Strawberry/PR 6785
- Azoxystrobin/Watercress/PR 6722
- Benomyl/Mushroom/PR 6954
- Bifenthrin/Basil/PR 6642
- Bifenthrin/Celery/PR 4945
- Bifenthrin/Chives/PR 6641
- Carfentrazone-ethyl/Caneberry/PR 6758
- Chlorfenapyr/Greens (Mustard)/PR 6574
- Chlorfenapyr/Onion (Dry Bulb)/PR 6638
- Chlorothalonil/Pepper (Bell)/PR 0032
- Clethodim/Greens (Mustard)/PR 5222
- Clethodim/Mint/PR 5235
- Clethodim/Spinach/PR 6243
- Clopyralid/Canola/PR 5125
- Clopyralid/Cherry/PR 3622
- Clopyralid/Greens (Mustard)/PR 5010
- Clopyralid/Peach/PR 3621
- Clopyralid/Plum/PR 3625
- Clopyralid/Spinach/PR 5434
- Copper Hydroxide/Mustard (Oriental)/PR 2963
- Cyhexatin/Mint/PR 1715
- Cymoxanil/Hops/PR 6941
- Cyprodinil + Fludioxonil/Blueberry/PR 6724
- Cyprodinil + Fludioxonil/Caneberry (Raspberry)/PR 6838
- Cyromazine/Bean (Dry)/PR 6744
- Desmedipham/Spinach/PR 1922
- Diazinon/Filbert/PR 4099\*
- Dimethomorph/Hops/PR 6945
- Dimethomorph/Lettuce (Head)/PR 7021
- Dimethomorph/Lettuce (Leaf)/PR 6382
- Dimethomorph/Pepper (Bell & Non-Bell)/PR 6750
- Dimethomorph/Squash/PR 6751
- Diphenylamine/Pear/PR 6879
- Diquat/Tanier/PR 3066
- Endothall/Canola/PR 6783
- Ethalfluralin/Potato/PR 6567
- Ethofumesate/Onion (Dry Bulb)/PR 5398
- Fenarimol/Hops/PR 6940
- Fenbuconazole/Blueberry/PR 6368
- Fenbuconazole/Cranberry/PR 6853
- Fenhexamid/Blueberry/PR 6935
- Fenpropathrin/Currant/PR 6739
- Fenpropathrin/Pea (Succulent)/PR 2504
- Fenpropathrin/Pepper (Bell & Non-Bell)/PR 2503
- Ferbam/Caneberry (Raspberry)/PR 4981\*
- Ferbam/Cherry/PR 4085\*
- Fipronil/Plantain/PR 6712
- Fludioxonil/Cherry/PR 6933
- Fludioxonil/Peach (PH)/PR 6934
- Fludioxonil/Plum/PR 6943
- Folpet/Hops/PR 6947
- Fomesafen/Bean (Lima)/PR 6202
- Fosetyl-Al/Blueberry/PR 4937
- Fosetyl-Al/Onion (Green)/PR 6151
- Glufosinate/Corn (Sweet)/PR 6515
- Glyphosate/Bean (Dry)/PR 1128
- Glyphosate/Carrot/PR 1243
- Glyphosate/Flax/PR 6156
- Glyphosate/Pea (Dry)/PR 6139
- Glyphosate/Safflower/PR 6162
- Halosulfuron/Bean (Snap)/PR 6452
- Hexythiazox/Caneberry (Raspberry)/PR 3238
- Imazamox/Bean (Dry)/PR 6820
- Imazamox/Bean (Lima)/PR 6659
- Imazamox/Bean (Snap)/PR 6663
- Imazamox/Pea (Dry)/PR 6964
- Imazamox/Pea (Succulent)/PR 6664
- Imidacloprid/Bean (Dry)/PR 6528
- Imidacloprid/Blueberry (High Bush)/PR 6817
- Imidacloprid/Coffee/PR 6928
- Imidacloprid/Cucumber/PR 5488
- Imidacloprid/Okra/PR 6588
- Imidacloprid/Pea/PR 6398
- Imidacloprid/Peach/PR 6399
- Imidacloprid/Peanut/PR 6587
- Imidacloprid/Strawberry/PR 6260
- Imidacloprid/Turnip (Roots & Tops)/PR 6306
- Imidacloprid/Watercress/PR 6501



## **ATTACHMENT 3 (Continued)**

### **Food Use Research Projects (Continued)**

- Kresoxim-Methyl/Blueberry/PR 6725
- Linuron/Celeriac/PR 3557
- Linuron/Horseradish/PR 3609
- Linuron/Parsley/PR 3035
- Metalaxyl/Sapote (Mamey)/PR 4942
- Methoxyfenozide/Pineapple/PR 6713
- Metolachlor/Blueberry/PR 2616
- Metolachlor/Caneberry (Raspberry)/PR 3497
- Metolachlor/Carrot/PR 6281
- Metolachlor/Onion (Green)/PR 6717
- Metolachlor/Radish/PR 6899
- Metolachlor/Strawberry (Perennial)/PR 1676
- Myclobutanil/Artichoke/PR 7020
- Myclobutanil/Hops/PR 6939
- NAA/Tangerine/PR 6025\*
- Oxyfluorfen/Rhubarb/PR 6592
- Paraquat/Broccoli/PR 1475
- Paraquat/Okra/PR 1913
- Parquat/Pea (Dry)/PR 6741
- Paraquat/Safflower/PR 2939
- Paraquat/Taro/PR 6706\*
- PCNB/Cantaloup/PR 5090
- Pendimethalin/Asparagus/PR 6660
- Pendimethalin/Broccoli/PR 6505
- Pendimethalin/Carrot/PR 4084
- Pendimethalin/Kiwifruit/PR 6681
- Pendimethalin/Pear/PR 6760
- Phenmedipham/Spinach/PR 5693
- Pirimicarb/Asparagus/PR 1500
- Pirimicarb/Lettuce (Head & Leaf)/PR 0898
- Propiconazole/Artichoke/PR 6900
- Propiconazole/Coriander/PR 6371
- Pyridaben/Cherry/PR 6737
- Pyridaben/Hops/PR 6705
- Rotenone/Bean (Snap)/PR 4242\*
- Rotenone/Broccoli/PR 6769\*
- Rotenone/Caneberry (Blackberry)/PR 6897\*
- Rotenone/Lettuce (Leaf)/PR 6770\*
- Rotenone/Peach/PR 6781\*
- Rotenone/Tomato/PR 4241\*
- Spinosad/Artichoke/PR 6767
- Spinosad/Beet (Garden)/PR 6906
- Spinosad/Blueberry/PR 6850
- Spinosad/Cranberry/PR 6823
- Spinosad/Grape/PR 6851
- Spinosad/Onion (Dry Bulb)/PR 6651
- Spinosad/Pecan/PR 6824
- Spinosad/Strawberry/PR 6822
- Sulfentrazone/Asparagus/PR 6661
- Sulfentrazone/Cabbage/PR 6522
- Sulfentrazone/Horseradish/PR 6745
- Sulfentrazone/Sunflower/PR 6911
- Tebuconazole/Beet (Garden)/PR 6353
- Tebuconazole/Lychee/PR 6702
- Tebuconazole/Sunflower/PR 6414
- Tebufenozide/Grape/PR 6763
- Tebufenozide/Sweetpotato/PR 6512
- Thiazopyr/Cranberry/PR 6482
- Thiazopyr/Olive/PR 6916
- Thiophanate Methyl/Corn (Sweet)/PR 6956
- Thiophanate Methyl/Sunflower/PR 5352
- Ziram/Blueberry/PR 4745
- Ziram/Grape/PR 4116\*
- Ziram/Pepper (Bell)/PR 4088\*
- Ziram/Tomato/PR 4089\*

