

ANNUAL REPORT OF COOPERATIVE INTERREGIONAL  
RESEARCH PROJECT  
IR-4  
JANUARY 1 TO DECEMBER 31, 1984

1. PROJECT: IR-4 - A National Agricultural Program: Clearances of Animal Drugs, Biorationals (Microbials and Biochemicals), and Pesticides for Minor or Special Uses.

2. COOPERATING AGENCIES AND PRINCIPAL LEADERS:

Interregional Administrative Advisory Committee (AA):

Dr. J.P. Mahlstedt, Iowa State University, Chairman	Represents
Dr. D.J. Burns, Rutgers University	Northcentral Region
Dr. J.P. Jordan, CSRS Administrator	Northeastern Region
Dr. T.B. Kinney, ARS Administrator	USDA-CSRS
Dr. R.H. Kupelian, IR-4 National Director	USDA-ARS
Dr. D.E. Rolston, University of California	National Headquarters
Dr. N.P. Thompson, University of Florida	Western Region
	Southern Region

Technical Committee (TC):

Dr. P.H. Schwartz, Jr. USDA-ARS/Beltsville, Chairman (Staff Scientist, Pesticide Impact Assessment Staff)	USDA-ARS
Dr. R.H. Kupelian, Rutgers University, Executive Secretary (National Director, IR-4 Project)	National Headquarters
Dr. J.B. Bourke, Cornell University/Geneva (Northeastern IR-4 Regional Pesticide Lab. Director)	Northeastern Region
Dr. K.P. Dorschner, USDA-CSRS	USDA-CSRS (Pesticides)
Dr. J.P. Mahlstedt, Iowa State University	Administrative Advisors
Dr. Fumio Matsumura, Michigan State University (Northcentral IR-4 Regional Pesticide Lab. Director)	Northcentral Region
Dr. J.N. Seiber, University of California (Western IR-4 Regional Pesticide Lab. Director)	Western Region
Dr. H.S. Teague, USDA-CSRS	USDA-CSRS (Animal Drugs)
Dr. W.B. Wheeler, University of Florida (Southern IR-4 Regional Pesticide Lab. Director)	Southern Region

Supporting Committees:

Ad Hoc Animal Drug Advisory Staff

Dr. M.H. Bebeau, Mississippi State University, Chairman	Southern Region
Dr. C.S. Card, Pennsylvania State University	Northeastern Region
Dr. R. Gerrits, Animal Production, National Program Director (National Program Staff)	USDA-ARS
Dr. F.W. Oehme, Kansas State University	Northcentral Region
Dr. P.J. South, University of Idaho	Western Region

Consultants Staff

- Dr. K.R. Hill, USDA-ARS, Analytical Chemistry Lab., AEQI, Director
- Mr. H.L. Jamerson, EPA-OPP-RD, Minor Uses Officer
- Dr. R.E. Ridsdale, NACA Representative
- Mr. D.R. Stubbs, EPA-OPP-RD
- Dr. J.R. van Diepen, PPA Representative

Environmental Protection Agency (EPA) Advisors

- Ms. F.S. Bishop, EPA-OPP-RD-RSERB, Chief
- Mr. D.D. Camp, EPA-OPP-RD, Director
- Mr. S. Schatzow, EPA-OPP, Director
- Mr. J.G. Touhey, EPA-OPP, Advisor

2 ContinuedFood and Drug Administration (FDA) Advisors

Dr. L.M. Crawford, FDA-CVM, Director  
 Dr. G.B. Guest, FDA-CVM, Deputy Director  
 Dr. M.A. Norcross, FDA-CVM-NADE, Acting Associate Director  
 Dr. D.A. Gable, FDA-CVM-TDFA, Director  
 Dr. T.V. Raines, FDA-CVM-APDB, Vet. Medical Officer

National Headquarters Staff (201) 932-9575

The National Headquarters Staff is located at the New Jersey Agricultural Experiment Station, Cook College, Rutgers, The State University of New Jersey, New Brunswick, NJ 08903.

Dr. R.H. Kupelian, National Director	Dr. E.E. Viera, FDA Liaison
Prof. G.M. Markle, National Coordinator and Recording Secretary to the Project	Dr. J.A. Farnham, Animal Drug Consultant
Dr. M.E. Burt, Associate Coordinator	Mr. L.E. Mitchell, Pesticide Consultant
Dr. J.E. Elson, Associate Coordinator	Mr. P.L. Pontoriero, Pesticide Consultant
Dr. R.T. Guest, Associate Coordinator	Mrs. P.A. Sarica, Administrative Assistant
Dr. W.L. Biehn, Assistant Coordinator	Mrs. D.K. Infante, Information Specialist
Mr. D.M. Baker, Jr., EPA Liaison	Mrs. S.D. Ford, Secretary (To 1 DEC 84)
	Mrs. R.T. Harvey, Secretary
	Ms. Y. Colon, Secretary

IR-4 REGIONAL COORDINATORS AND STATE/FEDERAL LIAISON REPRESENTATIVES

IR-4's field research personnel includes (I) a Regional Field Research Coordinator and Laboratory Residue Analysis Coordinator for each of the four regions, i.e. Northeastern, Southern, Northcentral and Western, (II) four USDA-ARS scientists per region representing the disciplines of entomology, plant pathology, weed science and pesticide residue and metabolism chemistry, and (III) an IR-4 State Liaison Representative for each of the 50 states and the U.S. territories including the District of Columbia, Guam, Puerto Rico and Virgin Islands. The 55 IR-4 State Liaison Representatives are scientists appointed by the Director of their respective State Agricultural Experiment Station (SAES). Their mission is to define the crop pest and livestock disease control technology needs of the farmers, growers, ranchers and homeowners in their states with respect to the production of foods (i.e. fruits, vegetables, nuts, berries, grains, spices, meat, fish, etc.), fibers, feeds, ornamentals, nursery stock, forestry seedlings and fur-bearing animals.

