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Minor Crop Pest Management, IR-4 - A National Agricultural Program to Clear Pest Control Agents for Minor Uses

IR-4 Newsletter

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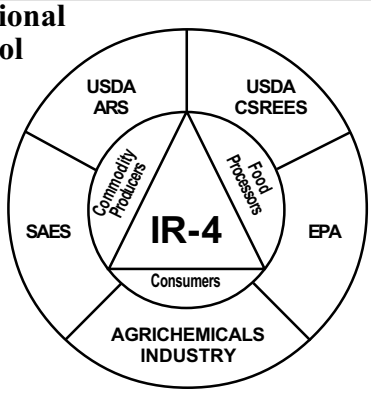

IN THIS ISSUE

*For April -June 1999 (2nd Quarter)

Attachment: PCR Form

IR-4 Highlights (Partner Outreach)

Editor's Note: IR-4 Highlights by the Executive Director is an outreach feature of the Newsletter, focused primarily on articles highlighted in this issue.

By the time this issue reaches you, I will have begun my second year as a member of the IR-4 Team. I don't know where the time has gone, but things certainly have been busy. The first five months on the job involved learning about the key issues, understanding the strategy set down by the Project Management Committee in 1995, determining how the Food Quality Protection Act (FQPA) was impacting minor crop registrations and initiating opportunities to partner with our many constituents. The last seven months have involved numerous initiatives began by the Management Committee that were ready to move forward in a proactive manner.

Our partnership with the EPA continues to grow and develop with the strong encouragement and support of Jim Jones and his Registration Division Team and Margaret Stasikowski and her Health Effects Division Team. We recently concluded on June 7th our third EPA/IR-4 Technical Working Group Meeting held at our headquarters in New Jersey, followed on June 8th by a tour of New Jersey minor crop agriculture which included two grower stops

Continued on Page 2

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IR-4 Highlights (Partner Outreach)

Continued from Page 1

(cranberries, blueberries, vegetables, and medicinal crops) and two Rutgers University/Cook College Experiment Centers for residue studies (see article by Ken Samoil on page 24 for more details). Some of the highlights from our Working Group Meeting were: 1) Three-year Petition Submission Schedule. The Agency has taken our three year workplan and selected petitions for review in FY 2000. They will review over 100 petitions on 40 active ingredients which could result in over 300 clearances. Please note that our pre-FQPA 13 year average from 1984 to 1996 was 100 permanent clearances per year and we received 59 clearances in 1998. With the current pace in 1999, the Agency has already granted over 100 clearances and is on track to grant nearly 200 clearances by the end of the year. Quite a record accomplishment! 2) Residue Petition Summary. This initiative is fondly referred to as the "Herndon Tables", after Jeff Herndon on Margaret's team who initiated the idea and facilitated its implementation. We are currently submitting our petitions with this summary resulting in a one to two month saving in review time. 3) Blanket Tolerances (Super Crop Groups) for Select Chemicals. We documented over $550,000 in direct savings to the IR-4 Program for the Agency's approval of Keith Dorschner's proposal for spinosad. Since that time, the EPA has approved Dave Thompson's proposal for azoxystrobin which has resulted in a savings of over $490,000. George Markle, Michael Braverman and Willis Wheeler are working on our next initiative with glyphosate. 4) Reduced Risk Classifications for Minor Crops. Thanks to the efforts of Rick Keigwin on Jim Jones' team, we have a streamlined proposal format by which we can propose to the EPA a Reduced Risk classification on minor crops for chemicals already given that status by the Agency on major crops. Keith Dorschner has initiated and EPA has approved our first proposal on tebufenozide for caneberries, blueberry, cranberry, canola, mint and turnip. 5) Temporary Staff Assignment. The opportunity to have an IR-4 staff member in Marcia Mulkey's office (Director of OPP) is closer to reality. I met with Marcia and Al Jennings, Director of the USDA's Office of Pest Management Policy (OPMP), in early July to finalize the details.

Another partnership initiative started with the EPA this quarter has been with Janet Andersen's Biopesticides and Pollution Prevention Division (BPPD) which is responsible for handling our biopesticide petitions among their many duties. We are seeking input from Janet's BPPD Team on how to more effectively handle our petition submissions and target our funding to high priority needs.

We continue to work to strengthen our partnership opportunities with the Crop Protection Companies. Jerry Baron and I have visited most of the companies with a special presentation on the "new IR-4" highlighting our new 30 month project completion schedule and desire to partner with them at the earliest stage possible on their new chemistries to target minor crop registration strategies. The response from our industry partners has been extremely gratifying. Some examples: Dow AgroSciences told us that without IR-4 they would not be developing quinoxyfen, a promising new fungicide with a unique mode-of-action, for the U.S. market. They have involved us directly in their development planning process as a partner. BASF has presented their High Value Crops Strategy to us and invited our involvement in partnership with them to define minor crop market opportunities for their newest pipeline products. Rohm & Haas has involved us in their Molt Accelerating Compound (MAC) strategy to transition from tebufenozide to methoxyfenozide in targeted minor crops. There are other examples but these serve to spotlight the high level of support we are receiving from our crop protection industry partners. We will continue to strive to reach this level of partnership with all of the companies.

The OPMP Team, especially Al Jennings and Therese Murtaugh, continue to involve us in ways we can help in the FQPA transition process the next few years as the individual chemical risk assessments are addressed from an aggregate exposure basis (i.e. food plus water plus residential) as well as a cumulative exposure basis (across chemicals with a common mode-of-action). We hope Jerry Baron's New Products/Transition Pesticide List (Pipeline Database) will serve as a valuable resource for OPMP's Pesticide Pipeline Database as part of this process. The opportunity for IR-4 to have a staff position on Marcia's OPP Team could also be a positive and insure that we will play an important role during the challenging FQPA transition period. We feel confident that our focus on Reduced Risk products the past four years will start to pay big dividends by providing the EPA, the USDA, and our minor crop growers with new products for integration into their pest management programs.

