

ANNUAL REPORT OF COOPERATIVE INTERREGIONAL RESEARCH PROJECT

IR-4

JANUARY 1 to DECEMBER 31, 1983

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

2. COOPERATING AGENCIES AND PRINCIPAL LEADERS:

Interregional Administrative Advisory Committee (AA):

Table with 2 columns: Name and Title, and Represents. Lists members like Dr. J.P. Mahlstedt, Dr. D.J. Burns, etc., and their regional or agency affiliations.

Technical Committee (TC):

Table with 2 columns: Name and Title, and Represents. Lists members like Dr. P.H. Schwartz, Jr., Dr. R.H. Kupelian, etc., and their regional or agency affiliations.

Supporting Committee:

Ad Hoc Drug Advisory Staff

Table with 2 columns: Name and Title, and Represents. Lists members like Dr. M.H. Bealeu, Dr. C.S. Card, etc., and their regional or agency affiliations.

Consultants Staff:

Table with 2 columns: Name and Title. Lists consultants like Dr. K.R. Hill, Mr. H.L. Jamerson, etc.

Environmental Protection Agency (EPA) Advisors

Ms. F.S. Bishop, EPA-OPP-RD-RSERB, Chief  
Mr. D.D. Campt, EPA-OPP-RD, Director  
Mr. E.L. Johnson, EPA-OPP, Director  
Mr. J.G. Touhey, EPA-OPP-BUD, Director

Food and Drug Administration (FDA) Advisors

Dr. W.B. Bixler, FDA-BVM-Voluntary Compliance & Operations, Associate Director  
Dr. L.M. Crawford, FDA-BVM, Director  
Dr. D.P. Ducharme, FDA-BVM-DDAS, Director

National Headquarters Staff (201) 932-9575

National Headquarters Staff 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  
Prof. G.M. Markle, National Coordinator and  
Recording Secretary to the Project  
Dr. J.E. Elson, Associate Coordinator  
Dr. R.T. Guest, Associate Coordinator  
Dr. W.L. Biehn, Assistant Coordinator  
Dr. M.E. Burt, Assistant Coordinator  
Mr. D.M. Baker, Jr., EPA Liaison

Dr. E.E. Viera, FDA Liaison  
Dr. J.A. Farnham, Animal Drug Consultant  
Mr. L.E. Mitchell, Pesticide Consultant  
Mrs. P.A. Sarica, Administrative Assistant  
Mrs. D.K. Infante, Information Specialist  
Mrs. S.D. Ford, Secretary  
Mrs. R.T. Harvey, Secretary  
Ms. Y. Colon, Secretary

IR-4 REGIONAL COORDINATORS AND STATE/FEDERAL LIAISON REPRESENTATIVES

CROP PROTECTION AGENTS  
(Conventional Pesticides and Biorationals)

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 Directors of their respective State Agricultural Experiment Stations (SAES). Their mission is to define the crop pest and livestock disease control technology needs of the farmers, growers, ranchers and homeowners in their representative 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.

## ANIMAL DRUGS

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 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; (V) a Regional Animal Drug Coordinator for each of the four regions appointed by the respective regional Administrative Advisor and Technical Committee Representative; and (VI) a Veterinarian and Secretary at IR-4 HQ.

Regional Ad Hoc Drug Advisors

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

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

Dr. Marshall Beleau, Southern Region  
(601) 686-9311  
Specialty Area: Aquatic Animal Medicine

Dr. Peter J. South, Western Region  
(208) 885-7081  
Specialty Area: Extension Veterinarian