\* = Reregistration

## **ATTACHMENT 4**

### **New Tolerance, Exemption, Registration and Reregistration Approvals**

#### **Fungicides and Nematicides**

| <b><u>PROJECT</u></b>                                                    | <b><u>DATE*</u></b> | <b><u>TYPE ACTION</u></b>        |
|--------------------------------------------------------------------------|---------------------|----------------------------------|
| <b><u>Chemical/Crop/PR Number/(Uses)</u></b>                             |                     |                                  |
| • Pseudomonas fluorescens/PR 58B/(4)                                     | 7-17-98             | Temporary Tolerance<br>Exemption |
| • Methyl Bromide/Watermelon (soil treatment)<br>non-food use/PR 3847/(1) | 2-9-98              | EPA Opinion Letter               |
| • Myclobutanil/Strawberry/PR 4015/(1)                                    | 3-4-98              | Sect. 18 TLT                     |
| • Propiconazole/Cranberry/PR 6320/(1)                                    | 4-20-98             | Sect. 18 TLT                     |
| • Azoxystrobin/Watercress/PR 6722/(1)                                    | 5-12-98             | Sect. 18 TLT                     |
| • Azoxystrobin/Parsley/PR/(1)                                            | 6-5-98              | Sect. 18 TLT                     |
| • Fenbuconazole/Blueberry/PR 6368/(1)                                    | 6-10-98             | Sect. 18 TLT                     |
| • Fludioxonil/Peach, Nectarine, Plum/<br>PR 6934, 6943, 6944/(3)         | 6-24-98             | Sect. 18 TLT                     |
| • Myclobutanil/Caneberries/PR 5057, 5058/(2)                             | 7-10-98             | Sect. 18 TLT                     |
| • Myclobutanil/Hops/PR 6939/(1)                                          | 7-10-98             | Sect. 18 TLT                     |
| • Myclobutanil/Mint/PR 5409/(2)                                          | 7-17-98             | Sect. 18 TLT                     |
| • Tebuconazole/Pistachio/PR 6710/(1)                                     | 7-21-98             | Sect. 18 TLT                     |
| • Myclobutanil/Artichoke/PR 7020/(1)                                     | 9-16-98             | Sect. 18 TLT                     |
| • Myclobutanil/Asparagus/PR 5414/(1)                                     | 9-16-98             | Sect. 18 TLT                     |
| • Tebuconazole/Sunflower Seed & Oil/PR 6414/(2)                          | 10-7-98             | Sect. 18 TLT                     |
| • Mancozeb/Ginseng/PR 992/(1)                                            | 10-9-98             | Sect. 18 TLT                     |
| • Tebuconazole/Hops/PR 6672/(1)                                          | 12-2-98             | Sect. 18 TLT                     |
| • Thiabendazole/Lentil/PR 6531/(1)                                       | 12-4-98             | Sect. 18 TLT                     |
| • Ziram/Blueberry/PR 4745                                                | 4-28-98             | 24(c)-NJ                         |

#### **Herbicides and Plant Growth Regulators**

|                                                                                                    |         |                                        |
|----------------------------------------------------------------------------------------------------|---------|----------------------------------------|
| <b><u>Chemical/Crop/PR Number/(Uses)</u></b>                                                       |         |                                        |
| • Quizalofop/Mint/PR 2719/(2)                                                                      | 6-19-98 | Permanent Tolerance                    |
| • Pyridate/Chickpea/PR 3866/(1)                                                                    | 10-7-98 | Permanent Tolerance                    |
| • Sethoxydim/Leafy Vegetables/PR 3568, 2349,<br>2438, 4931/(25)                                    | 10-8-98 | Permanent Tolerance                    |
| • Sethoxydim/Tuberous and Corm Vegetables subgroup<br>& garden beet/PR 5757, 3034, 3033, 3032/(16) | 10-8-98 | Permanent Tolerance                    |
| • Sethoxydim/Globe Artichoke/PR 6102/(1)                                                           | 10-8-98 | Permanent Tolerance                    |
| • Sethoxydim/Caneberries/PR 5729, 5763/(2)                                                         | 10-8-98 | Permanent Tolerance                    |
| • Glyphosate/Durian, Mangosteen, Rambutan/<br>PR 6466, 6467, 6468/(3)                              | 10-8-98 | Permanent Tolerance                    |
| • Phospholipid/Selected Crops (13)/PR 85B/(13)                                                     | 6-12-98 | Temporary Tolerance<br>Exemption       |
| • Ethephon/Blueberry/PR 4460/(1)                                                                   | 8-18-98 | Reregistration - EPA<br>Opinion Letter |
| • Terbacil/Watermelon/PR 2841/(1)                                                                  | 2-4-98  | Sect. 18 TLT                           |
| • Oxyfluorfen/Strawberry/PR 3443/(1)                                                               | 2-4-98  | Sect. 18 TLT                           |
| • Pendimethalin/Mint/PR 5523/(2)                                                                   | 3-4-98  | Sect. 18 TLT                           |
| • Clomazone/Watermelon/PR 3943/(1)                                                                 | 3-18-98 | Sect. 18 TLT                           |
| • Clopyralid/Cranberry/PR 3882/(1)                                                                 | 4-29-98 | Sect. 18 TLT                           |
| • Glyphosate/Dry Pea, Lentil, Chickpea/PR 6139,<br>6140, 6141, 6142, 6137, 6138/(3)                | 6-10-98 | Sect. 18 TLT                           |
| • Clopyralid/Canola/PR 5125/(1)                                                                    | 6-10-98 | Sect. 18 TLT                           |
| • Endothall/Canola/PR 6783/(1)                                                                     | 8-7-98  | Sect. 18 TLT                           |
| • Desmedipham/Beet (Tops & Roots)/PR 337/(2)                                                       | 9-16-98 | Sect. 18 TLT                           |
| • Pronamide/Cranberry/PR 3152/(1)                                                                  | 9-16-98 | Sect. 18 TLT                           |
| • Pronamide/Grass (Seed Crop)/PR 5109/(1)                                                          | 9-16-98 | Sect. 18 TLT                           |
| • Paraquat/Dry Pea/PR 3200, 6741/(1)                                                               | 10-9-98 | Sect. 18 TLT                           |
| • Metolachlor/Spinach/PR 1217/(1)                                                                  | 12-2-98 | Sect. 18 TLT                           |
| • Metolachlor/Pepper/PR 2986/(1)                                                                   | 3-4-98  | 24(c) - TX<br>NOF                      |

## ATTACHMENT 4 (Continued)

### Herbicides and Plant Growth Regulators (Con't)

#### Chemical/Crop/PR Number/(Uses)

|                                                                                                                |          |     |
|----------------------------------------------------------------------------------------------------------------|----------|-----|
| • Metolachlor/Grasses (seed crop)/PR 6345                                                                      | 3-4-98   | NOF |
| • Gibberellic Acid/All RAC's/PR 1037                                                                           | 10-23-98 | NOF |
| • 2,4-D/Soybean (preplant)/PR 1167                                                                             | 12-11-98 | NOF |
| • Sethoxydim/Asparagus, Carrot, Mint, Cranberry,<br>Horseradish/PR 2046, 2132, 2200, 2202, 2471,<br>4009, 6540 | 12-30-98 | NOF |

### Insecticides & Miticides

#### Chemical/Crop/PR Number/(Uses)

|                                                                |          |                     |
|----------------------------------------------------------------|----------|---------------------|
| • Cypermethrin/Green Onion/PR 3963/(1)                         | 9-11-98  | Permanent Tolerance |
| • Esfenvalerate/Mustard Greens/PR 1657/(5)                     | 9-11-98  | Permanent Tolerance |
| • Esfenvalerate/Kiwifruit/PR 3945/(1)                          | 9-11-98  | Permanent Tolerance |
| • Esfenvalerate/Artichoke/PR 3845/(1)                          | 9-11-98  | Permanent Tolerance |
| • Esfenvalerate/Kohlrabi/PR 3714/(1)                           | 9-11-98  | Permanent Tolerance |
| • Imidacloprid/Cucurbits/PR 6425/(12)                          | 2-25-98  | Extended TLT        |
| • Kaolin/All Foods/PR 83B/(48)                                 | 2-25-98  | Exempt              |
| • Spinosad/Potato/PR 6653/(1)                                  | 6-5-98   | EUP                 |
| • Bifenthrin/Cabbage/PR 5176/(1)                               | 1-14-98  | Sect. 18 TLT        |
| • Tebufenozide/Turnip Tops/(1)                                 | 3-18-98  | Sect. 18 TLT        |
| • Bifenthrin/Cucurbits/PR 4150, 4151, 4152/(3)                 | 4-1-98   | Sect. 18 TLT        |
| • Imidacloprid/Cucurbits/PR 5179, 5180, 5181/(12)              | 4-1-98   | Sect. 18 TLT        |
| • Bifenthrin/Raspberry/PR 5004/(1)                             | 7-10-98  | Sect. 18 TLT        |
| • Abamectin/Celeriac/PR 6593/(1)                               | 8-7-98   | Sect. 18 TLT        |
| • Zinc Phosphide/Timothy Grass & Alfalfa/<br>PR 6632, 6055/(2) | 8-25-98  | Sect. 18 TLT        |
| • Fenpropathrin/Currant/PR 6739/(1)                            | 9-9-98   | Sect. 18 TLT        |
| • Tebufenozide/Cranberry/PR 6334/(1)                           | 9-30-98  | Sect. 18 TLT        |
| • Pyridaben/Cranberry/PR 6671/(1)                              | 10-5-98  | Sect. 18 TLT        |
| • Hexythiazox/Date/PR 6957/(1)                                 | 10-13-98 | Sect. 18 TLT        |
| • Bifenthrin/Canola/PR 6057/(1)                                | 10-7-98  | Sect. 18 TLT        |
| • Imidacloprid/Beet (Root)/PR 6305                             | 10-7-98  | Sect. 18 TLT        |
| • Imidacloprid/Turnip (Roots & Tops)/PR 6306/(2)               | 10-7-98  | Sect. 18 TLT        |
| • Abamectin/Basil/PR 6755/(1)                                  | 10-7-98  | Sect. 18 TLT        |
| • Zinc Phosphide/Sugar Beet (Roots & Tops)/<br>PR 3951/(2)     | 12-9-98  | Sect. 18 TLT        |
| • Zinc Phosphide/Potato/PR 6123/(1)                            | 12-9-98  | Sect. 18 TLT        |
| • Tebufenozide/Sweet Potato/PR 6346/(1)                        | 12-18-98 | Sect. 18 TLT        |
| • Cyfluthrin/Dried Hops/PR 4120                                | 4-15-98  | NOF                 |
| • Cinnamaldehyde/All Foods/PR 91B                              | 8-28-98  | NOF                 |
| • Amitraz/Deer/PR 90B                                          | 3-31-98  | EUP (Add MD)        |

\* Dates listed with Temporary Tolerances, Sect. 18 TLT, Permanent Tolerances, Extended TLT, EUP, and NOF are *Federal Register* dates.