Please read Jack Norton's update on our Methyl Bromide Alternatives Program found on page 23. Jack has done a great job the past few months to broaden this program by obtaining more diverse inputs through a Scientific Advisory Board. The program continues to be refined and Jack is close to finalizing the fall/winter California/Florida strawberry program. As word of our program has spread, we are being contacted by companies (i.e., ISK Biosciences with fosthiazate for tomatoes) for inclusion of additional products in our program. It is our longer term plan to expand the program past strawberries and tomatoes to other crops including peppers, cole crops, vine crops and ornamentals.

Continued on Page 3

IR-4 Highlights (Partner Outreach)

Continued from Page 2

Jack is also a member of a newly formed USDA Methyl Iodide/Propargyl Bromide Working Group. The group's purpose is to investigate the feasibility of registering these chemicals as alternatives to methyl bromide.

In other program areas, please read Bill Biehn's article on page 15 about our 1999 Biopesticide Program which includes both funding for more exploratory products as well as commercial products in the pipeline. Jerry Baron also highlights on page 20 a new program this year to support alternatives to products on minor crops that are considered vulnerable as a result of FQPA (i.e., OP's, carbamates and B2 carcinogens) and methyl bromide replacements for weed control.

One of the partnerships we look forward to building upon is with the Commodity Liaison Committee (CLC). We welcome Rocky Lundy as the new Chairperson and thank outgoing Chairperson, Jere Downing, for his leadership the last five years. Welcome to Bill Spencer of Spencer Brothers, Yuma, AZ as our newest CLC member! As you know, the CLC is the link between IR-4 and our customer farmers who grow minor food crops and ornamentals. The primary responsibility of the CLC is to provide guidance and advice to IR-4 on ways in which the program can best serve the needs of minor crop producers. The CLC serves an important role in communicating the mission of IR-4 to the agricultural community and provides visibility at the grower level. The CLC also supports federal funding initiatives for the program and helps to secure extramural funding in order to maintain a viable food and ornamentals research program. The current CLC member list with their organizational affiliations and addresses is found on page 33. Also, see article by Rocky Lundy on page 18.

Also, a warm welcome to our new staff member, Laurie O'Reilly/QA Specialist. Laurie joins us from Rutgers University and will allow us to rely less on contract QA support in the years ahead.

In summary, the spring season has really blossomed for IR-4 and the summer months promise to provide the opportunities for us to continue to grow and expand our partnerships based on our dedication to bring the best crop protection solutions (both chemical and biopesticide) to our minor crop growers. Thanks to all of you who have made my first year as part of the IR-4 Team such an enjoyable and exciting year with your support.

Article by Bob Holm

IR-4 Headquarters - Presentations

R. Holm - "New Perspectives for the Future of the IR-4 Program" presented to Southern Region Experiment Station Directors meeting on 4/11/99, Eden Biosciences on 4/13/99, the Commodity Liaison Committee on 4/15/99, Dow AgroSciences on 4/21/99, the Michigan Minor Crop Meeting on 4/22/99, DuPont Agricultural Products on 4/28/99, Rohm and Haas on 4/29/99, Zeneca Agricultural Products on 5/7/99, American Nursery and Landscape Association, Horticultural Research Foundation and Society of American Florists on 5/27/99, Bionova/DNAP on 6/1/99, AgraQuest on 6/2/99, Seminis Vegetable Seeds on 6/2/99, the Western Region IR-4 Team on 6/2/99, Tomen Agro on 6/3/99 and Valent U.S.A. Corporation on 6/3/99.

Regional News: Southern

Texas and Florida have been completing priority IR-4 field trials and generating new pesticide clearance requests in recent months. The Texas Minor Use Advisory Committee met at College Station, May 6-7, and a week later at Weslaco to focus on reduced risk pesticide replacements for products that may be lost to FQPA on ten important minor crops. The IR-4 Field Research Center at Weslaco; Lori Gregg, FRD, has already completed most of her 1999 field trials -- eleven books arrived today.

Florida Field Research Centers (IR-4) have established most of their 1999 trials, residue samples from more than 40% have been shipped to labs. In the Florida Vegetarian Newsletter, Bill Stall has called for New IR-4 Pesticide Clearance Requests to meet Florida minor use needs. They are starting to "dribble in" on email, etc., screened my me and sent to IR-4 HQ. Focus is on reduced risk pesticides to replace FQPA vulnerable products.

Article by Charlie Meister

Minor Crop Pest Management, Interregional Research Project No. 4 (IR-4)
National Agricultural Program
To Clear Pest Control Agents for Minor Uses

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J. Holmdal

***Committee Chair**

IR-4 Regional/Headquarters and other National/International Contacts - Directories

To provide appropriate public accessibility to IR-4 State and Federal (USDA-ARS) Liaison Representatives, Regional Project Management Committee Representatives, Regional Field Coordinators, Regional Laboratory Coordinators, Regional QA Coordinators, Headquarters, etc., we are including updated listings as attachments to this Newsletter. Telephone numbers, FAX numbers, and E-mail addresses are indicated for all contacts.