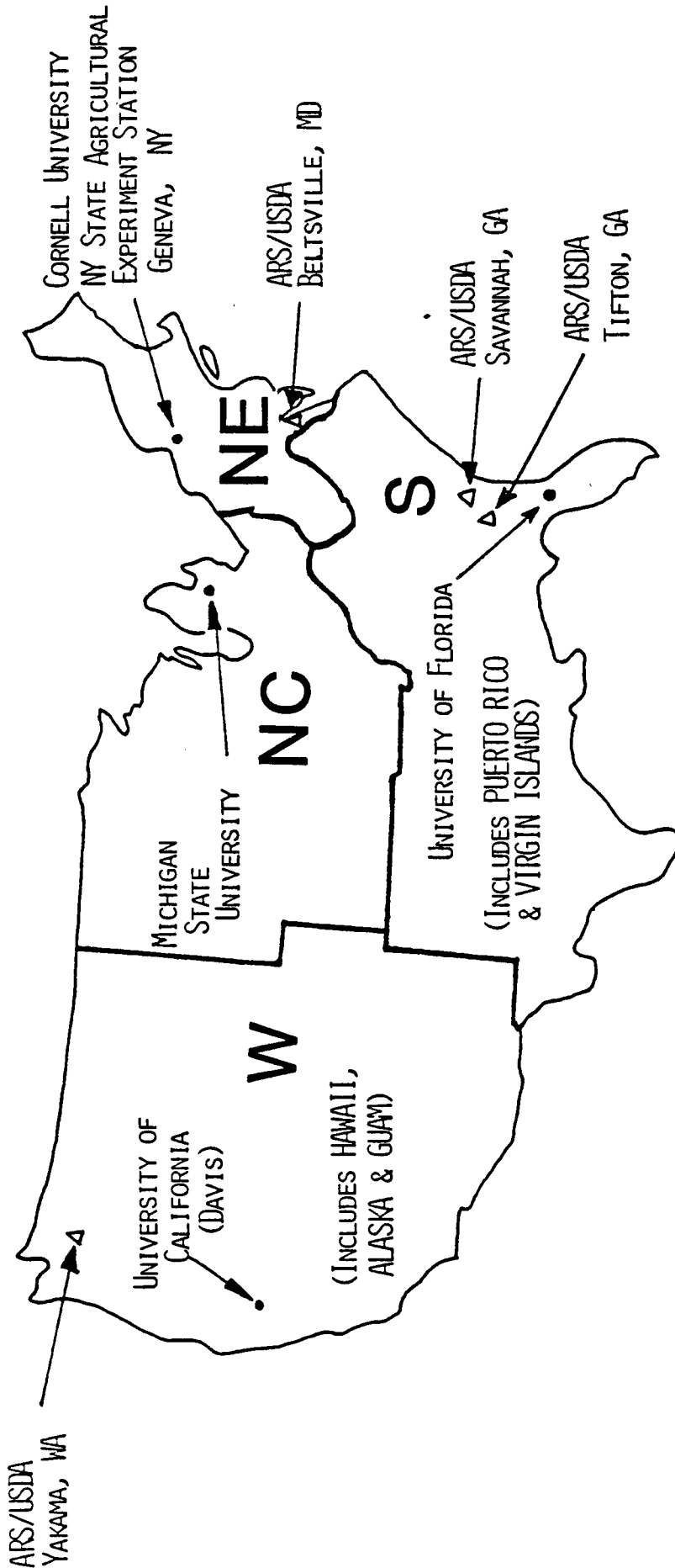
Dr. Roger Gerrits, USDA/ARS  
(201) 344-3066  
Specialty Area: Reproductive Physiology