**Terms Defined**

- TLT = Time-limited tolerance
- EUP = Experimental Use Permit
- 24(c) = Special Local Need Registration
- NOF = EPA Notice of Filing (Proposal)

## ATTACHMENT 5

### **Crop Groups: Definitions and Favorable Reviews**

#### **Submission**

Lemon = Lemon, lime and their hybrids which includes West Indian lime, Key lime, Mexican lime, Bartender lime, Tahiti lime, Persian lime, Green lemon, Sweet lime, Palestine lime and Limequat.

#### **Favorable Reviews**

##### **The First Step Towards the Establishment of Tropical/Subtropical Crop Definitions**

A major step has been taken towards the establishment of several tropical/subtropical crop definitions. In August, Dr. Bernie Schneider, Senior Plant Physiologist, completed an analysis of 7 tropical/subtropical crop definitions and presented them to the Chemistry Science Advisory Committee (CHEMSAC), Health Effects Division, Office of Pesticide Programs. This constitutes the approval of five new definitions and the expansion of two existing definitions. Although approval does not make the additions law, it is a giant first step for research and petition purposes.

IR-4 has submitted a number of petitions to the U.S. EPA to amend the crop definitions (40 CFR 180.1 (h)) to include a number of tropical/subtropical commodities. The definitions allow the use of magnitude of residue data from the representative crop to be used to support the registration of pest management substances for the other commodities included in that definition.

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

| Representative Crop | 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; passion fruit ( <i>Passiflora</i> spp.); and acerola |
| Lychee              | Lychee; longan; Spanish lime; rambutan; and pulasan                                                   |

Modifications or expansions have also been approved for two existing crop definitions. Cherimoya, ilama, soursop and biriba will be added to the existing sugar apple definition, which currently covers sugar apple, atemoya and custard apple. White sapote will be added to the citrus fruits definition, as well as the Citrus Fruits Crop Group (40 CFR 180.41 (10)).

These definitions also closely follow the Codex system of edible and inedible peel which will help with harmonization. The Citrus group is already well accepted internationally. Guava is the representative crop for the edible peel group, which includes passion fruit, the one change from the Codex.

CHEMSAC approval does not make it the law, but is a first step towards approval of the rule (law). Only when the rule is signed and published in the *Federal Register* are the additions official. However, the immediate effect of the approval is that IR-4 can start to generate data on the representative crops (avocado or papaya, grapefruit, guava, lychee, and sugar apple) with the reasonable assurance that these data will be sufficient to register the other members of the definition when the data are complete.

When the rule is passed, data supporting existing tolerances on the representative crops can also be used for registrations in the other commodities. For example, some products are registered in avocados. These registrations could be used to support registration in the other commodities in this group, including papaya.

## **ATTACHMENT 5 (Continued)**

### **Favorable Reviews (Con't)**

Given the limited areas for production and low consumption of tropical fruit, costs are too high to merit developing residue data on each and every commodity. The use of crop definitions in tropical/subtropical fruits will provide production tools for other tropical fruit, without the time and expense of generating residue data on each and every commodity. At the moment, there is very little available to combat insect, disease and weed problems in most tropical fruit. IR-4 has received over thirty pesticide clearance requests for avocados, mangos and papaya, over 20 for atemoya with additional requests for sugar apple and cherimoya, to name a few. This lack of production tools has been a limit on the expansion of the tropical fruit industry in the U.S., as well as opportunities to develop integrated pest management programs for tropical/subtropical fruit. The use of crop definitions to support registrations remove some of the limitations.

The potential research savings could amount to \$2.5 million on a yearly basis if IR-4 worked on all the commodities in the new tolerance groups with just one pest control material.

## **ATTACHMENT 6**

### **Data Packages Completed**

(E=submitted to EPA; M=submitted to manufacturer and Quality Assurance;  
Q=submitted to Quality Assurance; S=submitted to state agency)

#### **NEW TOLERANCE PETITIONS**

|                                        |     |                                         |        |
|----------------------------------------|-----|-----------------------------------------|--------|
| • Benomyl/Canola/5144                  | E/M | • Metalaxyl (Mefenoxam)/Sugar           |        |
| • Bifenthrin/Bean (Snap)/6423          | E/M | apple/494                               | M      |
| • Bifenthrin/Bean (Lima)/6252          | M   | • Methomyl/Chicory/4107                 | E      |
| • Bifenthrin/Broccoli/5272             | M   | • Metolachlor/Asparagus/1908            | M      |
| • Bifenthrin/Cabbage/5176              | M   | • Metolachlor/Rhubarb/6666              | E/M    |
| • Bifenthrin/Cauliflower/5273          | M   | • Metolachlor/Spinach/1217              | E      |
| • Bifenthrin/Canola/6057               | M   | • Metolachlor/Swiss chard/6391          | E/M    |
| • Bifenthrin/Eggplant/5401             | E/M |                                         |        |
| • Bifenthrin/Grape/5335                | M   | • PCNB/Radish/0633                      | Q      |
| • Bifenthrin/Pea (Succulent)/5237      | E/M | • Pendimethalin/Grasses (seed)/4912     | Q      |
| • Chlorothalonil/Ginseng/0988          | Q   | • Pyridate/mint/3927                    | M      |
| • Clethodim/Clover/6218                | M   | • Sethoxydim/Horseradish/2471           | E      |
| • Clethodim/Cucumber/5219              | E/M | • Spinosad/Cilantro/7349                | M      |
| • Clethodim/Pepper (Bell)/5226         | E/M | • Spinosad/Potato/6650                  | E- EUP |
| • Clethodim/Pepper (Non-Bell)/5355     | E/M | • Spinosad/Tuberous Corm group          |        |
| • Clethodim/Strawberry/5230            | M   | (Potato)/6653                           | E/M    |
| • Cyfluthrin/Dry pea/6533              | M   | • Spinosad/Turnip tops/7269             | M      |
| • Esfenvalerate/Canola/5150            | Q   | • Tebuconazole/Squash(summer)/5279      | Q      |
| • Ethalfluralin/Canola/6883            | E   | • Tebuconazole/Cucumber/5277            | Q      |
| • Fenbuconazole/Blueberries/6368       | E   | • Tebuconazole/Mango/6426               | M      |
| • Fenpropathrin/Cucumber/2502          | M   | • Tebuconazole/Peach(post harvest)/6551 | Q      |
| • Fenpropathrin/Squash/2507            | M   | • Tebufenozide/Blueberry/6407           | E/M    |
| • Fludioxonil + cyprodinil/Onion       |     | • Tebufenozide/Canola/6473              | E/M    |
| (crop group 3)/5033                    | E/M | • Tebufenozide/Cranberry/6344           | E/M    |
| • Fludioxonil + cyprodinil/Strawberry/ |     | • Tebufenozide/Raspberry/6405           | E/M    |
| 6790                                   | E/M | • Tebufenozide/Turnip/6346              | E/M    |
| • Linuron/Rhubarb/6591                 | E/M | • Tebufenozide/Mint/6437                | E/M    |
| • Linuron/Celeriac/3557                | E/M | • Tebuconazole/Turnip greens/6234       | M      |
| • Mancozeb/Ginseng/992                 | E   | • Zinc Phosphide/Potato/6123            | M      |
| • Mefenoxam/Carambola/4939             | M   | • Zinc Phosphide/Bean (Snap)/2126       | M      |
| • Mefenoxam/Kiwifruit/3050             | M   | • Zinc Phosphide/Blueberry/2958         | M      |
|                                        |     | • Zinc Phosphide/Caneberry/2957         | M      |

#### **RE-REGISTRATION PETITIONS**

|                                      |     |                                |     |
|--------------------------------------|-----|--------------------------------|-----|
| • Azinphos-methyl/Pepper (Bell)/6017 | E   | • Malathion/Chestnut/A4783     | E   |
| • Azinphos-methyl/Pepper (Non-Bell)/ |     | • Malathion/Mango/4814         | E   |
| 6111                                 | E   | • Malathion/Passion Fruit/3726 | E/M |
| • Azinphos-methyl/Cabbage/4761       | E   | • Malathion/Pineapple/4830     | E/M |
| • Diazinon/Fig/4101                  | E/M | • MCPB/Pea/5470                |     |
| • Dimethoate/Turnip/4451             | E   | • Methidathion/Mango/4537      | E/M |
| • Diuron/Asparagus/5415              | E   | • Phosmet/Cranberry/4625       | E/M |
| • Diuron/Banana/5514                 | E   | • Phosmet/Sweet Potato/3463    | E   |
| • Diuron/Pear/5441                   | M   |                                |     |