CALENDAR

July 1999

7-8 IR-4 Project Management Committee Summer Meeting, Tifton, Georgia

20-22 Washington State Pest Control Tour, Seattle, Washington

25-29 Florida Entomological Society/Fourth International Caribbean Conference of Entomology, San Juan, Puerto Rico

25-30 XIVth International Plant Protection Congress, Jerusalem, Israel

August 1999

7-11 American Phytopathological Society and Canadian Phytopathological Society Joint Meeting, Montreal, Canada (see Fungicide Working Group article)

17-19 Pacific NW Minor Crops Field Symposium, Pasco, Washington

25-27 IR-4 /USDA Food Use Workshop, Denver, Colorado

29-30 National Workshop on Optimal Use of Insecticidal Nematodes in Pest Management, Rutgers University, New Brunswick, New Jersey

September 1999

12-16 National Association of County Agricultural Agents Annual Meeting, Omaha, Nebraska

20-23 Food and Forestry: Global Change and Global Challenges, Kidlington, Oxford, UK

October 1999

4-5 IR-4 Project Management Committee Fall Meeting, Washington, DC

5-6 IR-4 Symposium "Future for Minor Crop Pest Management", Washington, DC

7 IR-4 36th Annual Meeting, Washington, DC

18-21 USDA/IR-4 Ornamentals Use Workshop, Portland, Oregon

20-21 IR-4 USDA-ARS Liaison Meeting, Portland, Oregon

26-27 IR-4 National Research Planning Meeting IR-4 Headquarters, Rutgers University, North Brunswick, New Jersey

January, 2000

9-11 American Farm Bureau Meeting, Houston, Texas

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- "This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under Hatch Act and Agreement No. 98-34383-5993."
- This Newsletter does not constitute a recommendation for use. The pesticide registrant or Cooperative Extension should be consulted for specific use information.
- IR-4 thanks the many research cooperators who have provided data to support the needed registrations.
- Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift.
- Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances the compound may be sold under different trade names, which may vary as to label clearances.

The IR-4 Newsletter

The IR-4 NEWSLETTER is published quarterly for distribution to cooperators in our partner State/Federal/Industry research units, State and Federal officials, private interest groups, and private citizens. Scientists at the IR-4 National Headquarters, regional, state, and federal level, and on the IR-4 Project Management Committee contribute articles in their areas of expertise. The Newsletter design and layout are done by Cheryl Ferrazoli. This partnership publication is printed and distributed by the Cooperative State Research, Education, and Extension Service, United States Department of Agriculture, Washington, D.C. Material from the IR-4 Newsletter may be reproduced with credit to the publication. Major funding for IR-4 is provided by USDA-CSREES and USDA-ARS in cooperation with the State Agricultural Experiment Stations.

