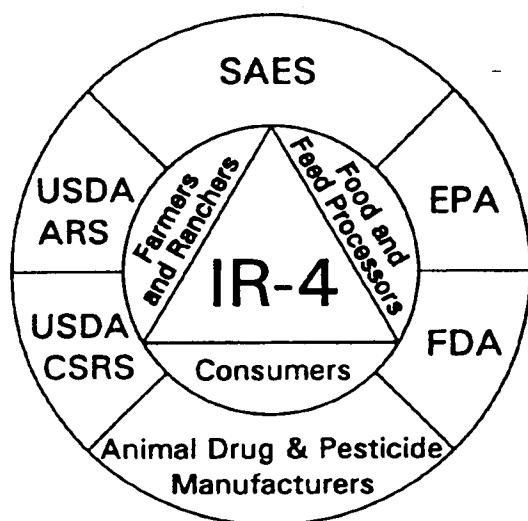

ANNUAL REPORT 1993



A NATIONAL AGRICULTURAL
PROGRAM TO CLEAR PEST
CONTROL AGENTS AND ANIMAL
DRUGS FOR MINOR USES

INTERREGIONAL RESEARCH
PROJECT NO. 4

ANNUAL REPORT OF THE IR-4 PROJECT (NRSP-4/IR-4)
January 1, 1993 - December 31, 1993

BACKGROUND

Interregional Research Project No. 4 (IR-4 Project) was organized in 1963 by Directors of the State Agricultural Experiment Stations (SAES) to obtain residue tolerances for minor use pesticides on food and feed crops where economic considerations precluded private sector registration. Since its inception, IR-4 has been administered by USDA/CSRS. In 1976, USDA/ARS established a companion minor use program to provide further support for the minor use effort. The objectives of the IR-4 Project were expanded in 1977 to include the registration of pesticides for protection of nursery and floral crops, forest seedlings and turf grass; and again in 1982 to include an initiative to register biological pest control agents (biorationals) for agricultural pest control. Also in 1982, objectives of the program were amended to include registration of animal health drugs for use on minor animal species.

With the passage of the 1988 amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Project was challenged to support the reregistration of existing minor pesticide uses that are needed by the producers of minor agricultural commodities but for which specific data would not be developed by commercial registrants. Based on extensive surveys of the user community and product registrants, and through the use of priority setting workshops, IR-4 developed a strategic plan in 1990 to reregister up to 1000 existing minor crop uses, while continuing to develop data for new product registrations, by the 1997 reregistration deadline. This Annual Report highlights progress in 1993 toward achieving the objectives of the program to provide adequate crop protection for the \$24 billion U.S. minor crop industry.

PROJECT:

National Research Service Project No. 4 (NRSP/IR-4). A National Agricultural Program to Clear Pest Control Agents and Animal Drugs for Minor Uses. January 1, 1993 to December 31, 1993.

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 5733 IR-4 food-use requests, an increase of 397 over the 5336 requests reported in 1992. Of these, 1342 are researchable projects with 1066 representing requests for new uses and 276 representing reregistration requests. SAES and USDA-ARS cooperators scheduled research on 214 requested clearance projects which represented 411 field trials. Residue samples from 154 field trials went to SAES and USDA-ARS laboratories and samples from 34 field trials went to contract and agrichemical laboratories. Research protocols for 411 field trials and 385 residue evaluations were prepared or revised as required by EPA Good Laboratory Practice Standards. The pesticides/commodities researched in 1993 are shown in Attachment 3.

FOOD USE REGULATORY ACCOMPLISHMENTS:

An over-commitment in program resources in 1992 resulted in reduced overall project productivity in 1993. The IR-4 Project was responsible for 66 pest control product clearances in 1993 compared to 120 in 1992. These consisted of completed projects providing data in support of tolerance petitions, exemptions from the requirement of a tolerance, reregistration data packages and label amendments. During the year, EPA published 11 Federal Register notices establishing 15 new tolerances and exemptions and 7 IR-4 data packages supporting label amendments and reregistrations were accepted by EPA or state regulatory agencies. These are shown in Attachment 4. EPA crop group definitions provide for the extension of a tolerance or exemption for a pesticide chemical from one crop to other closely related crops [see 40 CFR 180.1(h)]. IR-4 frequently petitions EPA for extended crop group definitions. By doing so, additional minor crops are included in the initial tolerance/exemption and are eligible for label registration by a commercial registrant. IR-4 activities to expand crop definitions substantially leverage the number of pest control options available to producers of minor crops. In 1993, EPA approved crop group definitions representing 44 new uses. These are shown in Attachment 5.

In addition to tolerances and exemptions approved by EPA in 1993 in response to IR-4 petitions, 5 proposals have been published in the Federal Register and are expected to be approved in 1994. These are shown in Attachment 6.

During 1993, IR-4 drafted 33 regulatory data packages that requested actions covering 44 clearance requests. These included, 15 new tolerance petitions, 2 data packages to support reregistrations, 10 major amendments to prior submitted data packages and 6 data packages to support label expansions. These are shown in Attachment 7.

ORNAMENTAL RESEARCH AND REGISTRATIONS:

During the 17 years of the IR-4 ornamental program, 11,342 Pesticide Clearance Requests have been received. In 1993, 60 requests were received, 37 of which were for new uses. There are presently 711 ornamental requests that are considered researchable. To date, IR-4 has funded over 13,500 research trials and have supported 3,198 registrations. In 1993, the IR-4 Project funded 378 research trials for 288 projects. Two herbicide registration packages containing 106 reports were prepared and submitted to registrants for review and label expansion. During 1993, IR-4 data supported 37 new ornamental uses. These are shown in Attachment 8.