## **ATTACHMENT 6 Continued**

### **Data Packages Completed (Continued)**

(E=submitted to EPA; M=submitted to manufacturer and Quality Assurance;  
Q=submitted to Quality Assurance; S=submitted to state agency)

#### **MAJOR AMENDMENTS TO PETITIONS:**

|                                                  |   |                                                                                                |   |
|--------------------------------------------------|---|------------------------------------------------------------------------------------------------|---|
| • Bifenthrin/Artichoke/5145<br>(FQPA and NOF)    | E | • Imidacloprid/Cucurbit Veg./5180,<br>5181, 5179 (Residue Data)                                | E |
| • Bifenthrin/Cucurbits/4150<br>(FQPA and NOF)    | E | • Mefenoxam/Brassica Leafy Veg./<br>1696, 2283, 2284, 5351, 6284,<br>6285, 6370 (NOF and DRES) | E |
| • Cypermethrin/Onion Green/3963<br>(NOF and LOA) | E | • Metolachlor/Grasses (Seed Crop)/6345<br>(Residue Data and NOF)                               | E |
| • Fomesafen/Snapbean/3011<br>(Residue Data)      | E | • Oxyfluorfen/Grasses (Seed Crop)/3968<br>(Residue Data and NOF)                               | E |
| • Fosetyl-Al/Blueberry/4937<br>(TLT, NOF)        | E |                                                                                                |   |

#### **REGISTRATION PETITIONS**

|                                                       |     |                                                    |   |
|-------------------------------------------------------|-----|----------------------------------------------------|---|
| • Cryolite/Blueberry/4600<br>(Residue Data)           | E/M | • Metalaxyl and Copper/Grape/6266<br>(Shorten PHI) | M |
| • Cryolite/Blueberry (Lowbush)/6264<br>(Residue Data) | E/M | • Prometryn/Fennel/2480<br>(Crop Safety Data)      | M |
| • Linuron/Carrot/6765<br>(Crop Safety Data)           | M   | • Ziram/Blueberry/A4745<br>(Residue Data)          | M |

## **ATTACHMENT 7**

### **Regulatory Documents in Preparation**

- 2,4-D/Caneberry (Raspberry)/PR 2844
- Azoxystrobin/Grasses (Seed)/PR 6690
- Bacillus Thuringiensis/Pea (Pigeon)/PR 2812
- Benomyl/Parsley/PR 1863
- Bifenthrin/Bean (Lima)/PR 6252
- Bifenthrin/Lettuce (Head)/PR 5274
- Bifenthrin/Pea (Southern)/PR 7177
- Bifenthrin/Pepper (Bell)/PR 5281
- Bifenthrin/Bifenthrin/Pepper (Non-Bell)/PR 5280
- Bifenthrin/Tomato (GH)/PR 4868
- Captan/Cherry/PR 5418
- Chlorothalonil/Atemoya/PR 3721
- Chlorothalonil/Caneberry (Blackberry)/PR 2165
- Chlorothalonil/Horseradish/PR 2392
- Chlorothalonil/Persimmon/PR 5388
- Clethodim/Bean (Lima)/PR 5206
- Clethodim/Bean (Succulent)/PR 5205
- Clethodim/Beet (Garden)/PR 6245
- Clethodim/Carrot/PR 5217
- Clethodim/Celery/PR 5218
- Clethodim/Cranberry/PR 5358
- Clethodim/Horseradish/PR 6283
- Clethodim/Pea (Dry)/PR 5204
- Clethodim/Pea (Succulent)/PR 5202
- Clethodim/Radish/PR 5227
- Clethodim/Rhubarb/PR 5297
- Clethodim/Turnip (Roots & Tops)/PR 6244
- Clomazone/Broccoli/PR 3569
- Clomazone/Mint/PR 6680
- Clomazone/Mint (Peppermint)/PR 3155
- Clomazone/Mint (Spearment)/PR 4972
- Clopyralid/Pear/PR 3624
- Clopyralid/Strawberry/PR 5262
- Cryolite/Mint/PR 6438
- Cyromazine/Bean (Snap)/PR 3909
- DCPA/Parsley/PR 3000
- DCPA/Parsley/PR 4005
- Diuron/Mint (Spearment)/PR 6952
- Esfenvalerate/Brussels Sprout/PR 1656
- Esfenvalerate/Cabbage, Chinese (Bok Choy)/PR 3161
- Esfenvalerate/Carambola/PR 3429
- Esfenvalerate/Endive/PR 2241
- Esfenvalerate/Kenaf/PR 4857
- Esfenvalerate/Kale/PR 2843
- Esfenvalerate/Okra/PR 3384
- Esfenvalerate/Okra/PR 3536
- Esfenvalerate/Okra/PR 4613
- Esfenvalerate/Passion Fruit/PR 3694
- Esfenvalerate/Pea (Pigeon)/PR 2026
- Ethephon/Blueberry/PR 3877
- Ethephon/Coffee/PR 5489
- Ethephon/Guava/PR 4463
- Ethephon/Peach/PR 3920
- Ethoprop/Pineapple/PR 2860
- Fomesafen/Bean (Dry)/PR 5403
- Fosetyl-Al/Cranberry/PR 3504
- Fosetyl-Al/Lingonberry/PR 6950
- Glyphosate/Cantaloup/PR 1747
- Glyphosate/Chayote/PR 6225
- Glyphosate/Cucumber/PR 1748
- Glyphosate/Hops/PR 4162
- Glyphosate/Lentil/PR 6137
- Glyphosate/Lentil/PR 6138
- Glyphosate/Pea (Pigeon)/PR 2029
- Glyphosate/Pumpkin/PR 1749
- Glyphosate/Squash/PR 1851
- Glyphosate/Strawberry/PR 1409
- Glyphosate/Watermelon/PR 1750
- Halosulfuron/Cantaloup/PR 6366
- Halosulfuron/Cucumber/PR 6364
- Hydrogen Cyanamide/Apple/PR 6304
- Hydrogen Cyanamide/Peach/PR 6303
- Hydrogen Cyanamide/Plum/PR 6177
- Imidacloprid/Bean (Lima)/PR 6201
- Imidacloprid/Bean (Snap)/PR 5477
- Imidacloprid/Tomato/PR 5487
- Lactofen/Eggplant/PR 6430
- Lactofen/Pepper (Bell)/PR 4400
- Lactofen/Pepper (Non-Bell)/PR 6143
- Lactofen/Tomato/PR 4163