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Sincerely,

George M. Markle, Editor
Associate Director
Newsletter Team
IR-4 Project

cc: Rutgers University Library of Science and Medicine
ATTENTION: University Archivist/Gov't Doc. Dept.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Tebufenozide	CONFIRM®	Mint	7 APR 99 (Rule)	6437	Authored by K. Dorschner and K. Breuninger (Writers Inc.). Support provided by R. Melnicoe, University of California, S. Miyazaki, Michigan State University; J. Wyman, University of Wisconsin; S. Mangini, Del Monte Research Center, Walnut Creek, CA; R. Lundy, Mint Industry Research Council, Stevenson, WA; and USDA-ARS scientists R. Boydston and L. Birch (WA) and P. Schwartz (MD). Toxicology and methodology data provided by Rohm and Haas.
Tebufenozide	CONFIRM®	Caneberries (Combined with blueberry for Berries Crop Group)	7 APR 99 (Rule)	6405	Authored by K. Dorschner and K. Breuninger (Writers Inc.). Support provided by R. Melnicoe, University of California; J. DeFrancesco, Oregon State University; K. Al-Khatib and D. Sloan, Washington State University; S. Miyazaki, Michigan State University; J. Wyman, University of Wisconsin; J. Martini, Cornell University; B. Goulart, Pennsylvania State University; and S. Mangini, Del Monte Research Center, Walnut Creek, CA. Toxicology and methodology data provided by Rohm and Haas.
Tebufenozide	CONFIRM®	Blueberries	7 APR 99 (Rule)	6407	Authored by K. Dorschner and K. Breuninger (Writers Inc.). Support provided by R. Melnicoe, University of California; J. DeFrancesco, Oregon State University; S. Miyazaki and J. Wise, Michigan State University; C. Meister and T. Crocker, University of Florida; J. Martini, Cornell University; L. Rossell, Rutgers University; B. Goulart, Pennsylvania State University; K. Sorensen, North Carolina State University; S. Mangini, Del Monte Research Center, Walnut Creek, CA; D. Trinka, Michigan Blueberry Growers Association; and USDA-ARS scientists C. Tappan (OH) and P. Schwartz (MD). Toxicology and methodology data provided by Rohm and Haas.
Tebufenozide	CONFIRM®	Cranberry	7 APR 99 (Rule)	6344	Authored by K. Dorschner and K. Breuninger (Writers, Inc.). Support provided by J. Martini, Cornell University; L. Rossell, Rutgers University; S. Miyazaki, Michigan State University; J. Wyman, University of Wisconsin; A. Averill, University of Massachusetts; D. Rothwell, Pest Management Regulatory Agency, Ontario, Canada; S. Fitzpatrick, Agriculture and Agri-Food Canada, Vancouver, British Columbia; and S. Nelson, Enviro-Test Laboratories, Edmonton, Alberta, Canada. Toxicology and methodology data provided by Rohm and Haas.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Abamectin	AGRI-MEK® 0.15 EC	Avocado	7 APR 99 (Rule) [Time-Limited Tolerance (TLT) under Section 18]	7198	Study director is G. Markle. Support provided by R. Hampton, University of California; C. Meister and J. Crane, University of Florida; B. Olsen, Plant Sciences, Inc.; and S. Peirce, California Avocado Commission, Lake Elsinore, CA. Toxicology and methodology data provided by Novartis.
Imidacloprid	ADMIRE®	Cucurbits (Crop Group 9, Cucumbers, Melon and Squash)	8 APR 99 (Notice)	5179 5180 5181 A5179 A5180 A5181 5254 6500	Authored by K. Dorschner. Support provided by R. Melnicoe and J. Bailey, University of California; C. Meister and F. Johnson, University of Florida; J. Martini, Cornell University; G. Ghidiu, Rutgers University; S. Miyazaki, Michigan State University; J. Wyman, University of Wisconsin; D. Winkler, EN-CAS Analytical Labs; F. Rice, ABC labs; and USDA-ARS scientists R. Coleman (TX), B. Davis (SC), and P. Schwartz (MD). Toxicology and methodology data provided by Bayer.
Imidacloprid	ADMIRE®	Tuberous and Corm Vegetables (Crop Subgroup 1C) Dasheen (Taro) Leaves	8 APR 99 (Notice)	6605 6898 6720	Authored by K. Dorschner. Support provided by R. Melnicoe, University of California; M. Kawate, University of Hawaii; C. Meister and J. Pena, University of Florida; and K. Sorensen, North Carolina State University. Toxicology and methodology data provided by Bayer.
Imidacloprid	ADMIRE®	Upland Watercress	8 APR 99 (Notice)	6723	Authored by K. Dorschner. Support provided by R. Melnicoe, University of California; and M. Kawate, University of Hawaii. Toxicology and methodology data provided by Bayer.
Spinosad	SPINTOR® SUCCESS®	Tuberous and Corm Vegetables (Crop Subgroup 1C)	8 APR 99 (Notice) 26 MAY 99 (Rule)	6653	Authored by K. Dorschner and K. Breuninger (Writers Inc.). Support provided by R. Melnicoe, University of California; W. Meeks, University of Idaho; R. McReynolds, Oregon State University; S. Miyazaki, Michigan State University; A. York, Purdue University; C. Hoy, Ohio State University; J. Wyman, University of Wisconsin; A. Schreiber, Washington State University; C. Meister and S. Taylor, University of Florida; J. Martini, Cornell University; L. Rossell, Rutgers University; D. Yarborough, University of Maine; and USDA-ARS scientists A. Johnson (GA), H. Toba (WA) and P. Schwartz (MD). Toxicology and methodology provided by Dow AgroSciences.
Clopyralid	STINGER®	Canola	12 APR 99 (Rule) (TLT Extension under Section 18)	5125	Authored by D. Kunkel. Support provided by R. Melnicoe, University of California; C. Thomson and G. Moller, University of Idaho; S. Miyazaki, Michigan State University; R. Zollinger, North Dakota State University; S. Clay, South Dakota State University; C. Meister, University of Florida; F. Easton, University of Georgia; M. Gerngross, Texas A&M University; and USDA-ARS scientists L. Wax (IL), L. Birch and R. Boydston (WA), and P. Schwartz (MD). Toxicology and methodology data provided by Dow AgroSciences.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Dimethomorph	ACROBAT®	Squash Cantaloupe Watermelon Cucumber	14 APR 99 (Rule) (TLT Extension under Section 18)	6751 6752 6753 6754	Study Director is J. Corley. Support provided by C. Meister and W. Stall, University of Florida; D. Gay and A. Csinas, University of Georgia; L. Gregg, Texas A&M University; R. Hampton, C. Mourer, C. Bell and T. Prather, University of California; S. Miyazaki and B. Zandstra, Michigan State University; E. Lurvey, Cornell University; S. Johnston and L. Rossell, Rutgers University; W. Mitchum, North Carolina State University; and USDA-ARS scientists A. Johnson (GA), C. Tappan (OH), A. Simmons (SC) and P. Schwartz (MD). Toxicology and methodology data provided by American Cyanamid.
Cyprodinil plus Fludioxonil	SWITCH®	Strawberry	14 APR 99/21 APR 99 (Rule) (TLT under Section 18)	6790	Authored by D. Thompson. Support provided by D. Gubler and A. Paulus, University of California; W. Cline, North Carolina State University; W. Miller, Clemson University; H. Kaufman, University of Tennessee; J. DeFrancesco, Oregon State University; W. Copes, University of Georgia. Toxicology and methodology data provided by Novartis.
Oxyfluorfen	GOAL®	Strawberry	14 APR 99 (Rule) (TLT Extension under Section 18)	3443	Authored by D. Kunkel. Support provided by J. Martini, Cornell University; J. Ahrens, Connecticut Agricultural Experiment Station; R. Bonnano, University of Massachusetts; R. Melnicoe, University of California; B. Braunworth, Oregon State University; K. Al-Khatib, Washington State University; N. Yarranton, Biodevelopment Labs, Cambridge, MA; and USDA-ARS scientists R. Boydston (WA), L. Wax (IL) and P. Schwartz (MD). Toxicology and methodology data provided by Rohm & Haas.
Cyromazine	TRIGARD®	Lima Bean	14 APR 99 (Rule) (TLT Extension under Section 18)	3908	Authored by K. Dorschner. Support provided by R. Melnicoe and B. Bailey, University of California; C. Meister and F. Johnson, University of Florida; R. Chalfant, University of Georgia; J. Wyman, University of Wisconsin, J. Rabin, Rutgers University; R. Perez, Adpen Laboratories, Inc., Jacksonville, FL; J. Munson, California Dry Bean Advisory Board, Dinuba, CA and USDA-ARS scientists H. Toba (WA); R. Wauchope (GA) and P. Schwartz (MD). Toxicology and methodology data provided by Novartis.