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.....	.....	(315) 787-2281.....	.....Chemistry
Dr. Paul B. Baker.....	.....	(315) 787-2327.....	.....Entomology
Dr. John B. Babish.....	.....	(607) 256-6541.....	.....Drug & Foreign Compound Metabolism
Dr. Terry Spittler.....	.....	(315) 787-2283.....	.....Chemistry
Dr. David A. Kollas.....	.....	(203) 486-3435.....	.....Pomology
Dr. Grady McDonald.....	.....	(202) 282-7372.....	.....Horticulture
Dr. James F. Dill.....	.....	(207) 581-7980.....	.....Entomology
Dr. James J. Linduska.....	.....	(301) 742-8788.....	.....Entomology
Dr. Charles F. Brodel.....	.....	(617) 295-2212.....	.....Entomology
Dr. James Bowman.....	.....	(603) 862-1159.....	.....Entomology
Dr. Kenneth Heinrich.....	.....	(201) 932-9720.....	.....Residue Chemistry
Dr. Paul B. Baker.....	.....	(315) 787-2327.....	.....Entomology
Dr. James E. Devey.....	.....	(607) 256-3283.....	.....Entomology
Dr. Ralph O. Humma.....	.....	(814) 863-0844.....	.....Entomology
Mr. J. Lincoln Pearson.....	.....	(401) 792-2358.....	.....Horticulture
Dr. A. R. Gotlieb.....	.....	(802) 656-2630.....	.....Plant Pathology
Dr. Joe E. Weaver.....	.....	(304) 293-6023.....	.....Entomology
Dr. Ralph E. Webb.....	.....	(301) 344-2269.....	.....Entomology
Dr. Julius Feldmesser.....	.....	(301) 344-3662.....	.....Nematology/ Plant Pathology
Mr. J. Ray Frank.....	.....	(301) 662-7132.....	.....Weed Science
Dr. Kenneth R. Hill.....	.....	(301) 344-2495.....	.....Residue Chemistry
<u>Northcentral Region</u>			
Dr. Fumio Matsumura.....	.....	(517) 353-9430.....	.....Entomology
Dr. Satoru Miyazaki.....	.....	(517) 353-9497.....	.....Pest. Analysis & Entomology
Dr. R. K. Ringer.....	.....	(517) 355-8414.....	.....Avian & Fur-bearing Physiology/Toxicology
Dr. Richard Leavitt.....	.....	(517) 353-6377.....	.....Analytical Chem.
Dr. David E. Foster.....	.....	(515) 294-1101.....	.....Entomology
Dr. Herbert J. Hopewell.....	.....	(217) 333-1967.....	.....Horticulture
Dr. Paul C. Pecknold.....	.....	(317) 494-4628.....	.....Plant Pathology
Dr. Don Cress.....	.....	(913) 532-5891.....	.....Entomology
Dr. Satoru Miyazaki.....	.....	(517) 353-9497.....	.....(See above)
Dr. Leonard B. Hertz.....	.....	(612) 373-1103.....	.....Horticulture
Dr. Delbert D. Hemphill.....	.....	(314) 882-7511.....	.....Hort., Plant Physiology
Dr. John D. Nalewaja.....	.....	(701) 237-7971.....	.....Weed Science
Dr. Roger Gold.....	.....	(402) 472-1446.....	.....Entomology
Dr. Acie Waldron.....	.....	(614) 422-7541.....	.....Entomology (Chem. Control)
Mr. Leon J. Wrage.....	.....	(605) 688-5121.....	.....Agronomy, Weed & Plant Science
Dr. John Wedberg.....	.....	(608) 262-3226.....	.....Entomology
Dr. David K. Reed.....	.....	(812) 882-4942.....	.....Entomology
Dr. Charles Krause.....	.....	(614) 363-1129.....	.....Plant Pathology/ Nematology
Dr. Loyd M. Wax.....	.....	(217) 333-1277.....	.....Weed Science
Dr. William M. Doane.....	.....	(309) 685-4011.....	.....Physical Chem.
<u>Southern Region</u>			
Dr. Willis B. Wheeler.....	.....	(904) 392-1978.....	.....Biochemistry
Dr. Charles W. Meister.....	.....	(904) 392-1978.....	.....Plant Pathology
Dr. Steve F. Sundlof.....	.....	(904) 392-1841.....	.....Veterinary Toxicology
Dr. Promode Bardalaye.....	.....	(904) 392-1978.....	.....Res. Chemistry
Dr. Michael Williams.....	.....	(205) 826-4850.....	.....Entomology
Dr. Terry L. Lavy.....	.....	(501) 575-3955.....	.....Weed Science
Dr. Sam S. Fluker.....	.....	(904) 392-4721.....	.....Entomology
Dr. Emmett D. Harris.....	.....	(404) 542-7000.....	.....Entomology
Dr. Chris M. Christensen.....	.....	(606) 258-5955.....	.....Entomology
Dr. John S. Rouseel.....	.....	(504) 388-6074.....	.....Entomology
Dr. William W. Neel.....	.....	(601) 325-3243.....	.....Entomology
Dr. T. Jack Sheets.....	.....	(919) 737-3391.....	.....Weed Science
Dr. O. Norman Nesheim.....	.....	(405) 624-5531.....	.....Entomology/Plt. Pathology
Mr. Rafael Montalvo-Zapata.....	.....	(809) 767-9705.....	.....Chemistry
Dr. William DuBoise.....	.....	(803) 656-3111.....	.....Entomology
Miss Nancy Taylor.....	.....	(615) 974-7138.....	.....Plant Pathology
Dr. Rodney L. Holloway.....	.....	(409) 845-7028.....	.....Entomology
Dr. Michael J. Weaver.....	.....	(703) 961-6543.....	.....Plant Pathology
Mr. Walter I. Knusenberger.....	.....	(809) 778-0246.....	.....Pest Management
Dr. James M. Schalk.....	.....	(803) 556-2210.....	.....Entomology
Dr. Alva W. Johnson.....	.....	(912) 386-3372.....	.....Nematology
Dr. Norman Glaze.....	.....	(912) 386-3355.....	.....Plant Physiology
Dr. Wilmer Rohde.....	.....	(912) 386-3514.....	.....Residue Chemistry
<u>Western Region</u>			
Dr. James Seiber.....	.....	(916) 752-1142.....	.....Chemistry
Mr. Harold G. Alford.....	.....	(916) 752-7010.....	.....Entomology
Dr. Arthur L. Craigmill.....	.....	(916) 752-1142.....	.....Environ. Veterinary Toxicology
Dr. Thomas Archer.....	.....	(916) 752-1142.....	.....Chemistry
Dr. Jeff Conn.....	.....	(907) 479-7614.....	.....Weed Science
Dr. George W. Ware.....	.....	(602) 626-1151.....	.....Entomology & Pest Residues
Mr. Harold G. Alford.....	.....	(916) 752-7010.....	.....(See above)
Dr. Bert L. Bohmont.....	.....	(303) 491-5237.....	.....Ag. Chemistry & Weed Science
Dr. Claron Bjork.....	.....	(671) 734-2575.....	.....Entomology
Dr. John W. Hylin.....	.....	(808) 948-8352.....	.....Biochemistry
Dr. Gene P. Carpenter.....	.....	(208) 885-6595.....	.....Entomology
Dr. Michael J. Jackson.....	.....	(406) 994-3517.....	.....Agronomy
Dr. Ellis Huddleston.....	.....	(505) 646-3225.....	.....Entomology
Dr. Harry G. Smith.....	.....	(702) 784-6911.....	.....Ent. & Parasitology
Dr. James M. Witt.....	.....	(503) 754-2564.....	.....Ag. Chem. & Toxicology
Mr. Howard Deer.....	.....	(801) 750-1598.....	.....Pest. & Toxic Substances
Mr. Richard C. Maxwell.....	.....	(509) 335-2995.....	.....Entomology
Mr. Everett Spackman.....	.....	(307) 766-4261.....	.....Entomology
Dr. Alex C. Oge, Jr.....	.....	(509) 786-3454.....	.....Weed Science (Agronomy & Hort.)
Dr. Eric Halfhill.....	.....	(509) 575-5982.....	.....Entomology
Dr. Leslie M. McDonough.....	.....	(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:

At the beginning of 1983 there were 2176 food-use clearance requests on file at HQ. By the end of the year an additional 388 had been added giving a total of 2564 requests on file. There were 220 active food-use research projects in 1983; residue samples went to 14 state and USDA-ARS cooperating laboratories and to eight chemical company laboratories.

The following pesticides/commodities were researched in 1983:

#### (1) BIORATIONALS:

Codling moth granulosus virus(CMGV)/apple, pear, walnut.

#### (2) FUNGICIDES AND NEMATICIDES:

Benomyl/cauliflower, eggplant, mushroom, parsley, pepper, spinach, watercress - Captafol/asparagus, eggplant - Captan/collard, endive, kale - Carboxin/tomato - Chlorothalonil/asparagus, bok choy, caneberry, Chinese cabbage, hops, mango, safflower - DCNA/watercress - Ethoprop/leafy vegetables - Etridiazole/cucurbits, pepper - Etridiazole + PCNB/pigeon pea, tomato - Fenamiphos/bean, beet, Chinese cabbage, eggplant, pea, pepper, strawberry - Iprodione/broccoli, cabbage, cauliflower, cucumber, melon, mustard greens - Mancozeb/radish, sunflower - Methyl Bromide/asparagus, onion - Nitrapyrin/Brussels sprouts, cabbage, cauliflower, celery, strawberry - Oxamyl/cabbage, strawberry - PCNB/carrot, radish, sugar beet, turnip - Streptomycin/cherry - Thiabendazole/clover, lettuce, tanager - Triforine/okra - Vinclozolin/sunflower.