## **ATTACHMENT 7 Continued**

### **Regulatory Documents in Preparation (Continued)**

- Linuron/Fennel/PR 3608
- Linuron/Lupine/PR 5134
- Mancozeb/Cucurbits/PR 4165
- Metalaxyl (Mefenoxam)/Artichoke (Seed)/PR 4978
- Metalaxyl (Mefenoxam)/Caneberry (Blackberry)/PR 3078
- Metalaxyl (Mefenoxam)/Lingonberry/PR 6951
- Metolachlor/Broccoli (Chinese)/PR 3247
- Metolachlor/Cabbage (Bok Choy)/PR 2256
- Metolachlor/Collard/PR 1216
- Metolachlor/Mustard (Chinese)/PR 3248
- Metolachlor/Onion (Dry Bulb)/PR 2702
- Metolachlor/Onion (Dry Bulb)/PR 5396
- Metolachlor/Spinach/PR 6336
- NAA/Pomegranate/PR 5389
- Napropamide/Arrugula/PR 3374
- Napropamide/Persimmon/PR 5094
- Napropamide/Radish, Oriental/PR 3253
- Napropamide/Tarragon/PR 2148
- Napropamide/Thyme/PR 2149
- Oxyfluorfen/Blueberry/PR 2133
- Oxyfluorfen/Brussels Sprout/PR 5123
- Oxyfluorfen/Caneberry (Raspberry)/PR 3616
- Oxyfluorfen/Cantaloup/PR 3710
- Oxyfluorfen/Chives/PR 3572
- Oxyfluorfen/Cucumber/PR 3711
- Oxyfluorfen/Kale/PR 6108
- Oxyfluorfen/Kenaf/PR 6318
- Oxyfluorfen/Pepper (Chili)/PR 2125
- Oxyfluorfen/Squash (Summer)/PR 3712
- Oxyfluorfen/Strawberry (Perennial)/PR 3443
- Oxyfluorfen/Sugarcane/PR 4980
- Oxyfluorfen/Sweetpotato/PR 3939
- Paraquat/Cabbage/PR 1479
- Paraquat/Calabaza/PR 3926
- Paraquat/Cantaloup/PR 1476
- Paraquat/Gourds (Edible)/PR 3070
- Paraquat/Onion (Dry Bulb)/PR 2983
- Paraquat/Pea (Succulent)/PR 5193
- Paraquat/Persimmon/PR 6247
- Paraquat/Pumpkin/PR 2985
- Paraquat/Squash (Summer)/PR 2982
- Paraquat/Squash (Winter)/PR 6503
- Paraquat/Tanier/PR 4968
- Paraquat/Turnip Greens/PR 2981
- Paraquat/Watermelon/PR 2976
- PCNB/Radish/PR 633
- PCNB/Turnip (Roots & Tops)/PR 836
- Pendimethalin/Fig/PR 6607
- Pendimethalin/Grape/PR 5740
- Pendimethalin/Grasses (Seed)/PR 4912
- Pendimethalin/Greens (Mustard)/PR 1986
- Pendimethalin/Kenaf/PR 5208
- Pendimethalin/Leek/PR 4578
- Pendimethalin/Turnip Greens/PR 1987
- Pendimethalin/Onion (Green)/PR 5097
- Pendimethalin/Pepper (Bell)/PR 2740
- Pendimethalin/Pepper (Non-Bell)/PR 2219
- Pendimethalin/Strawberry/PR 2739
- Phenmedipham/Cabbage/PR 4057
- Prometryn/Dill/PR 1630
- Prometryn/Dill/PR 3040
- Prometryn/Fennel/PR 2480
- Prometryn/Parsley/PR 5160
- Pronamide/Chicory (Tops)/PR 5027
- Pronamide/Cranberry/PR 3152
- Pronamide/Grasses (Orchard, Seed)/PR 5109
- Propiconazole/Pistachio/PR 6844
- Pyridaben/Cranberry/PR 6671
- Quizalofop/Pineapple/PR 5174
- Sethoxydim/Celery/PR 5702
- Sethoxydim/Kenaf/PR 6319
- Sethoxydim/Okra/PR 2339
- Sethoxydim/Pistachio/PR 3707
- Spinosad/Spinach/PR 7348
- Tebuconazole/Okra/PR 6261
- Tebuconazole/Pumpkin/PR 5278
- Trifluralin/Dill/PR 1444
- Zinc Phosphide/Cantaloup/PR 3928
- Zinc Phosphide/Cucumber/PR 4333
- Zinc Phosphide/Squash (Summer)/PR 4331
- Zinc Phosphide/Watermelon/PR 3929
- Ziram/Tomato/PR C4089

## ATTACHMENT 8

### Ornamental Pesticide Registrations

- Acephate/Arborvitae (Thuja)/12713A
- Acephate/Aster/03094A, 04661A
- Acephate/Balsam (Impatiens)/01368A
- Acephate/Birch (Betula)/11691A
- Acephate/Chrysanthemum/11694A, 11695A
- Ancymidol/Angelonia (Angelonia Angustifolia)/13513A, 13519A
- Ancymidol/Coleus/13514A, 13520A
- Ancymidol/Coral Plant (Russelia Equisetiformis)/13553A, 13555A
- Ancymidol/Coral Porterweed (Stachytarpheta Mutabilis)/13554A, 13556A
- Ancymidol/Egyptian-Star Cluster (Pentas Lanceolata)/13518A, 13524A
- Ancymidol/Mexican Petunia (Ruellia Carolinensis)/13516A, 13522A
- Ancymidol/Sweet Potato Vine (Ipomoea Batatas)/13515A, 13521A
- Ancymidol/Yellow Shrimp Plant (Pachystachys Lutea)/13517A, 13523A
- Bendiocarb/Holly/13262A
- Bentazon/Crabapple, Non-Bearing (Malus)/05613A
- Bentazon/Holly (Ilex)/00048A, 00093A
- Bentazon/Marigold (Tagetes)/10834A
- Bentazon/Oak (Quercus)/00224A
- Bentazon/Petunia/10836A
- Bentazon/Yew (Taxus)/10666A
- Carbofuran/Azalea (Rhododendron)/11406A
- Carbofuran/Rhododendron/06837A
- Carbofuran/Yew (Taxus)/06838A
- Chlorothalonil/African Violet (Saintpaulia)/01905A
- Chlorothalonil/Ageratum/08617A
- Chlorothalonil/Fir (Abies)/00253A
- Chlorothalonil/Fuchsia/02634A
- Chlorothalonil/Gloxinia (Sinningia Speciosa)/07703A
- Chlorothalonil/Larkspur (Delphinium)/08621A
- Chlorothalonil/Nasturtium/07706A
- Chlorothalonil/Periwinkle (Vinca)/08625A
- Chlorothalonil/Persian Violet (Cyclamen)/12503A
- Chlorothalonil/Pinks (Dianthus)/08620A
- Chlorothalonil/Primrose (Primula)/04888A
- Chlorothalonil/Snapdragon (Antirrhinum Majus)/02578A
- Chlorothalonil/Vervain (Verbena)/08623A
- Chlorothalonil (Exotherm)/Poinsettia (Euphorbia Pulcherrima)/00019A
- Clethodim/Ageratum/13188A
- Clethodim/Snapdragon (Antirrhinum Majus)/13190A
- Clopyralid/Arborvitae/10412A
- Clopyralid/Azalea (Rhododendron)/11243A
- Clopyralid/Bridal Wreath (Spirea)/11068A
- Clopyralid/Christmas Trees/10414A
- Clopyralid/Crabapple, Non-Bearing (Malus)/11056A
- Clopyralid/Douglas Fir (Pseudotsuga Menziesii)/10415A
- Clopyralid/Fir (Abies)/10424A
- Clopyralid/Flowering Dogwood (Cornus Florida)/11053A
- Clopyralid/Juniper (Juniperus)/10413A
- Clopyralid/Maple (Acer)/11051A
- Clopyralid/Oak (Quercus)/11060
- Clopyralid/Pine (Pinus)/10502A
- Clopyralid/Pine, Mugo & Mugho (Pinus Mugo)/11076A
- Clopyralid/Rhododendron/11290A
- Clopyralid/Spruce (Picea)/10503A
- Clopyralid/Spruce, Norway (Picea Abies)/11073A
- Clopyralid/Spruce, White (Picea Glauca)/11074A
- Clopyralid/Yew (Taxus)/10504A
- Copper Hydroxide (Kocide)/Aglaonema/11192A
- Copper Hydroxide (Kocide)/Elm (Ulmus)/02928A
- Copper Hydroxide (Kocide)/Flag (Iris)/02884A
- Copper Hydroxide (Kocide)/Honey Locust (Gleditsia)/09966A
- Copper Hydroxide (Kocide)/Honeysuckle (Lonicera)/01481A, 02918A, 02919A
- Copper Hydroxide (Kocide)/Nephthytis (Syngonium Podophyllum)/04911A, 04920A, 11196A
- Copper Hydroxide (Kocide)/Rose-Of-Sharon (Hibiscus Syriacus)/10912A
- Copper Hydroxide (Kocide)/Snapdragon (Antirrhinum Majus)/02859A
- Copper Hydroxide (Kocide)/Umbrella Tree (Schefflera)/04906A, 04915A
- Cyfluthrin/Balsam (Impatiens)/10007A
- Cyfluthrin/Calendula/09762A
- Cyfluthrin/Carnation (Dianthus Caryophyllus)/09757A
- Cyfluthrin/Chrysanthemum/09758A
- Cyfluthrin/Geranium (Pelargonium)/09759A
- Cyfluthrin/Poinsettia (Euphorbia Pulcherrima)/09760A
- Cyfluthrin/Primrose (Primula)/09771A
- Cyromazine (Foliar)/Calendula/08895A
- Diazinon (E)/Wax Vine (Hoya)/03581A
- Diazinon (Microencapsulated)/Ageratum/10276A
- Diazinon (Microencapsulated)/Gazania/12147A
- Diazinon (Microencapsulated)/Japanese Spurge (Pachysandra Terminalis)/08163A
- Diazinon (Microencapsulated)/Scarlet Sage (Salvia Splendens)/10281A
- Diazinon (Microencapsulated)/Velvet Plant (Gynura Aurantiaca)/08132A
- Dithiopyr (EC)/Arrowwood (Viburnum)/11341A
- Dithiopyr (EC)/Fern, Tree (Asparagus Virgatus)/11270A
- Dithiopyr (EC)/Geranium (Geranium Sp.)/12309A
- Dithiopyr (EC)/Hawthorn (Crataegus)/11342A
- Dithiopyr (EC)/Honey Locust (Gleditsia)/11339A