Bifenthrin	CAPTURE®	Cucurbits	28 APR 99 (Rule) (TLT Extension under Section 18) 19 MAY 99 (Notice) 30 JUN 99 (Rule)	4150 4151 4152	Authored by W. Biehn. Support provided by C. Meister and D. Schuster, University of Florida; R. Johnson, Mt. Dora, FL; K. Sorenson, North Carolina State University; J. Jarratt, Mississippi State University; B. Cartwright, Oklahoma State University; S. Wagner and H. Guscar, Agri-Business Consultants, Okemus, MI; P. McLeod, University of Arkansas; R. Choban, Rutgers University (formerly); A. Armstrong, University of Puerto Rico; and R. Leavitt, Michigan State University. Toxicology and methodology data provided by FMC.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Myclobutanil	RALLY® NOVA®	Strawberry	6 MAY 99 (Rule) (TLT Extension under Section 18)	4015	Authored by W. Biehn. Support provided by R. Melnicoe, A. Paulus and D. Gubler, University of California; J. Pscheidt, Oregon State University; B. Goulart, Pennsylvania State University; S. Miyazaki, Michigan State University; M. Ellis, OARDC, Wooster, OH; C. Meister and F. Howard, University of Florida; R.W. Miller, Clemson University; L. Black, Louisiana State University; C. Averre, North Carolina State University; R. Curtis, California Strawberry Advisory Board; C. Mullins, University of Tennessee; and Del Monte Research Center, Walnut Creek, CA. Toxicology and methodology data provided by Rohm & Haas.
Azoxystrobin	QUADRIS®	Watercress	12 MAY 99 (Rule) (TLT Extension under Section 18)	6722	Authored by D. Thompson. Support provided by C. Meister and J. Yoh, University of Florida; R. Johnson, Agric. Consulting Inc., Mt. Dora, FL; and G. Saxena, B&W Quality Growers, Inc., Fellsmere, FL. Toxicology and methodology data provided by Zeneca.
Diphenylamine	DEECO No Scald DPA EC-283	Pears	13 MAY 99 (Rule)	6879	Authored by D. Thompson. Support provided by R. Melnicoe, University of California; R. Wight, Washington State University; W. Meeks, University of Idaho; S. Mangini, Del Monte Research Center, Walnut Creek, CA; W. Ewart, Northwest Horticultural Council; and J. Wise, Dephenylamine Task Force. Toxicology and methodology data provided by Diphenylamine Task Force and Elf Atochem.
Bifenthrin	BRIGADE®	Artichoke	19 MAY 99 (Notice) 30 JUN 99 (Rule)	5145	Authored by K. Samoil. Support provided by R. Melnicoe, University of California; M. Bari, Artichoke Research Association, Salinas, CA; and R. Leavitt, Michigan State University. Toxicology and methodology data provided by FMC.
Bifenthrin	CAPTURE®	Edible-podded Legume Vegetables (Crop Subgroup 6A) Succulent and Shelled Peas and Beans (Crop Subgroup 6B)	19 MAY 99 (Notice) 30 JUN 99 (Rule)	5237 6252	Authored by K. Samoil. Support provided by S. Miyazaki, Michigan State University; J. Wyman, University of Wisconsin; W. Hutchinson, University of Minnesota; J. Martini and C. Eckenrode, Cornell University; C. Meister and F. Johnson, University of Florida; C. Mullins, University of Tennessee; J. Linduska, University of Maryland; B. Flood, Del Monte, Rochelle, IL; S. Mangini, Del Monte Research Center, Walnut Creek, CA: W. Meeks, University of Idaho; A. York, Purdue University; and USDA-ARS scientists A. Simmons (SC), H. Toba (WA) and P. Schwartz (MD). Toxicology and methodology data, and technical writing support provided by FMC.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Bifenthrin	CAPTURE®	Eggplant	19 MAY 99 (Notice) 30 JUN 99 (Rule)	5401	Authored by K. Samoil. Support provided by C. Meister and F. Johnson, University of Florida; R. Chalfant, University of Georgia; J. Edelson, Oklahoma State University; R. Griffin, Clemson University; R. Leavitt and S. Miyazaki, Michigan State University; J. Wyman, University of Wisconsin; J. Martini, Cornell University; G. Ghidiu, Rutgers University and USDA-ARS scientists A. Simmons (SC) and P. Schwartz (MD). Toxicology and methodology data provided by FMC.
Bifenthrin	CAPTURE®	Rapeseed (Canola and Crambe)	19 MAY 99 (Notice) 30 JUN 99 (Rule)	6057	Authored by K. Samoil. Support provided by R. Melnicoe, University of California; A. Schreiber, Washington State University; J. Gray, InterMountain Canola Co., Idaho Falls, ID; S. Miyazaki and R. Leavitt, Michigan State University; M. Weiss, North Dakota State University; C. Meister, University of Florida; F. Easton, University of Georgia; D. Rourke, Enviro-Quest, Minot, MB, Canada; D. Rothwell, Pest Management Regulatory Agency, Ontario, Canada; and USDA-ARS scientists H. Toba (WA) and P. Schwartz (MD). Toxicology and methodology data provided by FMC.
Bifenthrin	CAPTURE®	Head and Stem Brassica Vegetables (Crop Subgroup 5A)	19 MAY 99 (Notice) 30 JUN 99 (Rule)	5176 5272 5273	Authored by K. Samoil. Support provided by J. Martini and A. Shelton, Cornell University; S. Miyazaki and R. Leavitt, Michigan State University; J. Wyman, University of Wisconsin; R. Melnicoe, R. Coviello and C. Mourer, University of California; R. Ratto, Ratto Bros. Inc., Modesto, CA; C. Meister and F. Johnson, University of Florida; M. Kurtz, Mississippi State University; R. Chalfant, University of Georgia; G. Ghidiu, Rutgers University; S. Mangini, Del Monte Research Center; and USDA-ARS scientists H. Toba (WA), S. Benzen (CA), L. Chandler (GA), C. Krause (OH), B. Davis (SC), R. Coleman (TX) and P. Schwartz (MD). Toxicology and methodology data provided by FMC.
Aspergillus flavus isolate AF 36	*Aspergillus flavus* isolate AF 36	Cotton (AZ only)	26 MAY 99 (Temporary Tolerance Exemption associated with EUP)	52B	Authored by W. Biehn. Support provided by P. Cotty, USDA-ARS, New Orleans, LA; Microbiological Associates Inc., Rockville, MD; L. Antilla, Arizona Cotton Research and Protection Council; C. Youngker and C. Sharp, Arizona Cotton Growers Association; and National Cotton Council.
Clomazone	COMMAND®	Watermelon	26 MAY 99 (Rule) (TLT Extension under Section 18)	3943	Authored by D. Kunkel. Support provided by C. Meister, University of Florida; H. Wilson, Virginia Polytechnic Institute and State University; J. Martini, Cornell University; M. Van Gessel, University of Delaware; and R. Leavitt, Michigan State University. Toxicology and methodology data provided by FMC.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Tebuconazole	FOLICUR® 3.6F	Garlic	26 MAY 99 (Rule) (TLT under Section 18)	7197	Study Director is D. Thompson. Support provided by R. Hampton and C. Bell, University of California; R. Wight, Washington State University; R. McReynolds, Oregon State University; S. Wingfield, Agrisan Inc., Eaton, CO; C. Meister, University of Florida; L. Gregg, Texas A&M University; E. Lurvey, Cornell University; L. Rossell, Rutgers University; E. Kurtz, American Dehydrated Onion and Garlic Association; R. Leavitt, Michigan State University; and USDA-ARS scientists S. Benzen (CA), C. Tappan (OH) and P. Schwartz (MD). Toxicology and methodology data provided by Bayer.
Terbacil	SINBAR®	Watermelon	28 MAY 99 (Rule) (TLT Extension under Section 18)	2841	Authored by E. Lurvey. Support provided by J. Martini, Cornell University; J. Criswell, Oklahoma State University; E. Beste, University of Maryland; F. Eastin, University of Georgia; R. Melnicoe and C. Bell, University of California; C. Meister and W. Stall, University of Florida; and USDA-ARS scientists D. McCommas (TX), A. Johnson (GA) and P. Schwartz (MD). Toxicology and methodology data provided by DuPont.
Gibberellic Acid (GA_3)	PRO GIBB®	All Food Commodities	11 JUN 99 (Rule)	1037	EPA-BPPD Initiative. Support provided by IR-4 petition 9E 2145 authored by G. Markle. Additional support provided by C. Coggins, University of California; and P. Lombard, Oregon State University. Toxicology and methodology data provided by Abbott.
Sethoxydim	POAST®	Asparagus	16 JUN 99 (Rule)	2202 4409	Authored by W. Biehn and D. Kunkel. Support provided by R. Talbert, University of Arkansas; C. Meister, University of Florida; J. Criswell, Oklahoma State University; M. Butler, University of Arizona; R. Melnicoe, University of California; B. Zandstra and S. Miyazaki, Michigan State University; T. Spittler, Cornell University; and USDA-ARS scientists R. Boydston (WA) and P. Schwartz (MD). Toxicology and methodology data provided by BASF.
Sethoxydim	POAST®	Carrot	16 JUN 99 (Rule)	2046	Authored by W. Biehn, J. Baron and D. Kunkel. Support provided by J. Dusky and C. Meister, University of Florida; B. Majek, Rutgers University; C. Mullins, University of Tennessee; T. Monaco, North Carolina State University; J. Martini and T. Spittler, Cornell University; and B. Zandstra and S. Miyazaki, Michigan State University. Toxicology and methodology data provided by BASF.
Sethoxydim	POAST®	Cranberry	16 JUN 99 (Rule)	2132	Authored by J. Baron and D. Kunkel. Support provided by M. Dana, University of Wisconsin; S. Miyazaki, Michigan State University; A. Shawa, Washington State University; R. Melnicoe, University of California; R. Devlin, University of Massachusetts; J. Martini, Cornell University; and C. Kusak, Ocean Spray, Inc. Toxicology and methodology data provided by BASF.