On 15 SEP 82, the Committee of Nine officially approved the addition of an animal drug clearance program to the IR-4 Project which would be coordinated by the existing IR-4 administrative and research structure as a Project objective. Personnel added to provide an appropriate expertise base includes (IV) a Regional Animal Drug Coordinator for each of the four regions appointed by the respective regional Administrative Advisor and Technical Committee Representative; (V) a Veterinarian and Secretary at IR-4 HQ; and (VI) a Regional AD-HOC Drug Advisory Staff member for each of the four regions appointed by the respective SAES Director and a combination Drug Advisor/Coordinator for USDA-ARS.

Regional Ad Hoc Drug Advisors

Dr. C. Seymour Card, NE Region  
(814) 865-7696  
Specialty Area: Veterinary Pathology

Dr. Frederick W. Oehme, NC Region  
(913) 532-5679  
Specialty Area: Toxicology

Dr. Marshall H. Beleau, Southern Region  
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Specialty Area: Aquatic Animal Medicine

Dr. Peter J. South, Western Region  
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Specialty Area: Extension Veterinarian

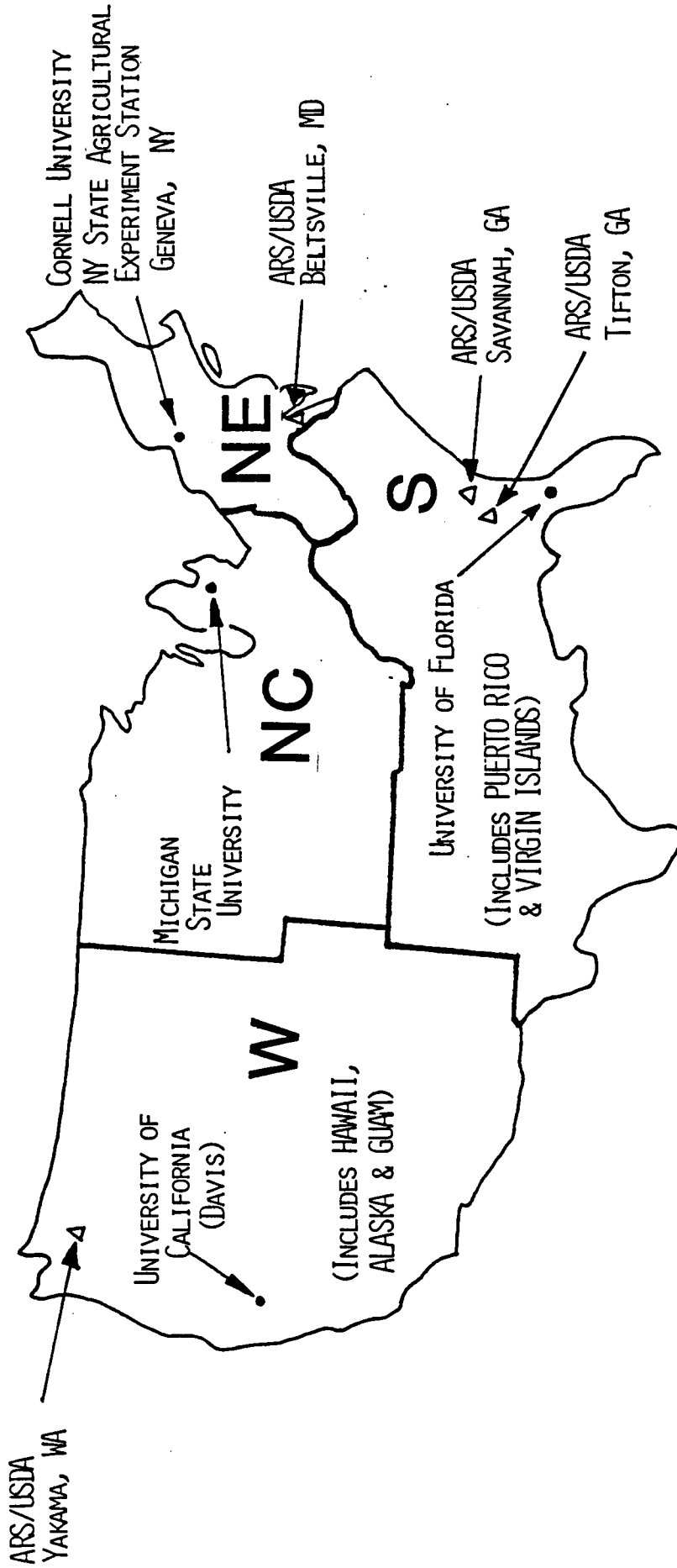
Dr. Roger Gerrits, USDA/ARS  
(201) 344-3066  
Specialty Area: Reproductive Physiology

FIELD RESEARCH PERSONNEL

The names and affiliations of the field research personnel described above and the location of the four regional laboratories and associated USDA-ARS laboratories are shown below. Regional Coordinators are physically located at their respective regional laboratories.