## **ATTACHMENT 8 (Continued)**

### **Ornamental Pesticide Registrations (Continued)**

- Dithiopyr (EC)/Juniper (*Juniperus*)/11335A
- Dithiopyr (EC)/Lilac (*Syringa*)/11340A
- Dithiopyr (EC)/Maple Sugar (*Acer Saccharum*)/11338A
- Dithiopyr (EC)/Oak, Red (*Quercus Rubra*)/11337A
- Dithiopyr (EC)/Yew (*Taxus*)/11336A
- Dithiopyr (G)/Arrowwood (*Viburnum*)/11392A
- Dithiopyr (G)/Hawthorn (*Crataegus*)/11393A
- Dithiopyr (G)/Honey Locust (*Gleditsia*)/11390A
- Dithiopyr (G)/Juniper (*Juniperus*)/11386A
- Dithiopyr (G)/Lilac (*Syringa*)/11391A
- Dithiopyr (G)/Maple Sugar (*Acer Saccharum*)/11389A
- Dithiopyr (G)/Oak, Red (*Quercus Rubra*)/11388A
- Dithiopyr (G)/Yew (*Taxus*)/11387A
- Diuron/Ash (*Fraxinus*)/12002A
- Etridiazole (E)/Scarlet Sage (*Salvia Splendens*)/12154A
- Etridiazole (G)/Marigold (*Tagetes*)/12153A
- Etridiazole (G)/Petunia/12150A
- Etridiazole (G)/Shrub Verbena (*Lantana*)/11521A, 12155A
- Flutolanil/Azalea (*Rhododendron*)/12528A
- Flutolanil/Balsam (*Impatiens*)/12531A
- Flutolanil/Begonia/12532A
- Fosetyl-al/Arrowwood (*Viburnum*)/12511A
- Gliocladium Virens/Balsam (*Impatiens*)/11225A
- Gliocladium Virens/Begonia/11222A
- Gliocladium Virens/Cockscomb (*Celosia*)/11232A
- Gliocladium Virens/Marigold (*Tagetes*)/11229A
- Gliocladium Virens/Petunia/11223A
- Gliocladium Virens/Scarlet Sage (*Salvia Splendens*)/11227A
- Gliocladium Virens/Snapdragon (*Antirrhinum Majus*)/11221A
- Gliocladium Virens/Zinnia/11230A
- Isofenphos/Christmas Trees/09739A
- Isofenphos/Holly, Japanese (*Ilex Crenata*)/10686A
- Isoxaben/Arrowwood (*Viburnum*)/12781A
- Isoxaben/Birch, River (*Betula Nigra*)/12744A
- Isoxaben/Blue Fescue (*Festuca Cinerea*)/11778A
- Isoxaben/Ch. Pennestum (*Pennisetum Alopacuroides*)/12339A
- Isoxaben/False Spirea (*Astilbe*)/12336A, 12337A
- Isoxaben/Heath (*Erica*)/12333A
- Isoxaben/Heather (*Calluna*)/12332A
- Isoxaben/Holly, Blue (*Ilex X Meserveae*)/12762A
- Isoxaben/Japanese Flowering Cherry (*Prunus Sp.*)/12776A
- Isoxaben/Magnolia, Southern (*Magnolia Grandiflora*)/12769A
- Isoxaben/Redbud (*Cercis Canadensis*)/12747A
- Isoxaben/Wax Myrtle (*Myrica Cerifera*)/12773A
- Isoxaben + Trifluralin/Pygmy Date Palm (*Phoenix Roebelenii*)/13415A
- Mancozeb/Frangipani (*Plumeria*)/03025A
- Mancozeb/Gloxinia (*Sinningia Speciosa*)/07737A
- Mancozeb/Hackberry (*Celtis*)/02717A
- Mefenoxam/Bleeding Heart (*Dicentra*)/08535A, 08550A
- Mefenoxam/Snapdragon (*Antirrhinum Majus*)/12566A, 12707A
- Mefenoxam/Stonecrop (*Sedum*)/08548A
- Metolachlor (EC)/Snapdragon (*Antirrhinum Majus*)/13196A
- Metolachlor + Simazine/Birch (*Betula*)/13257A
- Oryzalin/Arrowwood (*Viburnum*)/12825A
- Oryzalin/Ash, White (*Fraxinus Americana*)/12798A
- Oryzalin/Bellflower (*Campanula*)/12123A
- Oryzalin/Birch, River (*Betula Nigra*)/12788A
- Oryzalin/Japanese Dogwood (*Cornus Kousa*)/12826A
- Oryzalin/Redbud (*Cercis Canadensis*)/12791A
- Oxadiazon/Baby's-breath (*Gypsophila Elegans*)/05277A, 06568A
- Oxadiazon/Bald Cypress (*Taxodium Distichum*)/01455A
- Oxadiazon/Blanket Flower (*Gaillardia*)/11154A, 11155A
- Oxadiazon/Blazing-star (*Liatris*)/09962A
- Oxadiazon/Cheddar Pink (*Dianthus Gratianopolitanus*)/12140A
- Oxadiazon/Cleyera Japonica/01471A
- Oxadiazon/Dahlia/08383A
- Oxadiazon/Daylily (*Hemerocallis*)/12115A
- Oxadiazon/Golden-rain Tree (*Koelreuteria Bipinnata*)/01059A, 01576A
- Oxadiazon/Hardy Ice Plant (*Delosperma Nubigenum*)/11793A
- Oxadiazon/Hardy Mum (*Dendranthema X Morifolium*)/11796A
- Oxadiazon/Lance Coreopsis (*Coreopsis Lanceolata L.*)/11861A
- Oxadiazon/Leopards Bane (*Doronicum*)/11152A, 11153A
- Oxadiazon/Lily, Plantain (*Hosta*)/12116A
- Oxadiazon/Linden (*Tilia*)/10476A
- Oxadiazon/Statice (*Limonium*)/01062A, 09239A
- Oxadiazon/Sweet William (*Dianthus Barbatus*)/05572A
- Oxadiazon/Tickseed (*Coreopsis*)/11626A
- Oxadiazon/Wild Sweet William (*Phlox Maculata*)/11627A
- Oxadiazon/Wisteria/00500A, 10541A
- Oxadiazon/Wooly Thyme (*Thymus*)/11310A

## **ATTACHMENT 8 (Continued)**

### **Ornamental Pesticide Registrations (Continued)**

- Oxadiazon (G)/Dahlia/11844A
- Oxadiazon (G)/Lamb's-ear (Stachys Byzantina)/11837A
- Oxadiazon (G)/Mock Orange (Philadelphus)/11834A
- Oxadiazon (G)/Peony (Paeonia)/08745A
- Oxadiazon (G)/Sweet William (Dianthus Barbatus)/11845A
- Oxyfluorfen/Crabapple Non-bearing (Malus)/12860A
- Oxyfluorfen/Crape Myrtle (Lagerstroemia Indica)/01740A
- Oxyfluorfen/Flowering Dogwood (Cornus Florida)/00515A
- Oxyfluorfen/Japanese Flowering Cherry (Prunus Sp.)/12864A
- Oxyfluorfen (EC)/Spruce, White (Picea Glauca)/08388A
- Oxyfluorfen + Oryzalin/Honeysuckle (Lonicera)/09469A
- Oxythioquinox/Japanese Spurge (Pachysandra Terminalis)/10445A
- Pendimethalin/Avens (Geum)/10989A, 11000A
- Pendimethalin/Birch, River (Betula Nigra)/12876A
- Pendimethalin/Blazing-star (Liatris)/11594A
- Pendimethalin/Crabapple Non-bearing (Malus)/12904A
- Pendimethalin/Cypress, Leyland (Cupressacyparis Leylandii)/12884A
- Pendimethalin/Flowering Dogwood (Cornus Florida)/12883A
- Pendimethalin/French Hydrangea (Macrophylla)/12889A
- Pendimethalin/Holly (Ilex)/12893A
- Pendimethalin/Holly, American (Ilex Opaca)/12892A
- Pendimethalin/Holly, Blue (Ilex X Meserveae)/12894A
- Pendimethalin/Holly, Fosters (Ilex X Attenuata)/12891A
- Pendimethalin/Honeylocust (Gleditsia)/12887A
- Pendimethalin/Japanese Dogwood (Cornus Kousa)/12914A
- Pendimethalin/Japanese Flowering Cherry (Prunus Sp.)/12908A
- Pendimethalin/Lagerstroemia Fauriei/12897A
- Pendimethalin/Lagerstroemia Indica X Fauriei/12898A
- Pendimethalin/Magnolia, Saucer (Magnolia Soulangiana)/12903A
- Pendimethalin/Magnolia, Southern (Magnolia Grandiflora)/12901A
- Pendimethalin/Magnolia, Star (Magnolia Stellata)/12902A
- Pendimethalin/Maple, Amur (Acer Ginnala)/12872A
- Pendimethalin/Maple, Red (Acer Rubrum)/12873A
- Pendimethalin/Maple, Sugar (Acer Saccharum)/12874A
- Pendimethalin/Maple, Trident (Acer Buergeranum)/12871A
- Pendimethalin/Pear, Bradford (Pyrus Calleryana)/12909A
- Pendimethalin/Rose-of-Sharon (Hibiscus Syriacus)/12888A
- Pendimethalin/Sweetgum (Liquidambar)/12899A
- Pendimethalin/Tulip Tree (Liriodendron)/12900A
- Pendimethalin/Wax Myrtle (Myrica Cerifera)/12905A
- Pendimethalin/Weeping Willow (Salix Babylonica)/12910A
- Pendimethalin/Western Mugwort (Artemesia Ludoviciana)/11590A
- Pendimethalin (G)/Chrysanthemum/11457A
- Pendimethalin (G)/Foxglove (Digitalis)/11459A, 11467A
- Pendimethalin (G)/Lobelia/12386A
- Pendimethalin (G)/Paperbark Maple (Acer Griseum)/13208A
- Pendimethalin (G)/Scarlet Sage (Salvia Splendens)/12391A
- Pendimethalin (G)/Yarrow (Achillea Millifolium)/12382A
- Permethrin/Freesia/08496A
- Permethrin/Poinsettia (Euphorbia Pulcherrima)/08448A
- Permethrin/Ash (Fraxinus)/13148A, 18078A
- Permethrin/Azalea (Rhododendron)/13167A, 18070A
- Permethrin/Beech (Fragus)/13165A, 18096A
- Permethrin/Birch (Betula)/13147A, 18077A
- Permethrin/Black Locust (Robinia Pseudoacacia)/13157A, 18088A
- Permethrin/Cherry Non-bearing (Prunus Sp.)/13151A, 18082A
- Permethrin/Cottonwood, Fremont (Populus Fremontii)/13158A, 18089A
- Permethrin/Elm (Ulmus)/13154A, 18085A
- Permethrin/Eucalypt (Eucalyptus)/13162A, 18093A
- Permethrin/Flowering Dogwood (Cornus Florida)/13155A, 18086A
- Permethrin/Hawthorn (Crataegus)/13160A, 18091A
- Permethrin/Hickory (Carya)/13161A, 18092A
- Permethrin/Honey Locust (Gleditsia)/13150A, 18081A
- Permethrin/Hop Hornbeam (Ostrya Virginiana)/13164A, 18095A
- Permethrin/Lilac (Syringa)/13140A, 18069A
- Permethrin/Maple (Acer)/13153A, 18084A