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

Acifluorfen/strawberries, tomatoes - Alachlor/radish - Asulam/blueberry - Bentazon/asparagus, basil, marjoram, onion, oregano, sage, savory, tarragon, thyme - DCPA/bok choy - Diclofop-methyl/canarygrass - Diuron/filbert, rhubarb - Endothall/beet, broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, kohlrabi, swiss chard - Ethepon/macadamia nuts - Fluchloralin/collard, kale, mustard greens, turnip greens - Glyphosate/carrot, cranberry, eggplant, fig, mint, onion, pepper, pigeon pea, raspberry, rhubarb, tanager, tomato, yam - Metolachlor/asparagus, celery, sweet sorghum, tomato - Metribuzin/bermuda grass, carrot - Napropamide/garlic, rhubarb, spearmint, tarragon, thyme - Oryzalin/asparagus, onion - Oxyfluorfen/asparagus, cabbage, garlic, horseradish - Paraquat/bean, Chinese cabbage, lentil, tanager - Prometryn/parsley - Pronamide/beet, broccoli, Brussels sprouts, cabbage, cauliflower, collards, garlic, kale, kohlrabi, parsley, pasture grass, rhubarb, swiss chard - Propachlor/broccoli, cabbage, cauliflower, collards, kale, rutabaga turnip - Sethoxydim/asparagus, blueberry, broccoli, cabbage, mint, strawberry, watermelon - Simazine/bean (faba), cherry, peach, plum, prune, rhubarb - Terbacil/sainfoin - Thiobencarb/celery - 2,4-D/bean - 2,4-D(LVE)/soybean - 2,4-DB/vetch.

#### (4) INSECTICIDES AND MITICIDES:

Acephate/pineapple - Azinphosmethyl/trefoil - Aldicarb/apple, chestnut - Carbofuran/artichoke, blueberry, chestnut, hops, pecan, raspberry - Cyhexatin/raspberry - Diazinon/ginseng, rutabaga - Dichlorvos/almond - Endosulfan/acerola - Fensulfothion/spinach - Fenvalerate/blackberry, cranberry, onion, pigeon pea, radish, raspberry, strawberry - Methamidophos/collard, dill, endive, leek, parsley, swiss chard, turnip greens - Methidathion/alfalfa sprouts - Methiocarb/chestnut, raspberry, sorghum - Methomyl/Chinese broccoli, cranberry, dill, endive, leek - Mevinphos/endive - Oxydemeton methyl/collard, mustard greens - Permethrin/asparagus, Chinese cabbage, greens, pepper - Pyrethrin/soybean - Temephos/grass.

#### (5) RODENTICIDES:

Aluminum phosphide/beebees - Chlorophacinone/bluegrass, wheat - Zinc phosphide/alfalfa, artichoke, bean (lima), bean (snap), beet, pea, spinach, sugar beet, tomato.

(B) IR-4/EPA SPONSORED FOOD USE WORKSHOPS

The IR-4 Food-Use Workshop II, made possible by an EPA grant to Rutgers University, was held in St. Louis, MO on 19-21 SEP 83. Ninety-five state, federal and industry scientists reviewed more than 650 insecticide, fungicide and herbicide minor use clearance projects to determine the most urgently needed uses. Of the 650 proposed projects, 474 requests were determined to be high priority needs; 144 requests were determined to be medium or low priority needs; and 44 requests were de-prioritized. The information on priority needs developed at the workshop was utilized at the fall IR-4 regional meetings to establish tentative commitments for the 1984 research program.

The value of these workshops is evidenced by the fact that IR-4 completed 80% of the 195 and 220 projects scheduled in 1982 and 1983, respectively. This compares to a completion rate of 20% for an average 158 projects scheduled for the five year period 1977-1980. Moreover, 2/3 of the 442 high priority projects established at the first workshop which was held in SEP 81 will be complete with submission of current outstanding data.