Food-Use Program Clearance Successes, 2nd Quarter, 1999

Pesticide	Trade Name	Site	*Federal Register*	PR. NO.	Cooperators/Comments
Sethoxydim	POAST®	Mint	16 JUN 99 (Rule)	2200 6540	Authored by G. Markle and D. Kunkel. Support provided by L. Wrage, South Dakota State University; S. Miyazaki, Michigan State University; and USDA-ARS scientists A. Ogg (WA) and P. Schwartz (MD). Toxicology, methodology, and residue data provided by BASF.
Sethoxydim	POAST®	Horseradish	16 JUN 99 (Rule)	2471	Authored by D. Kunkel. Support provided by S. Miyazaki, Michigan State University; H. Hopen, University of Wisconsin; D. Williams, University of Illinois; T. Walker, Illinois Department of Agriculture; Horseradish Growers of Illinois; North American Horseradish Growers Limited; C.E. Beste, University of Maryland and USDA-ARS scientists J.R. Frank (MD) and P. Schwartz (MD). Toxicology and methodology data provided by BASF.
Cyprodinil plus Fludioxonil	SWITCH®	Caneberries	30 JUN 99 (Rule) (TLT under Section 18)	6838 6839	Study Director is D. Thompson. Support provided by R. Hampton, University of California; J. DeFrancesco, Oregon State University; R. Wight, Washington State University; C. Meister and J. Yoh, University of Florida; R. Leavitt, Michigan State University; W. Mitchem, North Carolina State University; E. Lurvey, Cornell University; and W. Lord, University of New Hampshire. Toxicology and methodology data provided by Novartis.
Paraquat	GRAMO-XONE® EXTRA	Pea (Dry) Harvest-Aid	30 JUN 99 (Rule) (TLT Extension under Section 18)	3200 6471	Authored by E. Lurvey. Support provided by C. Meister, University of Florida; J. Criswell, Oklahoma State University; R. Melnicoe, University of California; D. Olson, Pro-Ag Consultants, Hayden Lake, ID; K. Volker, Zeneca, Yakima, WA; E. Roper, Zeneca, Richmond, CA; and USDA-ARS scientists A. Ogg (WA) and P. Schwartz (MD). Toxicology and methodology data provided by Zeneca.