BIORATIONAL PEST CONTROL RESEARCH AND REGISTRATIONS:

The IR-4 Biorational program was established in 1982 to aid in the registration of biological (microbial and biochemical) agents for control of economically important pests on minor crops. IR-4 funding was used to support three projects in 1993. One project, entitled "Bioherbicide for Control of Dodder", was conducted at the University of Florida. This project was a continuation of a research project initiated by IR-4 in 1991 and involves research on Alternaria spp. and Fusarium tricinatum for the control of dodder on cranberries and other crops. The second research project, also at the University of Florida, is entitled, "Microbial Control of the Red Imported Fire Ant with a Fungal Formulation of Beauveria bassiana". This project was initially funded in 1992. IR-4 granted a one year no cost extension of the 1992 agreement to permit a continuation of the research in 1993. The third research project funded was at the University of California at Berkeley and involves a "cell culture study" to test the effects of the Codling Moth Granulosis Virus on mammalian cells. EPA has indicated that this study is needed in order to register the Codling Moth Granulosis Virus. Also during 1993, EPA approved a temporary tolerance exemption of Pseudomonas fluorescens strain NCIB 12089 for the control of bacterial blotch of mushroom and an Experimental Use Permit for VICTUS® (Pseudomonas fluorescens strain NCIB 12089). Refer to Attachment 4. In 1993, IR-4 submitted two regulatory packages to EPA for microbial pest control agents. These are shown in Attachment 9.

ANIMAL DRUG RESEARCH AND DEVELOPMENT:

The IR-4 Animal Drug Program became a portion of the IR-4 research efforts in 1982. In October of 1993, the Animal Drug Program became an autonomous program, National Research Support Program #7. As part of the IR-4 Project, 20 uses of drugs for minor use animal species were approved by the Food and Drug Administration (FDA). These approvals were published in the Federal Register and are listed in Attachment 10. Currently, ten projects are completed (Attachment 11) and their Public Master Files (PMF) are under review with the FDA/Center for Veterinary Medicine (FDA/CVM). In addition, one project is completed and the PMF is being prepared, one Investigational New Animal Drug data package is under review by FDA/CVM, and 22 projects are ongoing (Attachment 12).

QUALITY ASSURANCE:

The IR-4 Project is operating under EPA-mandated Good Laboratory Practice Standards with a fully operational Quality Assurance unit. Numerous formal and on-site training sessions have taken place to assure that IR-4 data are in compliance with federal regulations. The IR-4 GLP Operational Handbook has been revised and distributed to all regional personnel and cooperators.

PROGRAM COOPERATION AND COORDINATION:

The IR-4 Project has been referred to as "a prime example of Federal interagency cooperation in coordination with academic institutions, pharmaceutical industries and commodity interests to effectively meet the growing needs for registration of safe pesticides and drugs for minor crops and animals."

Indicative of the cooperative nature of the IR-4 Minor Use Program, 220 of the 385 food use trials conducted in 1993 were conducted by SAES cooperators, 140 by federal agricultural scientists and 25 by private sector researchers in cooperation with IR-4.

IR-4 also has been collaborating with the USDA-NAPIAP program on pesticide reregistration projects of common interest. In 1993, IR-4 identified 8 projects that required data beyond the scope of IR-4 but which could be researched by SAES scientists with grant funds provided by the NAPIAP program. Also, IR-4 is cooperating with USDA-APHIS to defend the use of zinc phosphide as a vertebrate pest control agent.

IR-4 is actively involved in the USDA-CSRS Interagency Reregistration Task Force, the USDA Minor Use Working Group and is a participant in the ESCOP Pest Management Strategies Subcommittee and National Agricultural Chemical Association Regulatory Subcommittee.

A meeting of the IR-4 Commodity Liaison Committee (CLC) was held coincident with the IR-4 Annual Meeting in April. The chair of the CLC was invited to attend each IR-4 Technical Committee meeting in 1993.

IR-4 held a National Food Use Workshop in October which was attended by 125 public and private sector research personnel. This was the 16th in a series of food and ornamental workshops held by IR-4 for the purpose of reviewing and prioritizing new clearance requests and reregistration needs. IR-4 also sponsored a concurrent GLP Workshop to further train IR-4 quality assurance personnel.

USEFULNESS OF THE FINDINGS:

Based on the recommendation of the Committee of Nine, CSRS has approved the continuation of NRSP-4/IR-4. A National Agricultural Program to Clear Pest Control Agents for Minor Uses from October 1, 1993 through September 30, 1998.

IR-4 is the principle public effort supporting the use of registered pesticides and biological pest control agents for use on minor food crops. Since the IR-4 Project was initiated in 1963, the program has been responsible for data to support over 4222 food use clearances, 3150 ornamental registrations and more recently, has supported research on 15 biorational research projects.

IR-4 relies on commodity producers, state and federal research scientists and extension personnel to suggest pest control needs important to the agricultural community. These needs are evaluated by industry registrants and EPA and are prioritized for purposes of research by regional and national committees of agricultural specialists. IR-4 provides funding support and scientific guidance for carrying out both field and laboratory research to develop data for the registration by the EPA of pest control products on a wide variety of commodities. Without assistance from the IR-4 Project, few safe and effective pesticides and biological alternatives would be available for use on minor crops.

WORK PLANNED FOR 1994:

IR-4 will continue its mission to clear safe and effective pest control products for minor food crops and ornamentals. An increase in FY 94 Special Research Grant funding will enable the program to move forward toward meeting the objective of the IR-4 Strategic Plan.

Based on priorities established by regional and national workshop committees, 316 food use projects have been selected for research in 1994, an increase of 60% over 1993. This increased productivity has been accomplished through the addition of field research centers and satellite analytical laboratories to the existing IR-4 research capabilities. Research planned for 1994 will enable IR-4 to complete data requirements for about 200 additional pesticide clearances. Professional staff have been increased to facilitate research planning, data review and petition preparation.

IR-4 will continue its commitment to its Biorationals Objective. The Project has set aside nearly \$500,000 to support research and registration for microbial and biochemical alternatives for pest control on minor crops. IR-4 will be contacting organizations and individuals with similar interests in order to form coalitions to expedite the development and registration of biologically based alternative pest control products. IR-4 plans to convene a Biorationals Workshop in 1994 and will be a participant in the Second National IPM Symposium/Workshop. A Coordinator - Biorational Research will be added to the staff to manage this program. The emphasis on biologically based pest control products will not diminish program activities to register and reregister conventional pesticides for minor uses.