NAME	STATE	TELEPHONE	SPECIALTY AREA
<u>Northeastern Region</u>			
Dr. John B. Bourke	.....	787-2281	.....Chemistry
Dr. Paul B. Baker	.....	(315) 787-2327	.....Entomology
Dr. John B. Babish	.....	(607) 236-6541	.....Drug & Foreign Compound Metabolism
Dr. Terry Spittler	.....	(315) 787-2283	.....Chemistry
Dr. Richard A. Ashley	.....CT	(203) 486-3435	.....Plant Science
Mr. Mark R. Graustein	.....DE	(302) 451-2526	.....Entomology
Mr. Grady McDonald	.....DC	(202) 282-7372	.....Horticulture
Dr. James F. Dill	.....ME	(207) 581-7980	.....Entomology
Dr. James J. Linduska	.....MD	(301) 742-8788	.....Entomology
Dr. Charles F. Brodel	.....MA	(617) 295-2212	.....Entomology
Dr. James Bowman	.....NH	(603) 862-1159	.....Entomology
Mr. Kenneth Helrich	.....NJ	(201) 932-9720	.....Residue Chemistry
Dr. Paul B. Baker	.....NY (Geneva)	(315) 787-2327	.....Entomology
Dr. Maurice Tauber	.....NY (Ithaca)	(607) 256-7723	.....Entomology
Dr. Ralph O. Mumma	.....PA	(814) 863-4435	.....Entomology
Mr. J. Lincoln Pearson	.....RI	(401) 792-2358	.....Horticulture
Dr. A.R. Gotlieb	.....VT	(802) 656-2630	.....Plant Pathology
Dr. Joe E. Weaver	.....WV	(304) 293-6023	.....Entomology
Dr. Ralph E. Webb	.....MD, USDA-ARS	(301) 344-2269	.....Entomology
Dr. Julius Feldmesser	.....MD, USDA-ARS	(301) 344-3662	.....Nematology/Plant Pathology
Mr. J. Ray Frank	.....MD, USDA-ARS	(301) 663-7132	.....Weed Science
Dr. Kenneth R. Hill	.....MD, USDA-ARS	(301) 344-2495	.....Residue Chemistry
<u>North Central Region</u>			
Dr. Fumio Matsumura	.....Regional Lab. Director	(517) 353-9430	.....Entomology
Dr. Satoru Miyazaki	.....Pesticide Coordinator	(517) 353-9497	.....Pest. Analysis & Entomology
Dr. R. K. Ringer	.....Animal Drug Coordinator	(517) 355-8414	.....Avian & Fur-bearing Physiology/Toxicology
Dr. Richard Leavitt	.....Supervisory Chemist	(517) 353-6377	.....Analytical Chem.
Dr. David E. Foster	.....IA	(515) 294-1101	.....Entomology
Dr. Herbert J. Hopen	.....IL	(217) 333-1967	.....Horticulture
Dr. Paul C. Pecknold	.....IN	(317) 494-4628	.....Plant Pathology
Dr. Don Cress	.....KS	(913) 532-5891	.....Entomology
Dr. Satoru Miyazaki	.....MI	(517) 353-9497	.....(See above)
Dr. Leonard B. Hertz	.....MN	(612) 373-1103	.....Horticulture
Dr. N. J. Ntarella	.....MO	(314) 882-7511	.....Ext. Floriculturist
Dr. John D. Nalewaja	.....ND	(701) 237-7971	.....Weed Science
Dr. Roger Gold	.....NE	(402) 472-1446	.....Entomology
Dr. Acie Waldron	.....OH	(614) 422-7541	.....Entomology (Chem. Control)
Mr. Leon J. Wrage	.....SD	(605) 688-5121	.....Agronomy, Weed & Plant Science
Dr. John Wedberg	.....WI	(608) 262-3226	.....Entomology
Dr. David K. Reed	.....IN, USDA-ARS	(812) 882-4942	.....Entomology
Dr. Charles Krause	.....OH, USDA-ARS	(614) 363-1129	.....Plant Pathology/ Nematology
Dr. Loyd M. Wax	.....IL, USDA-ARS	(217) 333-1277	.....Weed Science
Dr. William M. Doane	.....IL, USDA-ARS	(309) 685-4011	.....Physical Chem.
<u>Southern Region</u>			