## ATTACHMENT 8 (Continued)

### Ornamental Pesticide Registrations (Continued)

- Permethrin/Mountain Ash (Sorbus)/13163A, 18094A
- Permethrin/Oak (Quercus)/13149A, 18080A
- Permethrin/Peach Non-bearing (Prunus Persica)/13152A, 18083A
- Permethrin/Pine, Loblolly (Pinus Taeda)/13141A, 18071A
- Permethrin/Pine, Pitch (Pinus Regida)/13142A, 18072A
- Permethrin/Pine, Red (Pinus Resinosa)/13146A, 18076A
- Permethrin/Pine, Scotch (Pinus Sylvestris)/13143A, 18073A
- Permethrin/Pine, Spruce (Pinus Glabra)/13145A, 18075A
- Permethrin/Pine, Virginia (Pinus Virginiana)/13166A, 18097A
- Permethrin/Pine, White (Pinus Strobus)/13144A, 18074A
- Permethrin/Rhododendron/13156A, 18087A
- Permethrin/Willow (Salix)/13159A, 18090A
- Prodiamine/Arrowwood (Viburnum)/12957A
- Prodiamine/Chinese Pistachio (Pistacia Chinensis)/12951A
- Prodiamine/Crabapple Non-bearing (Malus)/12948A
- Prodiamine/Flowering Dogwood (Cornus Florida)/12927A
- Prodiamine/French Hydrangea (Macrophylla)/12933A
- Prodiamine/Holly (Ilex)/12937A
- Prodiamine/Holly, American (Ilex Opaca)/12936A
- Prodiamine/Japanese Flowering Cherry (Prunus Sp.)/12952A
- Prodiamine/Lagerstroemia Indica X Fauriei/12942A
- Prodiamine/Magnolia, Saucer (Magnolia Soulangiana)/12947A
- Prodiamine/Magnolia, Southern (Magnolia Grandiflora)/12945A
- Prodiamine/Magnolia, Star (Magnolia Stellata)/12946A
- Prodiamine/Pear, Bradford (Pyrus Calleryana)/12953A
- Prodiamine/Rose-of-sharon (Hibiscus Syriacus)/12932A
- Prodiamine (2G)/Arborvitae (Thuja)/09720A
- Prodiamine (2G)/Arrowwood (Viburnum)/05241A, 06874A
- Prodiamine (2G)/Azalea (Rhododendron)/06461A, 07366A
- Prodiamine (2G)/Blue Spire (Perovskia)/12403A
- Prodiamine (2G)/Boltonia/12399A
- Prodiamine (2G)/Boxwood (Buxus)/05347A, 06864A
- Prodiamine (2G)/Cleyera Japonica/06865A
- Prodiamine (2G)/Cotoneaster/00902A, 06462A
- Prodiamine (2G)/Crape Myrtle (Lagerstroemia Indica)/09726A
- Prodiamine (2G)/False Dragon Head (Physotegia)/12404A
- Prodiamine (2G)/Firethorn (Pyracantha)/05270A, 06745A
- Prodiamine (2G)/Forsythia/05268A
- Prodiamine (2G)/Gardenia/05264A, 06866A
- Prodiamine (2G)/Geranium (Geranium Sp.)/12400A
- Prodiamine (2G)/Holly (Ilex)/05262A, 06468A
- Prodiamine (2G)/Japanese Pittosporum (Pittosporum Tobira)/05249A, 06872A
- Prodiamine (2G)/Juniper (Juniperus)/06459A, 06466A
- Prodiamine (2G)/Lobelia/12401A
- Prodiamine (2G)/Photinia/06871A
- Prodiamine (2G)/Pine (Pinus)/05256A, 06867A
- Prodiamine (2G)/Privet (Ligustrum)/05247A, 06868A
- Prodiamine (2G)/Purple Loosestrife (Lythrum)/12402A
- Prodiamine (2G)/Purpleleaf Wintercreeper (Euonymus Radicans)/06463A, 07369A
- Prodiamine (2G)/Rhododendron/05245A, 06467A
- Prodiamine (2G)/Rodgersia/12405A
- Prodiamine (2G)/Southern Yew (Podocarpus Macrophyllus)/05248A, 06873A
- Prodiamine (2G)/Weigela/09725A
- Prodiamine (2G)/Yarrow (Achillea Millifolium)/11631A
- Prodiamine (WDG)/Andromeda (Pieris)/11631A
- Prodiamine (WDG)/Arrowwood (Viburnum)/06918A
- Prodiamine (WDG)/Aucuba/06875A
- Prodiamine (WDG)/Barberry (Berberis)/09270A
- Prodiamine (WDG)/Begonia/09711A
- Prodiamine (WDG)/Bellflower (Campanula)/11442A
- Prodiamine (WDG)/Blue Spire (Perovskia)/12413A
- Prodiamine (WDG)/Boltonia/12409A
- Prodiamine (WDG)/Boxwood (Buxus)/06878A
- Prodiamine (WDG)/Bridal-wreath (Spirea)/09727A
- Prodiamine (WDG)/Butterfly Bush (Buddleia Davidii)/11663A, 11664A
- Prodiamine (WDG)/Carpobrotus/12437A