The IR-4 Project has strengthened its commitment to the \$8 billion "green industry" by employing a one-half time coordinator to manage the IR-4 Ornamentals Program. Surveys of pest control needs on ornamental crops will be conducted in cooperation with the American Association of Nurserymen and Society of American Florists. An IR-4 Ornamentals Workshop will be held in order to review and prioritize new and existing clearance requests. Through an expanded cooperator base, the program expects to carry out research on 380 ornamental clearance requests and submit data to registrants in support of 225 label expansions.

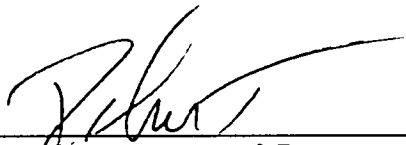
IR-4 will continue its commitment to producing quality scientific data that further meets EPA mandated Good Laboratory Practice Standards. IR-4 will continue to hold quality assurance training sessions for IR-4 personnel, conduct simulated test site inspections and review all final data reports.

PUBLICATION:

Markle, G.M. Editor, 1993 *IR-4 Newsletter* (Quarterly)

Baron, J.J. 1993. *IR-4 Field Data Book*

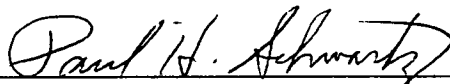
December 31, 1993



R.T. Guest, National Director
IR-4, Cook College, Rutgers - The State University
of New Jersey

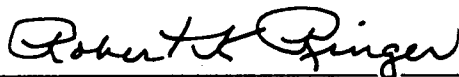
Approved:

1/31/94



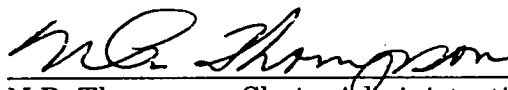
P.H. Schwartz, Chair, Technical Committee (Pesticide)
Staff Scientist, Office of Minor Use Pesticides
USDA-ARS

1/31/94



R.K. Ringer, Chair, Technical Committee (Animal Drug)
National Coordinator (Animal Drug)
Michigan State University

1/31/94



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

ATTACHMENT 1

COOPERATING REGULATORY 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 Service
U.S. Department of Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances
Food and Drug Administration, Center for Veterinary Medicine

PRINCIPAL LEADERS

Administrative Advisers:

Dr. G.M. Buening, *University of Missouri, Columbia*
Dr. J.P. Jordan, *U.S. Department of Agriculture*
Dr. A.E. Lauchli, *University of California, Davis*
Dr. D.B. Lund, *Rutgers University*
Dr. R.D. Plowman, *U.S. Department of Agriculture*
Dr. N.P. Thompson, *University of Florida, Chair*
Dr. R.E. Wyse, *University of Wisconsin*

Representing

Animal Drug Program
USDA-CSRS
Western Region
Northeast Region
USDA-ARS
Southern Region
Northcentral Region

Technical Committee (Pesticide):

Dr. R.T. Guest, *Rutgers University, National Director*
Dr. R.M. Hollingworth, *Michigan State University*
Dr. J.V. Parochetti, *U.S. Department of Agriculture*
Dr. P.H. Schwartz, Jr., *U.S. Department of Agriculture, Chair*
Dr. T. Shibamoto, *University of California, Davis*
Dr. T.D. Spittler, *Cornell University, Geneva*
Dr. W.B. Wheeler, *University of Florida*

IR-4 Headquarters
Northcentral Region
USDA-CSRS
USDA-ARS
Western Region
Northeast Region
Southern Region

Technical Committee (Animal Drug):

Dr. J.G. Babish, *Cornell University*
Dr. A.L. Craigmill, *University of California, Davis*
Dr. R.E. Holland, *Michigan State University*
Dr. L.R. Miller, *USDA-CSRS*
Dr. R.K. Ringer, *Michigan State University, National Coordinator*
Dr. S.F. Sundlof, *University of Florida*

Northeast Region
Western Region
Northcentral Region
USDA-CSRS
IR-4 Headquarters
Southern Region

SUPPORT GROUPS

Headquarters Technical Staff:

Mr. D. Baker, Jr., *EPA Liaison*
Dr. J. Baron, *National Coordinator*
Dr. W. Biehn, *Coordinator*
Dr. K. Dorschner, *Coordinator*
Mr. J. Frank, *Coordinator*
Dr. R. Guest, *National Director*
Mrs. D. Infante, *Information Specialist*
Dr. D. Kunkel, *Coordinator*
Mr. R. Libby, *Coordinator*
Ms. E. Lurvey, *Coordinator*
Prof. G. Markle, *Associate Director*
Dr. R. Ringer, *National Coordinator, Animal Drug Program*
Mr. K. Samoil, *Coordinator*
Mrs. P. Sarica, *Assistant Director for Administration*
Ms. T. White, *Quality Assurance Coordinator*

The National Headquarters is located at the New Jersey Agricultural Experiment Station, Cook College, Rutgers - The State University of New Jersey, New Brunswick, NJ 08903-0231 (908) 932-9575; FAX: (908) 932-8481

The IR-4 Animal Drug Program is located at Michigan State University, Institute for Environmental Toxicology, East Lansing, MI 48824 (517) 336-2048; FAX: (517) 355-4603

Regional Technical Staff:

Dr. T. Spittler, <i>Laboratory Director</i>	Northeast Region
Mr. J. Martini, <i>Field Research Coordinator</i>	Northeast Region
Dr. P. Kovach, <i>Laboratory Coordinator</i>	Northeast Region
Dr. R. Hollingworth, <i>Laboratory Director</i>	Northcentral Region
Dr. S. Miyazaki, <i>Field Research Coordinator</i>	Northcentral Region
Dr. R. Leavitt, <i>Laboratory Coordinator</i>	Northcentral Region
Dr. W. Wheeler, <i>Laboratory Director</i>	Southern Region
Dr. C. Meister, <i>Field Research Coordinator</i>	Southern Region
Ms. J. Yoh, <i>Laboratory Coordinator</i>	Southern Region
Dr. T. Shibamoto, <i>Laboratory Director</i>	Western Region
Mr. R. Melnicoe, <i>Field Research Coordinator</i>	Western Region
Ms. M. Reiff, <i>Program Coordinator</i>	Western Region
Mr. C. Mourer, <i>Laboratory Coordinator</i>	Western Region