Compiled by Bill Biehn

IR-4 Food-Use Program

Meetings with Cooperative Registrants

Drs. Holm and Baron have been on the road a lot over the past few months doing what has become commonly known as the "Bob and Jerry Show". These meetings have been with most of the IR-4 cooperative registrants and are used to promote IR-4 partnerships. They, including meetings with AgraQuest, American Cyanamid, BASF, Bayer, Bionova (DNA Plant Technology), DowAgroSciences, Dupont, FMC, Monsanto, Novartis, Rhone-Poulenc, Rohm & Haas, Seminis Vegetable Seeds, Tomen Agro, Valent, and Zeneca, have been used to drum up support from the upper levels of management and allow IR-4 to get involved early in the registration process of new compounds. These meetings have opened new doors for IR-4 in the cooperation and partnership to pursue minor use registrations for new reduced risk compounds at a very early stage of development. IR-4 intends to pursue minor crop registrations of these new chemistries at nearly the same time registrations are being developed for major crops.

These management meetings have been followed up by technical review meetings with Jerry Baron, Dan Kunkel and the Study Directors. These technical meetings help bring registrants up-to-date on IR-4's progress as well as providing an exchange of minor use needs and what new chemistries companies are developing. These meetings help prepare for the Food Use Workshop that will be held this August which initiates preparation of our research for 2000. Over the past few months, IR-4 met with American Cyanamid, BASF, Bayer, Dow, DuPont, FMC, Novartis, Rhone-Poulenc, Valent, and Zeneca. Although many of the companies have had some major financial set backs over the past year, due to low agricultural markets, many have a lot of new chemistry. Many of the companies shared information regarding new pesticides that may show promise for research in 2000. Also, many companies have shown renewed interest in working with IR-4 and on minor crops as a whole. The Food Use Workshop in August should prove to be a debut of many new pesticides that show a great deal of promise for minor crop growers. A Pesticide Clearance Request (PCR) form is attached to this Newsletter, please use it to get your needs into IR-4 for the Workshop.

Article by Dan Kunkel and
Jerry Baron

Meetings with Stakeholders: Many of the IR-4 Study Directors met with Gary Deziel of the Cranberry Institute to review on-going projects. Gary provided IR-4 with new requests and enthusiasm for many of the new uses that should be available to cranberry growers in the near future. Louis Dailly of ORAFTI visited IR-4 to review chicory projects. IR-4 has been conducting studies on many unique uses for chicory including inulin production. IR-4 has made a great deal of progress over the past few years on several chicory studies and these should be complete soon. Finally, IR-4 and EPA toured several New Jersey Research Stations and growers as part of a cooperative EPA/IR-4 technical working group meeting. Many of the Rutgers Extension agents and growers provided excellent input regarding minor crop growers needs. For more details on this tour see related article in this newsletter.

IR-4 Food Use Workshop

In the last *IR-4 Newsletter* (Vol. 30:1) IR-4 announced the dates for the 1999/2000 Food Use Workshop. This year's Workshop is scheduled for August 25 through August 27 in Denver, Colorado at the Adam's Mark Hotel. Since the last announcement, the schedule has changed slightly; the disease/nematode management and insect/rodenticide management workgroup sessions have been extended by two hours. Each workgroup session is now a full day (August 25 - disease/nematode management, August 26 - insect/rodenticide management and August 27 - weed /crop management). This will allow ample time for discussion of new pest control management solutions for minor crops. Industry will be encouraged to present information on new pest control technology. There are still plans for an informal mixer the evening of August 25.

Participants must pre-register with IR-4 HQ by August 1 to receive complete meeting materials in advance. The meeting registration fee is $50.00 in advance, and $70.00 on-site. This fee includes a daily Continental breakfast at 7:00 AM. Please make your hotel reservations directly with the Adam's Mark., their phone number is (303) 893-3333. The room rates are $80.00 single and $95.00 double. You must reserve your room before July 24 to receive this rate. Please mention you will be attending the USDA/IR-4 Workshop when making your reservations.