Dr. Willis B. Wheeler	.....Regional Lab. Director	(904) 392-1978	.....Biochemistry
Dr. Charles W. Meister	.....Pesticide Coordinator	(904) 392-1978	.....Plant Pathology
Dr. Steve F. Sundlof	.....Animal Drug Coordinator	(904) 392-1841	.....Veterinary Toxicology
Dr. Promode Bardalaye	.....Supervisory Chemist	(904) 392-1978	.....Res. Chemistry
Dr. Michael Williams	.....AL	(205) 826-4850	.....Entomology
Dr. Terry L. Lavy	.....AR	(501) 575-3955	.....Weed Science
Dr. Sam S. Fluker	.....FL	(904) 392-4721	.....Entomology
Dr. Emmett D. Harris	.....GA	(404) 542-1765	.....Entomology
Dr. Chris M. Christensen	.....KY	(606) 258-5955	.....Entomology
Dr. Lowell L. Black	.....LA	(504) 388-1464	.....Plant Pathology
Dr. William W. Neel	.....MS	(601) 325-2085	.....Entomology
Dr. I. Jack Sheets	.....NC	(919) 737-3391	.....Weed Science
Dr. O. Norman Nesheim	.....OK	(405) 624-5531	.....Entomology/Plt. Pathology
Mr. Rafael Montalvo-Zapata	.....PR	(809) 767-9705	.....Chemistry
Dr. William DuBose	.....SC	(803) 656-3111	.....Entomology
Miss Nancy Taylor	.....TN	(615) 974-7138	.....Plant Pathology
Dr. Rodney L. Holloway	.....TX	(409) 845-7028	.....Entomology
Dr. Michael J. Weaver	.....VA	(703) 961-6543	.....Plant Pathology
Mr. Walter I. Knausenberger	.....Virgin Islands	(809) 778-0246	.....Pest Management
Dr. James M. Schalk	.....SC, USDA-ARS	(803) 556-2210	.....Entomology
Dr. Alva W. Johnson	.....GA, USDA-ARS	(912) 386-3372	.....Nematology
Dr. Norman Glaze	.....GA, USDA-ARS	(912) 386-3355	.....Plant Physiology
Dr. Donald Wauchope	.....GA, USDA-ARS	(912) 386-3514	.....Residue Chemistry
<u>Western Region</u>			
Dr. James Seiber	.....Regional Lab. Director	(916) 752-1142	.....Chemistry
Dr. Harold G. Alford	.....Pesticide Coordinator	(916) 752-7010	.....Entomology
Dr. Arthur L. Craigmill	.....Animal Drug Coordinator	(916) 752-1142	.....Environ. Veterinary Toxicology
Dr. Thomas Archer	.....Supervisory Chemist	(916) 752-1142	.....Chemistry
Dr. Jeff Conn	.....AK	(907) 479-7614	.....Weed Science
Dr. David N. Byrne	.....AZ	(602) 621-1151	.....Entomology
Mr. Harold G. Alford	.....CA	(916) 752-7010	.....(See above)
Dr. Bert L. Bohmont	.....CO	(303) 491-5237	.....Ag. Chemistry & Weed Science
Dr. Claron Bjork	.....Guam	(671) 734-2575	.....Entomology
Dr. John W. Hylin	.....HI	(808) 948-8352	.....Biochemistry
Dr. Gene P. Carpenter	.....ID	(208) 885-6595	.....Entomology
Dr. Michael J. Jackson	.....MT	(406) 994-3517	.....Agronomy
Dr. Ellis Huddleston	.....NM	(505) 646-3225	.....Entomology
Dr. Harry G. Smith	.....NV	(702) 784-6911	.....Ent. & Parasitology
Dr. James M. Witt	.....OR	(503) 754-2564	.....Ag. Chem. & Toxicology
Mr. Howard Deer	.....UT	(801) 750-1598	.....Pest. & Toxic Substances
Mr. Richard C. Maxwell	.....WA	(509) 335-2995	.....Entomology
Mr. Everett Spackman	.....WY	(307) 786-4261	.....Entomology
Dr. Eric Halfhill	.....WA, USDA-ARS	(509) 575-5982	.....Entomology
Dr. Leslie M. McDonough	.....WA, USDA-ARS	(509) 575-5970	.....Pest. Chemistry