(C) DEVELOPMENT AND REGULATORY SUCCESSES:

IR-4 HQ prepared a total of 77 pesticide tolerance petitions in the calendar year 1983. Fifty-one (51) tolerance petitions were written and submitted to EPA and 26 petitions are still under review by the manufacturers (eventual label registrants) prior to EPA submission. The total number of petitions submitted in 1983 represents a 30% increase over 1982. Additionally, 13 major 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 the year, 99 tolerances or exemptions were established by EPA based on IR-4 petition submissions, a 20% increase over 1982. These are listed below.

## (1) FUNGICIDES AND NEMATOCIDES:

Benomyl/currant, papaya - Dodine/spinach - Ethoprop/okra - Fenamiphos/okra - Oxamyl/peppermint and spearmint hay - Terrazole®/tomato.

## (2) HERBICIDES, DESICCANTS AND PLANT GROWTH REGULATORS:

Ametryn/cassava root, tanier, yam - 2,4-D/stone fruits (including apricot, cherry, peach, prune, etc.), nuts (including almond, filbert, macadamia, pecan, walnut, etc.), pistachio - 2,4-DB/mint hay - Dicamba/proso millet grain and straw - Dinoseb/lentil - Ethephon/macadamia nut - Maleic hydrazide/cranberry - NAA/sweet cherry - Napropamide/rhubarb, rosemary, marjoram, summer savory, winter savory - Paraquat/asparagus, broccoli, dry onion, green onion, kiwifruit, mint hay (fresh & spent), pistachio, strawberry, vegetables preplant (including lima bean, snap bean, bean forage, bean hay, cabbage, carrot, cauliflower, Chinese cabbage, collard, cucurbits (watermelon, cantaloupe/muskmelon, pumpkin, squash, cucumber), eggplant, succulent pea, pea forage, pea hay, turnip top, turnip root) - Sodium chlorate/flaxseed and straw.

## (3) INSECTICIDES:

Acephate/cranberry - Carbaryl/prickly pear fruit and pad - Chlorpyrifos/cranberry, fig - Diazinon/Chinese cabbage - Diflubenzuron/mushroom - Disulfoton/asparagus - Endosulfan/raspberry - Fenvalerate/artichoke, eggplant, pepper - Magnesium phosphide/avocado, banana, Chinese cabbage, citrus citron, eggplant, endive (escarole), grapefruit, kumquat, lemon, lettuce, lime, mango, mushroom, orange, papaya, pepper, persimmon, pimento, plantain, salsify top, tangelo, tangerine, tomato - Methamidophos/celery - Methyl bromide/blueberries (post), strawberry (post) - Permethrin/horseradish, pear.

## (4) RODENTICIDES:

Aluminum phosphide/all crops - Magnesium phosphide/all crops.

## (5) CROP GROUPINGS:

On 29 JUN 83, EPA amended the crop grouping regulations (40 CFR 180.34f) to alleviate some requirements for residue data. This was the first major change in about 15 years. These regulations were requested by the IR-4 National Director in a letter to EPA in 1978. Additionally, the IR-4 publication, Food and Feed Crops of the USA by Magness, Markle and Compton was valuable in the development of the new crop groupings in that it was a source document for crop systematics, common names, plant groupings and likely exposure of edible plant parts to pesticides. Several tolerance petitions utilizing the new crop groupings have been written and are being reviewed by EPA or the manufacturers. These are: Chlorpyrifos/Brassica leafy vegetables - Glyphosate/cucurbits, fruiting vegetables, small fruits - Endosulfan/Brassica leafy vegetables - Diazinon/Brassica leafy vegetables - Methyl parathion/Brassica leafy vegetables - Dimethoate/Brassica leafy vegetables.

Additionally, four crop grouping petitions are pending at EPA. These are: (1) to define caneberries by listing species and their varieties to be included in the group; (2) to include avocados, mangos, and papayas in the stone fruit group; (3) to include several Oriental leafy vegetables and cucurbits in the existing groups; and (4) to include pumpkins in the squash group.