Consultants Committee:

Mr. D. Baker, Jr., *EPA Liaison to IR-4, Chair*
Dr. M. Flood, *EPA-OPP-HED-CBI Liaison*
Mr. H. Jamerson, *EPA-OPP-RD, Minor Use Officer*
Mr. N. Somma, *NACA Representative*
Dr. L. Kahn, *FDA/CVM Liaison to IR-4*

Commodity Liaison Committee:

Mr. D. Ahrens	Ms. A. George	Ms. L. Murphy	Mr. C. Regelbrugge
Dr. S. Balling	Ms. V. Jewett	Mr. G. Obenauf	Mr. M. Sorbello, Jr.
Dr. A. Bonanno	Dr. C. Kesner	Mr. R. Olszack	Mr. P. Traino
Mr. D. Botts	Mr. T. Kodet	Mr. R. Prewett	Mr. R. Wayne Zellers
Mr. J. Downing	Mr. E. Kurtz	Mr. R. Ratto	
Dr. H. Ewart	Mr. M. Morris	Mr. S. Rawlins	

State and Federal IR-4 Liaison Representatives:

Northeast Region

Dr. R. Ashley	CT	Dr. D. Rutz	NY
Dr. S. Whitney	DE	Dr. R. Mumma	PA
Dr. D. Demyers	DC	Dr. D. Wallace	RI
Dr. D. Yarborough	ME	Dr. A. Gotlieb	VT
Dr. J. Linduska	MD	Dr. J. Weaver	WV
Dr. P. Bhowmik	MA	Dr. R. Webb	USDA-ARS MD
Dr. J. Bowman	NH	Dr. J. Locke	USDA-ARS MD
Dr. G. Ghidiu	NJ	Dr. A. Herner	USDA-ARS MD
Mr. J. Martini	NY		

Northcentral Region

Dr. H. Taber	IA	Dr. S. Kamble	NE
Dr. D. Williams	IL	Dr. A. Waldron	OH
Dr. R. Latin	IN	Dr. L. Wrage	SD
Dr. D. Cress	KS	Dr. C. Koval	WI
Dr. S. Miyazaki	MI	Dr. M. Klein	USDA-ARS OH
Dr. B. Swanson	MN	Dr. C. Krause	USDA-ARS OH
Dr. C. Starbuck	MO	Dr. L. Wax	USDA-ARS IL
Dr. J. Nalewaja	ND	Dr. W. Doane	USDA-ARS IL

Southern Region

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Dr. T. Lavy	AR	Dr. C. Southards	TN
Dr. C. Meister	FL	Dr. R. Holloway	TX
Dr. K. Delaplane	GA	Dr. M. Weaver	VA
Dr. L. Weston	KY	Vacant	VI
Dr. R. Story	LA	Dr. L. Chandler	USDA-ARS GA
Dr. M. Kurtz	MS	Dr. A. Johnson	USDA-ARS GA
Dr. R. Leidy	NC	Dr. H. Harrison	USDA-ARS SC
Dr. J. Criswell	OK	Dr. R. Wauchope	USDA-ARS GA
Ms. N. Acin	PR		

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Dr. P. Baker	AZ	Dr. J. Jenkins	OR
Ms. M. Reiff	CA	Dr. H. Deer	UT
Dr. G. McIntyre	CO	Dr. A. Schreiber	WA
Dr. R. Muniappan	GU	Dr. M. Ferrell	WY
Dr. M. Kawate	HI	Dr. R. Linderman	USDA-ARS OR
Dr. G. Carpenter	ID	Dr. H. Toba	USDA-ARS WA
Dr. J. Riesselman	MT	Mr. C. Sell	USDA-ARS WA
Dr. M. English	NM	Dr. R. Boydston	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 1993. 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 will be met.

NORTHEAST REGION

Dr. R. Bellinder	NY	Dr. J. Neal	NY
Dr. E. Beste	MD	Dr. M. Pritts	NY
Dr. F. Caruso	MA	Mr. L. Rossell	NJ
Dr. J. Devlin	MA	Dr. A. Senesac	NY
Dr. C. Eckenrode	NY	Dr. A. Shelton	NY
Dr. G. Ghidiu	NJ	Dr. J. Siczka	NY
Dr. S. Johnston	NJ	Dr. A. Stretch	NJ
Dr. J. Linduska	MD	Dr. J. Weaver	WV
Dr. B. Majek	NJ	Ms. A. Wise	NY
Dr. I. Merwin	NY	Dr. D. Yarborough	ME

NORTHCENTRAL REGION

Dr. L. Binning	WI	Dr. A. Keaster	MO
Dr. S. Clay	SD	Dr. A. Lamey	ND
Mr. E. Eriksmoen	ND	Dr. R. Latin	IN
Ms. R. Feree	IL	Dr. D. Mahr	WI
Dr. J. Fleeker	ND	Dr. D. Meyer	ND
Mr. J. Francis	IN	Dr. D. Nielsen	OH
Dr. G. Harvey	WI	Dr. W. Stevenson	WI
Dr. H. Hopen	WI	Dr. M. Wiess	ND
Dr. C. Hoy	OH	Dr. J. Wyman	WI
Dr. J. Johnson	MI	Dr. A. York	IN
Dr. A. Jones	MI	Dr. B. Zandstra	MI

SOUTHERN REGION

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Mr. A. Armstrong	PR	Dr. J. Heitz	MS
Dr. C. Averre	NC	Mr. R. Ingles	PR
Dr. R. Baldwin	VA	Dr. F. Johnson	FL
Dr. D. Benson	NC	Dr. R. Johnson	FL
Ms. I. Cabrera	PR	Dr. A. Keinath	SC
Dr. R. Chalfant	GA	Dr. M. Kurtz	MS
Dr. C. Clark	LA	Dr. J. Latimer	GA
Dr. J. Crane	FL	Dr. T. Lavy	AK
Dr. T. Crocker	FL	Dr. R. Leidy	NC
Dr. F. Dainello	TX	Dr. L. Liu	PR
Dr. L. Datnoff	FL	Dr. C. Mainland	NC