IR-4 REGIONAL RESIDUE LABORATORIES •  
AND  
ASSOCIATED ARS/USDA LABORATORIES ▲



### 3. PROGRESS OF WORK AND PRINCIPAL ACCOMPLISHMENTS:

#### (A) FOOD USE RESEARCH PROJECTS :

There are currently 2694 total IR-4 food-use requests, an increase over the 2564 requests reported last year. Of these, 643 are characterized as researchable projects. During 1984, the four regions and USDA-ARS scheduled research on 209 food-use projects, from which residue samples went to 19 state and USDA-ARS cooperating laboratories and 10 chemical company laboratories. With the completion of 1984 and prior research projects, data requirements will be fulfilled for an additional 162 minor use needs. Research protocols for 421 requests were prepared or revised and the following pesticides/commodities were researched in 1984:

#### (1) BIORATIONALS:

Codling moth granulosis virus (CMGV)/apple, pear, walnut - Cephalosporium lecanii/tomato.

#### (2) FUNGICIDES AND NEMATOCIDES:

Benomyl/onion, potato, spinach, watercress - Captafol/peach - Carboxin/cantaloupe, pepper, tomato - Chlorothalonil/asparagus, broccoli, caneberry, Chinese mustard, horseradish, pepper - Ethoprop/broccoli - Fenamiphos/beet, cabbage, celery, eggplant, onion, pepper, snap beans, tomato - Iprodione/broccoli, cabbage, cauliflower, Chinese cabbage, kale, leek, watercress - Mancozeb/asparagus, broccoli, Chinese cabbage, Chinese mustard, Chinese radish, ginseng, leek, parsley, radish - Methyl bromide/asparagus, onion - Oxamyl/strawberry - PCNB/carrot, mustard greens - Thiabendazole/lettuce, sweet potato, yams - Triforine/asparagus, cantaloupe, cucumber.

#### (3) HERBICIDES AND PLANT GROWTH REGULATORS:

Acifluorfen/tomato - Atrazine/blueberry - Bentazon/pea - Diclofop-methyl/annual canary grass - Diethatyl-ethyl/broccoli, cabbage, carrot, cauliflower, collards, kale, mustard greens, Swiss chard - Diquat/cucurbits - Diuron/cherry, rhubarb - Ethepon/bananas - Fluazifop-butyl/asparagus, bean, blueberry, broccoli, cabbage, cauliflower, Chinese cabbage, collards, cranberry, mustard greens, okra, parsley, pea, pepper, pumpkin, radish, rhubarb, safflower, spinach, sweet potato, tomato, turnip - Glyphosate/Japanese millet, onion - Metolachlor/cabbage, carrot, Chinese cabbage, Chinese radish, mustard greens, onion, pepper, strawberry, sweet sorghum, tomato - Napropamide/watercress - Oryzalin/asparagus - Oxyfluorfen/asparagus, banana, broccoli, cabbage, guava, macadamia, mustard greens, papaya - Paraquat/Japanese millet, sweet corn, tyfon - Prometryn/dill, parsley - Propachlor/rutabaga - Pyrazon/Swiss chard - Sethoxydim/asparagus, broccoli, blueberry, buckwheat, carrot, Chinese cabbage, cranberry, endive, eggplant, mustard greens, okra, parsley, pumpkin, radish, rhubarb, sweet potato, spinach, safflower, turnip, watermelon - Simazine/mango - 2,4-D/soybeans - 2,4-DB/small grains.

#### (4) INSECTICIDES AND MITICIDES:

Acephate/guar, pea - Aldicarb/lentil, pea - Carbaryl/cabbage, date, potato - Carbofuran/asparagus, clover, eggplant - Chlorpyrifos/asparagus, collards, cucumber, leek, snap beans - Cyhexatin/avocados - Diazinon/asparagus, Chinese radish - Dimethoate/asparagus, mung bean - Disulfoton/celery, mustard greens, turnips - Fenvalerate/cattle, celery, Chinese broccoli, Chinese cabbage, mung bean, okra - Hexakis/avocado, blueberry, caneberry, tomato - Malathion/oat hay - Methamidophos/asparagus, Chinese radish, squash - Mevinphos/endive - Oxamyl/cabbage, parsley, spinach - Oxydemetonmethyl/carrot, Swiss chard - Methyl parathion/Chinese broccoli, Chinese cabbage, Chinese mustard - Permethrin/blueberry, cranberry, raspberry, watermelon - Propargite/avocado, sweet corn, tomato - Resmethrin/cantaloupe, cucumber, pepper, pumpkin, squash, Swiss chard, tomato, snap bean, watermelon.

3 Continued

## (5) RODENTICIDES:

Strychnine/alfalfa, grains, pasture - Zinc phosphide/artichoke, corn, wheat

(B) DEVELOPMENT AND REGULATORY SUCCESSES:

IR-4 HQ prepared 65 tolerance petitions in calendar year 1984. Forty-nine (49) tolerance petitions were written and submitted to EPA and 16 petitions are still under review by the manufacturers (eventual label registrants) prior to EPA submission. Additionally, 6 major petition amendments were submitted to EPA. The amendments to previously submitted IR-4 petitions answered EPA's responses for the need for additional residue data, and in some cases, for toxicology data.

During 1984, IR-4 petition submissions resulted in pesticide clearances representing 120 tolerances. These are reviewed in detail below:

## (1) FUNGICIDES AND NEMATOCIDES (6 tolerances)

Benomyl/Brussels sprouts, Chinese cabbage, dandelion, turnip greens - Fenamiphos/asparagus, raspberries.

## (2) HERBICIDES AND PLANT GROWTH REGULATORS (10 tolerances)

Bromoxynil/mint hay - DCPA/radish roots and tops - Dinoseb/pasture grass & hay - Ethephon/pumpkins - Norflurazon/blackberries, blueberries, raspberries - Paraquat/acerola.

## (3) INSECTICIDES (23 tolerances)

Acephate/macadamia nuts - Chlorpyrifos/asparagus, mushrooms - Diazinon/Brassica leafy vegetables - Diflubenzuron/pasturegrass - Dimethoate/lentils - Fenbutatin-oxide/eggplants - Methyl parathion/Brassica leafy vegetables - Mevinphos/watercress - Oxamyl/pumpkins - Oxydemetonmethyl/apricots - Permethrin/asparagus, bell peppers, eggplant, rangegrass.