IR-4 submitted these general category crop grouping petitions to EPA in order to expedite the pesticide clearance of many minor crop uses. The incorporation of these concepts into the Code of Federal Regulations will permit great savings in time, manpower and money for both IR-4 and EPA and better serve the needs of the US farmers as well as the US consumers.

(D) ORNAMENTAL RESEARCH AND DEVELOPMENT:

During the 6½ years the IR-4 Ornamentals Program has been in existence (APR 77 - NOV 83), IR-4 has undertaken 8,502 ornamental research trials. During the year, 1223 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 24 insecticides, 22 fungicides and 21 herbicides. During 1983, IR-4 supplied data in support of 153 ornamental pesticide registrations, bringing the total number of label registrations on ornamentals to 1654 or an average of 21 clearances per month. Pesticides for which new or expanded labeling on ornamental crops were obtained during 1983 include: Dual®, Dual® + Princep®, Furloe®, Banrot®, Bayleton®, Exotherm Termil®, Milban®, Subdue® and Truban®.

## BLACK VINE WEEVIL COOPERATIVE PROJECT

The black vine weevil, Otiorhynchus sulcatus, has been a pest of major concern to the woody ornamentals industry since cancellation of heptachlor and chlordane registrations in March 1978. In that there were no efficacious insecticides registered to control the larval forms of the black vine weevil in compliance with state nursery certification regulations, a special research program was administered by IR-4 HQ to develop necessary efficacy and phytotoxicity data for registration of one or more insecticides for control of the black vine weevil 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. Research was initiated in the summer of 1981 with preliminary efficacy and phytotoxicity evaluations made in the fall of 1981. Final control and phytotoxicity evaluations were made in the summer and fall of 1982.



Our data show that carbofuran and bendiocarb were most effective in reducing black vine weevil infestations in containerized woody nursery stock. Oxamyl also was effective but results were variable. No significant phytotoxic symptoms were evident on 20 woody species at proposed use rates. Carbofuran is now registered for this use in certain states under the state labeling concept.

Although results were less definitive in field grown tests because of variability in larval populations, bendiocarb appeared to be the most effective treatment with carbofuran and oxamyl somewhat less effective. Again, there were no significant phytotoxic symptoms on woody species included in the tests.

(E) BIORATIONAL RESEARCH AND DEVELOPMENT:

(1) On-going Research:

IR-4 continues to support the biorational pest control agent concept. The codling moth granulosis virus (CMGV) field research conducted by the University of California's Professor L.A. Falcon on apples, pears and walnuts has been funded for two years. The field data to date indicate that CMGV is competitive with conventional insecticides. Field research was also conducted on the entomopathogenic fungi Beauveria bassiana and Metarhizium anisopliae, for the control of the black vine weevil in ornamental nurseries.

(2) IR-4/EPA Sponsored Biorationals Workshop:

An IR-4 Biorationals Workshop, which was made possible by an EPA grant, was held in St. Louis, MO 1-3 MAR 83. Fifty-one delegates representing state agricultural experiment stations, USDA, EPA and industry attended. The objective of this workshop was to develop guidelines for the registration of biorational materials for use in pest control. The workshop working groups were asked to review and revise the IR-4 interim guidelines for selecting, prioritizing and reviewing biorational projects and to suggest general protocol guidelines in the respective disciplines.

The objectives of the workshop were achieved and each working group addressed matters appropriate to their discipline. The report of the working groups has been utilized in the development of guidelines relative to Procedures for Handling Biorational Projects in IR-4.

(F) ANIMAL DRUG RESEARCH AND DEVELOPMENT:

On 15 SEP 82, the State Agricultural Experiment Stations' Committee of Nine approved the addition of the animal drug clearance program to the IR-4 Project. Federal and State scientists, the drug industry, and the Food and Drug Administration (FDA) are working with IR-4 to determine minor use needs, develop research protocols, and generate data to meet the safety requirements.