SOUTHERN REGIONS CON'T

Dr. P. McLeod	AR	Ms. S. Scherer	FL
Ms. P. Messick	NC	Dr. P. Schultz	VA
Dr. J. Meyer	NC	Dr. W. Shamiyeh	TN
Dr. D. Monks	NC	Dr. K. Sorensen	NC
Dr. C. Mullins	TN	Dr. W. Stall	FL
Dr. J. Norcini	FL	Dr. J. Stimac	FL
Mr. C. Olson	FL	Dr. R. Talbert	AR
Dr. J. Pena	FL	Mr. S. Taylor	FL
Dr. R. Ploetz	FL	Ms. C. Turlington	FL
Dr. R. Raid	FL	Dr. R. Young	VA
Dr. G. Saxena	FL		

WESTERN REGION

Dr. H. Agamalian	CA	Ms. K. Kelly	CA
Dr. K. Al-Khatib	WA	Dr. M. Kilby	AZ
Mr. M. Allan	CA	Dr. J. Klett	CA
Mr. D. Anderson	OR	Mr. P. Kloft	OR
Dr. M. Bari	CA	Mr. S. Koike	CA
Dr. C. Bell	CA	Mr. B. Lewis	NM
Dr. G. Bender	CA	Dr. B. McReynolds	OR
Dr. C. Buckholz	WA	Mr. T. Miller	WA
Dr. R. Burr	OR	Mr. M. Morris	OR
Mr. C. Collins	OR	Mr. R. Mullin	CA
Dr. W. Cone	WA	Dr. J. Ogawa	CA
Dr. M. Davis	CA	Ms. D. Olson	CA
Dr. B. Dean	WA	Dr. J. Palumbo	AZ
Mr. J. DeFrancesco	OR	Dr. R. Parker	WA
Dr. J. DeFrank	HI	Dr. K. Patten	WA
Dr. K. Dorschner	ID	Mr. M. Qualls	WA
Dr. C. Elmore	CA	Mr. L. Santo	HI
Ms. J. Engebretson	CA	Dr. T. Schultz	WA
Ms. M. Ethridge	HI	Dr. C. Shanks	WA
Mr. B. Fischer	CA	Mr. R. Smith	CA
Mr. V. Fisher	OR	Dr. C. Stanger	OR
Dr. G. Grove	WA	Dr. D. Stoffel	CA
Dr. D. Gubler	CA	Ms. B. Teviotdale	CA
Mr. R. Hale	CA	Dr. I. Tinsley	OR
Mr. D. Hulst	CA	Dr. K. Volker	WA
Dr. M. Kawate	HI	Dr. S. Whalen	HI
Ms. S. Kawate	HI	Dr. R. William	OR

USDA-ARS

Ms. S. Benzen	CA	Dr. C. Krause	OH
Mr. L. Birch	WA	Dr. R. Linderman	OR
Dr. R. Boydston	WA	Dr. J. Locke	MD
Dr. L. Chandler	GA	Mr. H. McDaniel	OR
Mr. R. Coleman	TX	Dr. L. Schreiber	OH
Mr. B. Davis, Jr.	SC	Dr. A. Simmons	SC
Mr. S. Flanagan	TX	Dr. B. Smith	MS
Mr. J. Frank	MD	Mr. C. Tappan	OH
Dr. N. Glaze	GA	Dr. H. Toba	WA
Dr. H. Harrison	SC	Mr. T. Treat	WA
Dr. A. Johnson	GA	Dr. L. Wax	IL
Dr. C. Johnson	GA	Mr. W. Wright	GA
Ms. N. Kelly	SC	Mr. C. Younce	GA

ATTACHMENT 3

Food Use Research Projects

Fungicides, Bactericides and Nematicides

NEW REGISTRATIONS

- Benomyl/Artichoke/PR 3987
- Benomyl/Dandelion/PR 5167
- Benomyl/Parsley/PR 1863
- Benomyl/Greens (Mustard)/PR 3383
- Benomyl/Kale/PR 3596
- Captan/Strawberry/PR 5326
- Chlorothalonil/Horseradish/PR 2392
- Chlorothalonil/Mango/PR 2162
- Ethoprop/Eggplant/PR 5322
- Fenamiphos/Strawberry (Perennial)/PR 3026
- Fenamiphos/Asparagus/PR 4275
- Fenarimol/Filbert/PR 5012
- Fosetyl-AL/Macadamia/PR 3187
- Fosetyl-AL/Blueberry/PR 4937
- Fosetyl-AL/Cranberry/PR 3504
- Fosetyl-AL/Turnip (Roots & Tops)/PR 5085
- Imazalil/Mango/PR 5047
- Iprodione/Basil/PR 3388
- Iprodione/Celery/PR 2092
- Iprodione/Dill/PR 3232
- Iprodione/Eggplant/PR 2831
- Iprodione/Endive/PR 2096
- Iprodione/Leek/PR 2406
- Iprodione/Parsley/PR 3048
- Iprodione/Pepper (Bell)/PR A2830
- Mancozeb/Sunflower/PR 1811
- Metalaxyl/Artichoke/PR 4979
- Metalaxyl/Carambola/PR 4939
- Metalaxyl/Sage/PR 2491
- Metalaxyl/Spinach/PR 5203
- Metalaxyl/Sugar Apple/PR 4940
- Myclobutanil/Blackberry/PR 5057
- PCNB/Collard/PR 3460
- PCNB/Greens (Mustard)/PR 4983
- PCNB/Kale/PR 4982
- Propiconazole/Peppermint/PR A4127
- Triadimefon/Blackberry/PR 3018
- Triadimefon/Cucumber (GH)/PR 2743
- Triadimefon/Pepper (Bell)/PR 5319
- Triadimefon/Pepper (Non-Bell)/PR 2101
- Vinclozolin/Onion (Green)/PR 1446

REREGISTRATIONS

- Benomyl/Greens (Mustard)/PR 4097
- Captan/Blackberry/PR 4322
- Captan/Greens (Mustard)/PR 4334
- Captan/Onion (Green)/PR 3167
- Chlorothalonil/Mint/PR 4087
- Ferbam/Guava/PR 4081
- Ferbam/Papaya/PR 4080
- Ferbam/Plum/PR 4478
- Triforine/Cranberry/PR 5329
- Ziram/Blueberry/PR 4745
- Ziram/Raspberry/PR 4118