## (4) CROP GROUPINGS (81 tolerances)

EPA established several crop definition extensions at the request of IR-4. These are: (a) to define caneberries by listing species and their varieties to be included in the group; (b) to include pumpkins in the squash group; (c) to define tangerines as mandarins or mandarin oranges, tangelos, tangors and other hybrids of tangerines with other citrus; (d) to include Chinese broccoli within the definition of broccoli; (e) to include Chinese cabbage (tight-heading varieties) within the definition of cabbage; (f) to include Florence fennel within the definition of celery, and (g) to include triticale within the definition of wheat.

IR-4 requests such changes or additions to crop definitions in order to expedite pesticide registrations for many minor crop uses. The incorporation of these concepts into the Code of Federal Regulations permits great savings in time, manpower and financial resources for both IR-4 and EPA and better serves the needs of the U.S. farmers as well as the U.S. consumers. As a direct result of the establishment of the previously mentioned crop definition extensions, the following 14 research projects which represent 81 separate tolerances have been cleared and the uses can be registered: all pesticides with wheat  
tolerances/triticale - chlorothalonil/Chinese broccoli, Chinese cabbage - DCPA/Chinese  
broccoli - Disulfoton/Chinese cabbage - Fenamiphos/Chinese cabbage - Fenvalerate/Chinese  
broccoli, Chinese cabbage - Methamidophos/Chinese cabbage - Methomyl/Chinese broccoli -  
Mevinphos/Chinese cabbage - Oxydemetonmethyl/Chinese cabbage - Permethrin/Chinese cabbage -  
NAA/tangors.

3 Continued(C) ORNAMENTAL RESEARCH AND DEVELOPMENT:

During the 7 1/2 years the IR-4 Ornamentals Program has been in existence (APR 77 - NOV 84), IR-4 has undertaken 9,234 ornamental research trials. During the year, 732 ornamental research trials were funded through the IR-4 Program. Data from research completed to date have made it possible for IR-4 to write registration packages for 26 insecticides, 22 fungicides and 25 herbicides. During 1984, IR-4 supplied data in support of 206 ornamental pesticide registrations, bringing the total number of label registrations on ornamentals to 1860 or an average of 21 clearances per month. Pesticides for which new or expanded labeling on ornamental crops were obtained during 1984 include: Dual®, Dual® + Princep®, Poast®, Bayleton®, Ornalin®, Pounce®, SBP-1382®, and Vydate®.

The seventh IR-4 Ornamentals Workshop which was hosted by EPA was held in Arlington, VA on 5-6 SEP 84 at the Crystal City Mall. Seventy state, federal and industry scientists participated in the workshop in an advisory capacity. The workshop participants reviewed and prioritized existing pesticide clearance requests on ornamentals, identified new ornamental pesticide clearance needs, and assisted in the preparation of research protocols for ornamental research projects. The workshop participants selected 1265 priority research projects involving over 50 pesticides. These priority projects are eligible for IR-4 funding through the IR-4 Regional Laboratory Program. The workshop was made possible by a grant from EPA to IR-4 HQ at Rutgers University.

BLACK VINE WEEVIL COOPERATIVE IR-4/CSRS/ARS/SAES PROJECT

The black vine weevil, Otiorhynchus sulcatus (F.), is a serious insect pest of commercial nursery stock, causing economic losses through adult leaf feeding and larval root feeding, of both field grown and containerized nursery stock. Distribution of the black vine weevil (BVW) is largely confined to localized areas within the northern U.S. and Canada. Since females are flightless, the principle method of distribution is by interstate or intrastate movement of infested balled or containerized nursery stock.

Whereas distribution of BVW populations from infested to uninfested areas was diminished by the use of soil applications of chlordane for control of larval populations, the cancellation of chlordane and heptachlor by EPA effective 31 DEC 79 precluded continued use of these materials in compliance with state nursery certification regulations. In that there were no efficacious insecticides registered to control the larval forms of the BVW, a special research program was administered by IR-4 HQ to develop necessary efficacy and phytotoxicity data for registration of one or more alternative insecticides for control of the BVW larvae. USDA-ARS grant funds were utilized to sponsor research at five SAES laboratories and one USDA-ARS laboratory to evaluate five insecticides on 20 container and field-grown woody ornamental species.

In containerized nursery stock, bendiocarb W.P. and carbofuran flowable provided good larval BVW control with no adverse effects at practical use rates. In field-grown production, granular treatments of oxamyl and carbofuran resulted in adequate control with no phytotoxicity.

Carbofuran 4F is presently labelled in OH and MI for BVW control in container production and in CA and OR for both field and container production. As a result of the above IR-4 sponsored research, Mallinckrodt submitted a national label to EPA for approval of bendiocarb (DYCAR®) for soil application to control BVW larvae on a wide variety of nursery plants based on IR-4 data.



3 Continued(D) BIORATIONAL RESEARCH AND DEVELOPMENT:

September, 1984 marks the completion of two years of the IR-4 Biorationals Program. The following biorational pest control projects were funded in 1984:

Codling Moth Granulosis Virus (CMGV)/apple, pear, walnut; Beauveria bassiana on ornamentals for control of the black vine weevil and turf for control of the chinch bug; Cephalosporium lecanii (Vertalec® strain)/chrysanthemum and tomatoes for the control of aphids; Cephalosporium lecanii (Mycotal® strain)/poinsettia and bedding plants for the control of whiteflies.