The Bureau of Veterinary Medicine (BVM)-FDA supported the program with funding (\$35,000) for the 1st Animal Drug Workshop which was held in Rockville, MD on 14-16 MAR 83. The workshop evaluated current needs, determined critical needs not currently in the system, prioritized these needs and provided needed input for protocol development. Additionally, BVM issued their Minor Use/Minor Species Policy in January 1983 which provided IR-4 with more relaxed requirements. This policy also clarified the terms major and minor species. Cattle, swine, chickens, turkeys and horses are considered major species by FDA. IR-4 is involved with major species for uses on diseases that occur infrequently or in limited geographical areas in addition to all minor species. Additionally, FDA-BVM has assigned Dr. E.E. Viera, a staff veterinarian, to IR-4 HQ as a liaison between IR-4 National HQ and BVM.

The IR-4 Regional Animal Drug Coordinators and HQ scientists met at Cornell University in October 1983 to prioritize the research for 1984. This national drug research planning meeting provided the mechanism to review the candidate research projects and to establish the 1984 IR-4 Drug Research Program.

IR-4's first two clearance submissions to FDA-BVM, (ADR 5) thiabendazole/pheasants for gapeworm control and (ADR 2) amprolium/pheasants for coccidiosis control, are close to approval. Data were developed at Penn State University in cooperation with FDA and Merck & Company, Inc.

Additional research projects and cooperators 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	Aeromonas hydrophila	Sulfadimothoxine plus Armetoprin	Mississippi State University & Hoffmann-LaRoche Inc.
5	Pheasants	Gapeworms	Thiabendazole	Penn State University & Merck & Company, Inc.
6	Fish	Viral diseases	Butylated Hydroxy Toluene	University of California
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. antibacterfer</u>	Lincomycin	Cornell University
10	Ducks	Erysipelas	Penicillin	Cornell University
11	Reindeer	Warble flies	Ivermectin	University of Alaska & Merck & Company, Inc.
12	Sheep & Goats	Muellerins Capillaris & Trichuris	Fenbendazole	Purdue University
13	Cattle	Acute Bovine Pulmonary Emphysema & Edema	Monensin	Washington State University & Eli Lilly Company
14	Feedlot-lambs	Coccidiosis	Decoquate	Rhone-Poulenc
15	Lobsters	Gaffkima	Oxvtetracycline	University of Maine Pfizer Company

(G) COORDINATION WITH FEDERAL AGENCIES:

Agricultural Research Service (ARS) scientists cooperated with SAES scientists on 66 food and 512 ornamental specialty use requests. This team work approach is providing the farmers, ranchers, growers, nurserymen and homeowners with the technologies that will result in increased production efficiency. Eighty-two percent (82%) of the states participated in the 1983 research projects.

4. USEFULNESS OF FINDINGS:

Without the field work conducted by the SAES and 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 1983 will provide protection for commodities valued at more than 15 billion dollars. IR-4 continues to be the clearinghouse and communication center for the clearance of safe chemicals, including biorationals which are the backbone of Integrated Pest Management (IPM) systems.

5. WORK PLANNED FOR NEXT YEAR:

IR-4 will continue to develop data required by EPA and FDA for the establishment of minor use tolerances, including IPM materials, as necessary, appropriate and as funds permit. Additionally, a similar effort will be expanded in developing animal drug uses and nonfood uses, i.e. ornamental registration data packages. In that funding levels are not adequate to address more than 1/4 of the researchable 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 program.

In order to gain maximum benefit from a limited funding base, IR-4 works closely with EPA, FDA and the pesticide and animal drug industry. Requests are screened carefully so that projects involving chemicals having 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 (Quarterly)
- c) SEEER (Quarterly)
- d) Registration of Biorationals, In Proceedings of the National Interdisciplinary Biological Control Conference, JUL 83
- e) IR-4 Reference Manual, 1 JAN 83
- f) Pesticide Registrations For "Minor" Uses. In Phytopathology. 73:800, 267(Abstr.)

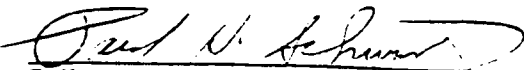
December 31, 1983

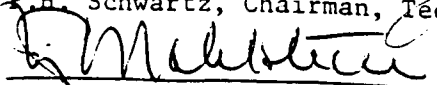
Approved:

2-8-84  
Date

1-18-84  
Date

  
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