Herbicides and PGR's

NEW REGISTRATIONS

- 2,4-D (Amine)/Blueberry/PR 3085
- Bentazon/Clover/PR 1840
- Clethodim/Bean (Snap)/5205
- Clethodim/Pea (Dry)/PR 5204
- Clethodim/Pea (Succulent)/PR 5202
- Clethodim/Pepper (Bell)/PR 5206
- Clethodim/Pepper (Non-Bell)/PR 5355
- Clethodim/Radish/PR 5227
- Clomazone/Muskmelon/PR 4047
- Clomazone/Peppermint/PR 3155
- Clomazone/Spearmint/PR 4972
- Clomazone/Watermelon/PR 3943
- Clopyralid/Strawberry/PR 5262
- Dicamba/Bean (Mung)/PR 3415
- Imazethapyr/Lettuce (Head)/PR 4156
- Imazethapyr/Lettuce (Leaf)/PR 4157
- Lactofen/Pea (Dry)/PR 4584
- Lactofen/Pepper (Bell)/PR 4400
- Lactofen/Tomato/PR 4163
- Metolachlor/Blackberry/PR 2617
- Metolachlor/Daikon/PR 2257
- Metolachlor/Onion (Dry)/PR 5396
- Metolachlor/Pepper (Non-Bell)/PR 2986
- Metolachlor/Raspberry/PR 3497
- NAA/Pomegranate/PR 5389
- Napropamide/Daikon/PR 3253
- Napropamide/Dill (Fresh & Dry)/PR 3378
- Oxyfluorfen/Chives/PR 3572
- Oxyfluorfen/Clover/PR 2738
- Paraquat/Cucumber/PR 2978
- Paraquat/Onion (Dry)/PR 298
- Paraquat/Onion (Green)/PR 2984
- Paraquat/Pea (Dry)/PR 3200
- Paraquat/Pea (Succulent)/PR 5193
- Paraquat/Pepper/PR 4971
- Paraquat/Tomato/PR 5312
- Paraquat/Watermelon/PR 2976
- Pendimethalin/Cantaloup/PR 1896
- Pendimethalin/Cucumber/PR 1892
- Pendimethalin/Onion (Green)/PR 5097
- Pendimethalin/Squash/PR 1893
- Pronamide/Cranberry/PR 3152
- Pronamide/Kale/PR 3444
- Pyridate/Garbanzo/PR 3866
- Quizalofop/Pineapple/PR 5174
- Sethoxydim/Buckwheat/PR 1348
- Sethoxydim/Carrot/PR 2046
- Sethoxydim/Cassava/PR 3034
- Sethoxydim/Okra/PR 2339
- Sethoxydim/Rhubarb/PR 2438
- Sethoxydim/Tanier/PR 3033
- Thifensulfuron-methyl/Flax/PR 4879
- Thifensulfuron-methyl/Safflower/
PR 3454
- Triclopyr/Peach/PR 3642

REREGISTRATIONS

- 2,4-D/Cherry/PR 4254
- 2,4-D/Peach/PR 4255
- 2,4-D/Pear/PR 4256
- 2,4-D/Plum/PR 4257
- 2,4-D/Potato/PR 4302
- Napropamide/Mint/PR 3441
- Oxyfluorfen/Coffee/PR 5154

Insecticides and Bird Repellents

NEW REGISTRATIONS

- Acephate/Lettuce (Leaf)/PR 2948
- Bifenthrin/Broccoli/PR 5272
- Bifenthrin/Cabbage/PR 5176
- Bifenthrin/Cauliflower/PR 5273
- Bifenthrin/Lettuce (Head)/PR 5274
- Bifenthrin/Pea (Succulent)/PR 5237
- Carbaryl/Basil/PR 5210
- Carbaryl/Canola/PR 5200
- Carbaryl/Chestnut/PR 5108
- Carbaryl/Coriander/PR 5211
- Chlorpyrifos/Bean (Snap)/PR 2393
- Chlorpyrifos//Broccoli/PR 3897
- Chlorpyrifos//Cabbage/PR 3896
- Chlorpyrifos/Coffee/PR 2673
- Chlorpyrifos/Dill/PR 5213
- Chlorpyrifos/Grasses/PR 5370
- Chlorpyrifos/Onion (Dry)/PR 3414
- Chlorpyrifos/Turnip/PR 3671
- Cypermethrin/Clover/PR 977
- Cyromazine/Bean (Lima)/PR 3908
- Cyromazine/Bean (Snap)/PR 3909
- Cyromazine/Pea (Southern)/PR 3906
- Dimethoate/Blueberry/PR 28
- Dimethoate/Hops/PR 4998
- Disulfoton/Kohlrabi/PR 460
- Esfenvalerate/Artichoke/PR 3845
- Esfenvalerate/Canola/PR 5150
- Esfenvalerate/Strawberry/PR 2014
- Ethoprop/Eggplant/PR 5322
- Ethoprop/Pineapple/PR 2860
- Fonofos/Squash/PR A3654
- Formic Acid/Beehives (Honeycombs)/PR 4896
- Hexakis/Artichoke/PR 4977
- Hexakis/Bean (Long)/PR 2684
- Hexakis/Blueberry/PR 2145
- Hexakis/Cucumber/PR 1210
- Hexakis/Pepper (Bell)/PR 3585
- Imidacloprid/Cucumber/PR A5181
- Imidacloprid/Hops/PR 5369
- Imidacloprid/Melon/PR A5180
- Imidacloprid//Squash (Summer)/PR A5180
- Malathion/Persimmon/PR 4159
- Malathion/Sugar Apple/PR 3438
- Propargite/Eggplant/PR 2955
- Propargite/Pea (Southern)/PR 3663
- Propargite/Pistachio/PR 3144
- Propargite/Raspberry/PR 3579
- Thiodicarb/Cabbage (Chinese)/PR 3058
- Thiodicarb/Turnip/PR 3056