In March, 1984, IR-4 HQ wrote a petition proposing a temporary exemption from the requirements of a tolerance for Codling Moth Granulosis Virus (CMGV). Based on the data contained in this petition, MicroGeneSys Inc. of West Haven, CT obtained an Experimental Use Permit (EUP) for the use of CMGV in apple, pear and walnut production on 14 JUN 84. The EUP is for a period of two years.

(E) ANIMAL DRUG RESEARCH AND DEVELOPMENT:

Since January 1983, 115 drug requests have been submitted to IR-4 HQ. Twenty-nine drug requests are in the research stage. Eighty-six drug requests are in various stages of evaluation and protocol development. The 29 research projects which were established in cooperation with 14 universities, USDI-Fish & Wildlife Service, USDA-Agricultural Research Service and 13 pharmaceutical companies are as follows:

<u>ADR NUMBER</u>	<u>LIVESTOCK</u>	<u>DISEASE</u>	<u>DRUG NEEDED</u>	<u>COOPERATING INSTITUTIONS</u>
1	Angora goats	Coccidiosis	Monensin	Texas A&M University & Eli Lilly Company
2	Pheasants	Coccidiosis	Amprolium	Penn State University Merck & Company, Inc.
3	Feedlot-lambs	Coccidiosis	Monensin	Texas A&M University & Eli Lilly Company
4	Catfish	<u>Aeromonas hydrophila/</u> <u>Edwardsiella ictaluri</u>	Sulfadimothoxine plus Ormetoprim	Mississippi State University & Hoffmann-LaRoche, Inc.
5	Pheasants	Gapeworms	Thiabendazole	Penn State University & Merck & Company, Inc.
7	Rabbits	Coccidiosis	To be determined	University of Arkansas
8.	Goats	Liver flukes	Albendazole	Washington State University & Smith Kline Animal Health Products
9	Ducks	<u>P. anatipestifer</u>	Lincomycin	Cornell University & The Upjohn Company
10	Ducks	Erysipelas	Penicillin	Cornell University
11	Reindeer	Warble flies	Ivermectin	University of Alaska & Merck & Company, Inc.
12	Sheep & Goats	Muellerius Capillaris & Trichuris	Fenbendazole	Purdue University
13	Cattle	Acute Bovine Pulmonary Empysema & Edema	Monensin	Washington State University & Eli Lilly Company

3 Continued(E) ANIMAL DRUG RESEARCH AND DEVELOPMENT: (continued)

<u>ADR NUMBER</u>	<u>LIVESTOCK</u>	<u>DISEASE</u>	<u>DRUG NEEDED</u>	<u>COOPERATING INSTITUTIONS</u>
14	Feedlot-lambs	Coccidiosis	Decoquate	Washington State University & Rhone-Poulenc Company
15	Lobsters	Gaffkemia	Oxytetracycline	University of Maine & The Pfizer Company
17	Goats	Gastrointestinal worms	Ivermectin	University of Nebraska & Merck & Company, Inc.
18	Salmonid Fishes	Bacterial Gill disease	Chloramine-T	USDI, Fish & Wildlife Service & Wisconsin Pharmacal Co.
19	Alligators	Bacterial diseases	Oxytetracycline	University of Florida & The Pfizer Company
31	Wild Ducks	Schistosomiasis	Praziquantel	Hope College (Michigan) & Bayvet Laboratories
32	Dairy Goat kids	Bacterial enteritis	Ampicillin (BoIus)	University of California & Beecham Laboratories
33	Dairy Goats	Bacterial infections	Amoxicillin Trihydrate	University of California & Beecham Laboratories
42	Dairy Goats	Bacterial infections	Oxytetracycline	University of California & Pfizer & Company
61	Dairy Goats	Bacterial infections	Tylosin (Injection)	University of California & Eli Lilly Company
63	Dairy Goats	Mastitis	Benzathine Cloxacillin	University of California & Bristol Laboratories
74	Sheep	Bacterial Pneumonia	Sulfamethazine	University of Idaho & Norden Laboratories
66	Dairy Goats	Mastitis	Novobiocin & Procaine Penicillin	University of California & The Upjohn Company
113	Quail	Coccidiosis	Amprolium	ARS & Merck & Co.
114	Quail	Coccidiosis	Monensin	ARS & Eli Lilly Co.
115	Quail	Coccidiosis	Salinomycin	ARS & A.H. Robbins Co.
111	Goats	Coccidiosis	Decoquate	Washington State University & Rhone-Poulenc Co.

3 Continued(E) ANIMAL DRUG RESEARCH AND DEVELOPMENT: (continued)

Three new animal drugs uses were cleared by IR-4 in 1984. IR-4's first submission approved by FDA/Center for Veterinary Medicine (CVM), (ADR #5) thiabendazole/pheasants for gapeworm control was published in the Federal Register on 25 JUL 84. The next two clearance submissions approved by FDA/CVM, (ADR #2) amprolium/pheasant for the prevention of coccidiosis, and (ADR #11) ivermectin/reindeer for the treatment and control of warbles were published in the Federal Register on 24 DEC 84.