## ATTACHMENT 8 (Continued)

### Ornamental Pesticide Registrations (Continued)

- Prodiamine (WDG)/Cleyera Japonica/06880A
- Prodiamine (WDG)/Crabapple Non-bearing (Malus)/07367A
- Prodiamine (WDG)/Cypress (Cupressus)/09273A
- Prodiamine (WDG)/Daffodil (Narcissus)/09496A, 13168A
- Prodiamine (WDG)/Daylily (Hemerocallis)/09714A
- Prodiamine (WDG)/Douglas Fir (Pseudotsuga Menziesii)/02545A
- Prodiamine (WDG)/Evening Primrose (Oenothera)/12176A
- Prodiamine (WDG)/False Cypress (Chamaecyparis)/09719A
- Prodiamine (WDG)/False Dragon Head (Physotegia)/12414A
- Prodiamine (WDG)/Flowering Dogwood (Cornus Florida)/05271A
- Prodiamine (WDG)/Gardenia/06885A
- Prodiamine (WDG)/Geranium (Geranium Sp.)/12410A
- Prodiamine (WDG)/Hardy Ice Plant (Delosperma Nubigenum)/09274A
- Prodiamine (WDG)/Heavenly Bamboo (Nandina Domestica)/07379A, 07382A
- Prodiamine (WDG)/Hemlock (Tsuga)/00578A, 07370A
- Prodiamine (WDG)/Holly (Ilex)/04475A
- Prodiamine (WDG)/Holly, Japanese (Ilex Crenata)/12175A
- Prodiamine (WDG)/Honeysuckle (Lonicera)/09334A
- Prodiamine (WDG)/Hopbush (Dodonaea Cuneata)/09275A
- Prodiamine (WDG)/Japanese Pittosporum (Pittosporum Tobira)/06916A
- Prodiamine (WDG)/Juniper (Juniperus)/04495A
- Prodiamine (WDG)/Larkspur (Delphinium)/13124A, 13125A
- Prodiamine (WDG)/Lily (Lilium)/09674A, 12419A
- Prodiamine (WDG)/Lily, Plantain (Hosta)/09715A, 12438A
- Prodiamine (WDG)/Lilyturf (Liriope)/06869A, 06896A
- Prodiamine (WDG)/Lilyturf, Creeping (Liriope Spicata)/11347A
- Prodiamine (WDG)/Lilyturf, Giant (Liriope Muscari)/11866A
- Prodiamine (WDG)/Lobelia/12411A
- Prodiamine (WDG)/Magnolia/09721A, 11757A
- Prodiamine (WDG)/Maple (Acer)/06460A, 09235A
- Prodiamine (WDG)/Oak (Quercus)/06458A
- Prodiamine (WDG)/Oleander (Nerium Oleander)/09336A
- Prodiamine (WDG)/Pampas Grass (Cortaderia)/04432A, 06870A
- Prodiamine (WDG)/Peony (Paeonia)/09716A
- Prodiamine (WDG)/Periwinkle (Vinca)/09191A, 11809A
- Prodiamine (WDG)/Photinia/05257A
- Prodiamine (WDG)/Pine (Pinus)/06893A
- Prodiamine (WDG)/Potentilla (Cinquefoil)/12441A
- Prodiamine (WDG)/Privet (Ligustrum)/06894A
- Prodiamine (WDG)/Purple Loosestrife (Lythrum)/12412A
- Prodiamine (WDG)/Purpleleaf Wintercreeper (Euonymus Radicans)/07381A
- Prodiamine (WDG)/Shrub Verbena (Lantana)/11659A, 11660A
- Prodiamine (WDG)/Southern Yew (Podocarpus Macrophyllus)/06917A
- Prodiamine (WDG)/Spruce (Picea)/09337A
- Prodiamine (WDG)/Star Jasmine (Trachelospermum Jasminoides)/11840A
- Prodiamine (WDG)/Stonecrop (Sedum)/09724A
- Prodiamine (WDG)/Trailing Lantana (Lantana Montevicensis)/11661A, 11662A
- Prodiamine (WDG)/Yarrow (Achillea Millifolium)/11440A, 12407A
- Pronamide/Maple (Acer)/01117A
- Pronamide/Oak (Quercus)/01114A
- Pyridaben/Holly (Ilex)/12726A
- Pyridaben/Juniper (Juniperus)/12725A
- Pyridaben/Rose (Rosa)/13170A
- Pyridaben/Winged Euonymus (Alata)/13171A, 13172A
- Sethoxydim/English Ivy (Hedera Helix)/09003A
- Simazine/Flowering Dogwood (Cornus Florida)/12971A
- Simazine/Holly (Ilex)/12981A
- Simazine/Holly, American (Ilex Opaca)/12980A
- Simazine/Holly, Blue (Ilex X Meserveae)/12982A
- Simazine/Holly, Fosters (Ilex X Attenuata)/12979A
- Simazine/Honeylocust (Gleditsia)/12975A
- Simazine/Japanese Dogwood (Cornus Kousa)/13002A
- Sun Spray Ultra-fine SprayOil/Ageratum/10606A
- Thiophanate Methyl/Ageratum/11555A, 12263A
- Thiophanate Methyl/Baby's-breath (Gypsophila Elegans)/12212A
- Thiophanate Methyl/Begonia/11560A, 12169A, 12264A
- Thiophanate Methyl/Blanket Flower (Gaillardia)/12217A

## ATTACHMENT 8 (Continued)

### Ornamental Pesticide Registrations (Continued)

- Thiophanate Methyl/Bougainvillea/12232A
- Thiophanate Methyl/Carnation (Dianthus Caryophyllus)/12238A
- Thiophanate Methyl/Chrysanthemum/12223A
- Thiophanate Methyl/Coleus/12248A
- Thiophanate Methyl/Coneflower (Rudbeckia)/12200A
- Thiophanate Methyl/Cornflower (Centaurea Cyanus)/12224A
- Thiophanate Methyl/Crossandra/12222A
- Thiophanate Methyl/Fuchsia/12240A
- Thiophanate Methyl/Gazania/12216A
- Thiophanate Methyl/Geranium (Pelargonium)/12252A
- Thiophanate Methyl/Globe Amaranth (Gomphrena)/12213A
- Thiophanate Methyl/Hibiscus/12211A
- Thiophanate Methyl/Impatiens/12259A
- Thiophanate Methyl/Larkspur (Delphinium)/12220A
- Thiophanate Methyl/Marigold (Tagetes)/12258A
- Thiophanate Methyl/Moss Rose (Portulaca)/12255A
- Thiophanate Methyl/Nicotiana/12205A
- Thiophanate Methyl/Ornamental Cabbage (Brassica Sp.)/12228A
- Thiophanate Methyl/Ornamental Kale (Brassica Sp.)/12229A
- Thiophanate Methyl/Petunia/12261A
- Thiophanate Methyl/Phlox X Procumbens (Folio-variegata)/12204A
- Thiophanate Methyl/Pine, Austrian (Pinus Nigra)/11583A
- Thiophanate Methyl/Pinks (Dianthus)/12237A
- Thiophanate Methyl/Pocketbook Flower (Calceolaria)/12226A
- Thiophanate Methyl/Primrose (Primula)/12236A
- Thiophanate Methyl/Rose Periwinkle (Catharanthus Roseus)/12254A
- Thiophanate Methyl/Scarlet Sage (Salvia Splendens)/12260A
- Thiophanate Methyl/Shasta Daisy (Chrysanthemum X Superbum)/12221A
- Thiophanate Methyl/Snapdragon (Antirrhinum Majus)/12199A
- Thiophanate Methyl/Statice (Limonium)/11552A
- Thiophanate Methyl/Stock (Matthiola Incana)/12141A
- Thiophanate Methyl/Tickseed (Coreopsis)/12233A
- Thiophanate Methyl/Transvaal Daisy (Gerbera)/12251A
- Thiophanate Methyl/Vervain (Verbena)/12256A
- Thiophanate Methyl/Violet (Viola)/12201A
- Trifluralin/Blue Fescue (Festuca Cinerea)/11781A
- Trifluralin/Blue Fescue (Festuca Ovina Glauca)/10657A
- Trifluralin/Cheddar Pink (Dianthus Gratianopolitanus)/12137A
- Trifluralin/Rose (Rosa)/02832A
- Trifluralin/Speedwell (Veronica)/11439A
- Trifluralin/Stonecrop (Sedum X Sylvestris)/12456A
- Vinclozolin/Hydrangea/07980A

## ATTACHMENT 9

### Biopesticide Research and Development

Biopesticide Petitions/Amendments/Data Packages Submitted to EPA or Manufacturer in 1998:

- Trichoderma hamatum isolate 382 and Flavobacterium balustinum strain 299 /vegetable bedding plants and ornamentals.

FQPA petition amendment summaries were submitted to EPA to support Earthgro's Potting Mix with Floraguard for control of damping off and root rot pathogens.

- Macleaya Extract/Ornamentals.

Reduced risk petition and data package to EPA for Macleaya Extract for disease control on ornamentals.

- Cinnamaldehyde as an insecticide/fungicide on all food commodities.

An FQPA petition amendment summary was submitted to EPA.

- Aspergillus flavus isolate AF36 for aflatoxin reduction in Arizona cotton.

IR-4 in cooperation with the Arizona Cotton Research and Protection Council and the USDA submitted petitions to EPA requesting: 1) an exemption from the requirement of a tolerance and full registration for *A. flavus* isolate AF36 on cotton, 2) an extension of the existing temporary tolerance exemption and Experimental Use Permit on cotton.

- Phospholipid: Lyso-PE (Lysophosphatidylethanolamine) on grapes, tomatoes, apples, pears, peaches, nectarines, citrus, cranberries and strawberries to promote ripening and extend the storage shelf life.

IR-4 submitted a data package to JP BioRegulators to support an Experimental Use Permit for the LPE 98S formulation. JP BioRegulators submitted the Experimental Use Permit Data Package to EPA.

- Sucrose fatty-acid esters as an insecticide on all food commodities.

Major amendment with additional data submitted to EPA.

- Dutch Trig<sup>R</sup> (Verticillium dahliae isolate WCS 850)/Elms for control of Dutch Elm Disease.

IR-4 in cooperation with ARCADIS submitted an Experimental Use Permit Data Package to EPA.

- Kaolin for insect control, plant growth enhancement and improved fruit coloration on 48 crops.

IR-4 in cooperation with Engelhard Corporation prepared a data package to add plant growth benefit claims to the Kaolin label including increased plant vigor, improved yields, increased size of fruit and improved coloration of apples and peaches. This package has been submitted to EPA.

- Formic Acid Gel Pack for the control of Tracheal Mites and the Suppression of Varroa Mites in Honeybee Hives.

IR-4 in cooperation with MANN LAKE Ltd. and the USDA prepared a data package to label a formic acid gel pack for mite control in honeybee hives. This package has been submitted to EPA.

- Azadirachtin plus Neem Oil as an insecticide on ornamentals and turf.

Major Amendment with additional data submitted to registrant. The registrant will submit to EPA in the first quarter of 1999.