REREGISTRATIONS

- Azinphos-methyl/Bean (Snap)/PR 4517
- Azinphos-methyl/Broccoli/PR 4759
- Azinphos-methyl/Brussels Sprout/PR 4760
- Azinphos-methyl/Cauliflower/PR 4762
- Azinphos-methyl/Celery/PR 4763
- Azinphos-methyl/Spinach/PR 4928
- Diazinon/Watercress/PR 3892
- Malathion/Turnip/PR 4847
- Malathion/Spinach/PR 4842
- Malathion//Broccoli/PR 4776
- Malathion/Cabbage/PR 4778
- Malathion/Collard/PR 4785
- Malathion/Apricot/PR 4769
- Malathion/Guava/PR 4799
- Malathion/Mango/PR 4814
- Malathion/Papaya/PR 3727
- Malathion/Passion Fruit/PR 3726
- Malathion/Peppermint/PR 4829
- Malathion/Pineapple/PR 4830
- Malathion/Spearmint/PR 4841
- Malathion/Watercress/PR 4852
- Methomyl/Chicory/PR A4107
- Parathion-methyl (EC)/Melon/PR 4897
- Parathion-methyl (EC)/Peach/PR 4899
- Parathion-methyl (EC)/Pepper/PR 4903
- Permethrin/Collard/PR 941
- Permethrin/Cucumber/PR 5126

ATTACHMENT 4

New Tolerance, Exemption and Reregistration Approvals

Fungicides

PROJECT	DATE	TYPE ACTION
• Captan/Caneberries/PR 4322, 3953	5/13/93	Label Amendment
• Metalaxyl/Cranberry/PR 3458	3/31/93	New Tolerance
• Metalaxyl/Ginseng/PR 4616	3/24/93	New Tolerance
• <u>Pseudomonas fluorescens</u> /Mushroom/PR 44B	7/28/93	Temporary Exemption
• Triadimefon/Raspberry/PR 2552	3/3/93	Reregistration

Herbicides and Plant Growth Regulators

• Clomazone/Winter Squash/PR 3684	3/24/93	New Tolerance
• Clopyralid/Mint Hay/PR 2632	10/21/93	New Tolerance
• Glyphosate/Celeriac/PR 3545	11/24/93	New Tolerance
• Napropamide/Sweet Potato/PR 3938	6/30/93	New Tolerance
• Paraquat/Cacao Bean/PR 3590	6/18/93	New Tolerance
• Pendimethalin/Onion (Dry)/PR 3528	6/21/93	New Tolerance
Garlic (National Use)/PR 4146	6/21/93	New Tolerance
• Trifluralin/Crambe/PR 3619	3/30/93	Label Amendment

Insecticides and Rodenticides

• Chlorophacinone/Artichoke/PR 3153	10/1/93	EPA Opinion Letter
• Diazinon/Blueberry/PR 794	10/1/93	Label Amendment
• Diazinon/Chinese Radish/PR 2223	5/1/93	Label Amendment
• Diazinon/Cranberry/PR 3732	3/10/93	Reregistration
• Diazinon/Mushroom/PR 2614	3/10/93	Reregistration
• Dimethoate/Brussels Sprout/PR 155	12/1/93	New Tolerance
• Hexakis/Marigold (Fresh)/PR 2748	9/15/93	New Tolerance
• Hexakis/Marigold (Dried & Extract)/ PR 2748	9/15/93	New Tolerance

ATTACHMENT 5

Crop Group Definition Approvals

Onion and Onion (Dry) - Define dry bulb onions for regulatory tolerance purposes to include dry bulb shallots. Accordingly 44 potentially useful tolerances will be extended to dry bulb shallots.

ATTACHMENT 6

Tolerance, Exemption and Crop Group Definition Approvals Proposed

Herbicides

- Acifluorfen/Strawberry/PR 1671
- Metsulfuron methyl/Sugarcane/PR 3887

Insecticides

- Chlorpyrifos/Sugarcane/PR 3239

Crop Group Definition (97)

- Sudangrass (Seed crop) = Sorghum (Grain)
- Sudangrass (Forage and Fodder) = Sorghum (Forage and Fodder)

ATTACHMENT 7

Data Packages Completed

(E=submitted to EPA; M=submitted to manufacturer; S=submitted to state agency)

NEW TOLERANCES	STATUS	MAJOR AMENDMENTS TO PREVIOUSLY SUBMITTED DATA	STATUS
• Benomyl/Artichoke/PR 3879	E	• Chlorothalonil/Asparagus/PR 319	E
• Bifenthrin/Cucurbit Vegetable Group/PR 4150, 4151, 4152, 3880, 4160, 4161, 5253	M	• Clopyralid/Mint/PR 2632	E
• Chlorpyrifos/Sugarcane/PR 3239	E	• Codling Moth Granulosis Virus/PR 1B	M
• Clomazone/Cabbage/PR 3570	E	• Hexakis/Watermelon/PR 3147, 4004	M
• Clomazone/Cucumber, Summer Squash/PR 3571, 3903	M	• Metaldehyde/Strawberry/PR 3128	E
• Clopyralid/Strawberry/PR 3689	M	• Metsulfuron methyl/Sugarcane/PR 3887	E
• Fosetyl Al/Blueberry/PR 4937	M	• Permethrin/Raspberry/PR 2504	M
• Imazethapyr/Lettuce, Endive PR 5354	E	• Propargite/Avocado/PR 2378	E
• Lactofen/Snapbean/PR 3603	M	• Sethoxydim/Asparagus/PR 2202, 4009	E
• Linuron/Lupine (Temp Tolerance)/ PR 2369	E	• Sodium Chlorate/Potato/PR 4386	E
• Malathion/Dry and Spent Hop/ PR 4800	E		
• Metolachlor/Dry Bulb Onion/PR 1528	E	REGISTRATIONS	
• Myclobutanil/Strawberry/PR 4015	E	• Benomyl/Turnip Greens/PR 3980, 4130	M
• Pronamide/Stone Fruit Group/ PR 5286	E	• Clomazone/Kenaf/PR 4046	M
• <u>Pseudomonas fluorescens</u> / Mushroom/PR 44B	E	• Glyphosate/Cassava, Tanier/PR 1157	M
		• Glyphosate/Tanier/PR 1158	M
		• Maneb/Leek/PR 2314	M
		• Metribuzin/Pigeon Pea/PR 3265	M
REREGISTRATIONS			
• Benomyl/Spinach (Seed Treatment)/PR 4077	E		
• Captan/Blackberry, Raspberry/ PR 4322, 3953	M		