The IR-4 Regional Animal Drug Coordinators and HQ scientists met on 16-17 AUG 84 in Jackson, MS to review the candidate research projects and to review priority procedures for the 1985 IR-4 Drug Research Program.

The second IR-4/FDA Workshop was held at the Sheraton Potomac Inn, Rockville, Maryland on 21-22 AUG 84. One hundred and twenty-five scientists from academia, pharmaceutical industry, FDA's Center for Veterinary Medicine and animal producers met to discuss areas of common interest for the future of the minor species. The discussion was centered on the revised minor use animal drug guidelines concerning data requirements, protocol design, drug approval process and establishing a new list of drug priorities for each minor species. There was a general consensus that a third IR-4/FDA Workshop is needed. The workshop was made possible by a grant from FDA to IR-4 HQ at Rutgers University.

The Center for Veterinary Medicine has provided a grant of \$24,850 to IR-4 HQ, Rutgers University to engage the services of an environmental consultant. The consultant will prepare the environmental impact statement for each Public Master File (PMF) to be submitted to FDA/CVM for minor use drugs and he will also be available to advise the IR-4 Project in matters related to environmental issues. Dr. Stanley Katz, Chairman of the Department of Biochemistry and Microbiology, Cook College, Rutgers University, was selected for this position.

(F) COORDINATION WITH FEDERAL AGENCIES:

Agricultural Research Service (ARS) scientists cooperated with SAES scientists on 81 food, 301 ornamental and 3 animal drug specialty use projects. This team work approach is providing the farmers, ranchers, growers, nurserymen and homeowners with the technologies that will result in increased production efficiency. Eighty-eight percent (88%) of the states participated in the 1984 research projects.

4. USEFULNESS OF FINDINGS:

Without the field work conducted by the SAES and USDA-ARS and the subsequent successful tolerance establishment, minor commodity uses would seldom, if ever, be cleared due to the negative economic factors confronting industrial manufacturers. In this sense, IR-4 serves a valuable "bridging" role between American farmers and ranchers, pesticide and drug producers, and regulatory agencies, i.e. no other federal or state mechanism exists to assure that the animal, fruit, vegetable, and ornamental growers, both large and small, have the drug, pesticide and biorational control materials they need to produce commercial yields of high quality and wholesome commodities. The clearances for 1984 will provide protection for commodities valued at more than 3 billion dollars. IR-4 continues to be the clearinghouse and communication center for the clearance of safe animal drugs and safe crop protection chemicals, including biorationals, which are the backbone of integrated pest management (IPM) systems. The biorational research, including microbials and biochemical control agents, also supports the organic or alternative farming systems.

5. WORK PLANNED FOR NEXT YEAR:

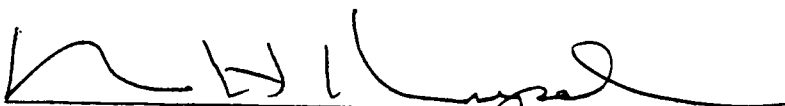
IR-4 will continue to develop data required by EPA and/or FDA for the establishment of minor use tolerances, including IPM materials, and animal drug approvals, as necessary, appropriate and as funds permit. Additionally, a similar effort will be expended in developing nonfood uses, i.e. ornamental registration data packages. In that funding levels for food and nonfood uses are not adequate to address more than 25% of the researchable food-use projects on the books, we will continue to work on the highest priority needs and maintain the food-use program at the expense of the ornamental or nonfood use program. Additionally, funding levels for the animal drug and biorational programs are not adequate to address more than 10% and 50%, respectively, of the researchable projects on the books. The research program in ornamentals has been reduced by 40% because of the funding shortfall.

In order to gain maximum benefit from a limited funding base, IR-4 works closely with EPA, FDA and the pesticide and animal drug industries. Requests are screened carefully so that projects involving chemicals having significant data gaps can either be eliminated or delayed as the situation dictates. By doing this, the overall efficiency of all operations will be improved so that time and money are not expended on projects which cannot be successfully concluded at the present time.

6. PUBLICATIONS:

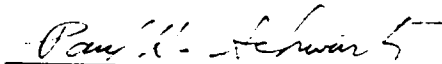
- a) IR-4 Newsletter (Quarterly)
- b) C-Notes (Biannually)
- c) SEEER (Biannually)
- d) Burt, M.E., G.M. Markle and R.H. Kupelian. 1984. The Clearance of Herbicides For Minor Uses. Abstracts - 1984 Meeting of the Weed Science Society of America.
- e) Markle, G.M., M.E. Burt and R.H. Kupelian. 1984. The Clearance of Insecticides For Specialty Crops. Abstracts of the 56th Annual Meeting of the Eastern Branch, Entomological Society of America.
- f) Biehn, W.L., R.T. Guest and R.H. Kupelian. 1984. IR-4 Programs for Minor Use Pesticide Registration. IN Proceedings of the 4th Annual Industry Conference on the Leafminer.

December 31, 1984


  
R.H. Kupelian, National Director

Approved:

Jan 18, 1985  
Date

  
P.H. Schwartz, Chairman, Technical Committee

1/22/85  
Date

  
J.P. Mahlstedt, Chairman, Administrative Advisors