ATTACHMENT 8

Ornamental Pesticide Registrations

- Azadirachtin/Aglanema/10622A
- Azadirachtin/Aralia/11204A
- Azadirachtin/Boston Fern/11205A
- Azadirachtin/Diffenbachia/10623A
- Azadirachtin/Dracaena/10624A, 11206A
- Azadirachtin/Easter Lily/10591A
- Azadirachtin/Ficus/10625A
- Azadirachtin/Fuchsia/10592A
- Azadirachtin/Gardenia/10597A
- Azadirachtin/Grape Ivy/11207A
- Azadirachtin/Palm/10626A
- Azadirachtin/Philodendron/11208A
- Azadirachtin/Poinsettia/10593A
- Azadirachtin/Pothos/11209A
- Azadirachtin/Schefflera/11210A
- Azadirachtin/Spathiphyllum/11211A, 11262A
- Azadirachtin/Syngonium/11212A
- PCNB/Abutilon/08506A
- PCNB/Aglaonema/03000A
- PCNB/Arborvitae/08479A
- PCNB/Aucuba/03250A
- PCNB/Cineraria/08471A
- PCNB/Columbine/10456A
- PCNB/Coral Bells/08457A
- PCNB/Foxglove/10458A
- PCNB/Fuchsia/08473A
- PCNB/Gardenia/03212A
- PCNB/Gloxinia/08475A
- PCNB/Impatiens/03207A
- PCNB/Maple/08478A
- PCNB/Maranta/01193A
- PCNB/Palm/03002A
- PCNB/Scabiosa/p5898A
- PCNB/Verbena/08514A
- PCNB/Viburnum/08498A

ATTACHMENT 9

Biorational Pest Control Research and Development

Microbial Pesticide Petitions and Petition Amendments Submitted to EPA in 1993:

Codling Moth Granulosis Virus/Apples, Pears, Walnuts and Plums (Prunes):

In 1992, IR-4 in cooperation with the University of California and the association for Sensible Pest Control Inc. submitted a sixteen volume petition to EPA requesting an exemption from the requirement of a tolerance for the Codling Moth Granulosis Virus (CMGV). The University of California is the registrant.

In May 1993, IR-4 prepared an amendment to the CMGV petition containing additional toxicology and product chemistry data. These additional data packages were forwarded to EPA in June, 1993. This additional toxicology and product chemistry data was requested by EPA, based on their initial screen of the CMGV petition.

Pseudomonas fluorescens Strain NCIB 12089/Mushrooms

In August 1993, IR-4 in cooperation with Mauri Laboratories of Australia and Sylvan Foods submitted a petition to EPA requesting a full exemption from the requirement of a tolerance for Pseudomonas fluorescens strain NCIB 12089 on mushrooms for the control of bacterial blotch. Full registration for this use is expected by April 15, 1994.

ATTACHMENT 10

Animal Drug Program

Public Master Files Published in the Federal Register:

PMF#	Disease/Species	Drug	Date
5429	Coccidiosis/Chukar Partridge	Lasalocid	7/21/93
5366	GI Parasites/Goats	Morantel Tartrate	11/02/92
5307	Ear Mites/Ranch Foxes	Ivermectin	11/29/91
3543	External Protozoa/Shrimp	Formalin	5/6/91
5118	GI Parasites/Goats	Fenbendazole	2/14/91
5258	Coccidiosis/Sheep	Decoquinatate	9/28/90
5042	Coccidiosis/Rabbits	Lasalocid	3/15/90
5117	GI Parasites/Goats	Levamisole HC1	9/8/89
3883	GI Parasites/Goats	Ivermectin	3/24/89
5020	Coccidiosis/Quail	Salinomycin	3/21/89
5071	Lungworms/Bighorn Sheep	Fenbendazole	2/14/89
5178	Ulcerative Enteritis/Quail	Bacitracin	2/22/88
5014	Coccidiosis/Quail	Monensin	4/14/87
5012	Coccidiosis/Goats	Decoquinatate	2/18/87
5055	Coccidiosis/Goats	Monensin	12/19/86
5056	Enteric Septicemia/Catfish	Sulfadimethoxine with Ormetoprim	4/16/86
5028	Gaffkemia/Lobsters	Oxytetracycline	1/3/86
3887	Coccidiosis/Pheasants	Amprolium	12/24/84
3895	Warbles/Reindeer	Ivermectin	12/24/84
3857	Gapeworm/Pheasants	Thiabendazole	2/22/84

ATTACHMENT 11

Animal Drug Program

Public Master Files Under Review by FDA/CVM:

PMF#	Disease/Species	Drug	IR-4 Region
5059	Hypodermosis/American Bison	Ivermectin	Northcentral
5157	Coccidiosis/Chukar Partridge	Sulfadimethoxine with Ormetoprim	Northeastern
5026	Bacterial Pneumonia/Sheep	Sulfamethazine	Western
5228	External Parasites/Striped Bass	Formalin	Southern
5258	Coccidiosis/Sheep	Decoquinat	Northeastern
5316	Bacterial Pneumonia/Goats	Oxytetracycline (LA-200)	Western
5321	Bacterial Pneumonia/Sheep	Oxytetracycline (LA-200)	Western
5331	Mastitis/Goats	Procaine Penicillin and Novobiocin	Western
5433	Bacterial Pneumonia/Sheep	Amoxicillin	Western
5440	Liver Flukes/Goats	Clorsulon	Southern

ATTACHMENT 12

Animal Drug Program

Animal Drug Projects Completed - Public Master File in Preparation

INAD#	Disease/Species	Drug	IR-4 Region
4447	Bacterial Pneumonia/Goats	Amoxicillin	Western

Animal Drug Projects Completed - Investigational New Animal Drug Data Under Review

INAD#	Disease/Species	Drug	IR-4 Region
6013	Bacterial Kidney Disease/ Salmonids	Erythromycin (Oral)	Western