For further information or to register for the IR-4 Food Use Workshop please contact Cheryl Ferrazoli at 732 932-9575 extension 601 or e-mail ferrazoli@aesop.rutgers.edu

Article by Jerry Baron

IR-4 ORNAMENTALS PROGRAM

New Pesticide Registrations for Ornamentals Supported by IR-4 Data

Since the last IR-4 Newsletter, 13 new ornamental use registrations have been obtained. They are represented by the following:

- Bifenthrin - Camellia, Crape Myrtle, English Ivy, Chinese Holly, Linden
- Chlormequat - Egyptian Star Cluster (Pentas), Yellow Shrimp Plant
- Pendimethalin - White Ash, Mexican Fan Palm, Pygmy Date Palm, Serviceberry

Article by J. Ray Frank

Schedule for USDA/IR-4 Ornamentals Workshop October 18-21, 1999 - Update

Monday October 18	0700-0800	Breakfast (on-site)
	0900-1200	Entomology
	1200-1300	Lunch (on-site)
	1300-1800	Entomology (continued)
	1800-1900	Supper
	1900-2200	Entomology (continued)
Tuesday October 19	0700-0800	Breakfast (on-site)
	0900-1200	Plant Pathology
	1200-1300	Lunch (on-site)
	1300-1800	Plant Pathology (continued)
	1800-1900	Supper
	1900-2200	Plant Pathology (continued)
Wednesday October 20	0700-0800	Breakfast (on-site)
	0800-1200	Tour of Floral and Nursery Industry
	1200-1300	Lunch (on road)
	1300-1700	USDA-ARS Planning Meeting
Thursday October 21	0700-0800	Breakfast (on-site)
	0800-1200	USDA-ARS Planning Meeting
	0800-1200	Weed Science and Plant Growth Regulators
	1200-1300	Lunch (on-site)
	1300-1700	USDA-ARS Planning Meeting
	1300-1800	Weed Science and Plant Growth Regulators (Con't)
	1800-1900	Supper
	1900-2200	Weed Science and Plant Growth Regulators (Con't)

Article by J. Ray Frank

Value of the Green Industry

The Green Industry is many faceted and is composed of floral, nursery, turf and forest production. This complex industry also includes the establishment and maintenance of interior plantscapes, the commercial landscape and Christmas trees.

Continued on Page 15

Value of the Green Industry

Continued from Page 14

This industry is so complex that its value is always discussed but usually under estimated. All experts agree that the Green Industry is growing exponentially.

Nursery and Greenhouse Crops

In 1996 these crops ranked 7th in total grower cash receipts among all farm commodities in the nation according to the USDA Economic Research Service. These important crops rank among the top five commodities in 24 states and among the top 10 in 40 states.

Grower cash receipts of nursery and greenhouse crops have increased steadily over the last two decades. In 1996 they were estimated by USDA to be $10.9 billion dollars which represents nearly 11% of the total cash receipts for all US farm crops.

USDA estimates that retail consumer expenditures for nursery and greenhouse products in 1998 was $49.7 billion.

Professional Landscape, Lawn Care, and Tree Care Services

More than 21 million households spend $16.8 billion on professional landscape, lawn care and tree care services in 1998 according to a 1999 Gallup Survey. This increase of $2.2 billion over 1997 is very noteworthy when we also realize that in 1988 this total was $7.4 billion.

Municipal Street Trees

Value for the estimated 57,000,000 street trees was over $15 billion dollars in 1986 according to Dreistadt and Damisten at University of California, Davis. They studied 400 tulip poplars (*Liriodendron tulipifera*) in Berkeley, California which required an annual maintenance cost of $83.40 per tree. Assuming tulip poplars are average in their maintenance cost each year, the potential in value of municipal tree maintenance is staggering.

Golf Course Maintenance

According to the National Golf Foundation, the number of US golf courses in 1993 was 14,648. This number has grown in 1998 to 16,365 courses. Annual pest control maintenance alone for these golf courses is $270 million. Total maintenance budget is estimated at $1.2 billion dollars by the Golf Course Superintendents Association.

Turf Sales

US turf annual sales in 1992, which include 1,614 turf farms on 218,161 acres, was $471,640. With the major increases in our landscape services, this number has probably changed drastically. This information was provided by Turfgrass Producers International in Rolling Meadows, Illinois.

Forest Seedling Production

Forest seedlings are primarily produced in the US at state nurseries. Over 40 states produce the seedlings in this way. They are valued at $75 to $100/acre with seedling prices which vary from $30 to $300/thousand plants according to the US Forest Service.

The diversity of the Green Industry provides major tasks for myriad of growers, researchers and extension agents. Because of these important high value crops, the IR-4 ornamentals program is conducting approximately 450 trials each year.

Article by J. Ray Frank

IR-4 Biopesticide Program

IR-4 Biopesticide Funding in 1999

The IR-4 Biopesticides Program has funded the following 29 projects for 1999:

- Development of *Dactylaria higginsii* as a Bioherbicide to Control Nutsedge Species in Florida Vegetables, Turf and Ornamentals,
  R. Charudattan, University of Florida;

- Large Scale Field Efficacy of *Aspergillus flavus* AF36 in Displacing Aflatoxin Producing Fungi and Long Term Impact of Applications Within and Outside Target Fields
  Peter J. Cotty, USDA-ARS and University of Arizona;

Continued on Page 16

IR-4 Biopesticide Funding in 1999

Continued from Page 15

- *Pseudomonus aureofaciens* as a Biocontrol Agent for Brown Patch (*Rhizoctonia solani*) and Pythium blight (*Pythium aphanidermatum*) Diseases of Turfgrass,
  Joseph M. Vargas, Jr., Michigan State University;

- Toxicology and pathogenicity testing for *Trichoderma hamatum* 382,
  Harry A.J. Hoitink, Ohio State University;

- Microbial Control of the China Mark Moth, *Nymphuliella daickealis* (Haimbach), in Aquatic Nurseries Using *Bacillus thuringiensis 'kurstaki'*
  R.V. Bosmans, S.A. Gill and M.J. Raupp, University of Maryland;

- Evaluation of Alpha hexyl Cinnamic Aldehyde for the Control of greenhouse pests on horticulture crops,
  M. Parrella and B.C. Murphy, University of California, Davis;

- Effect of AuxiGro™ on the Growth and Yield of Pumpkin and Muskmelon,
  M.D. Orzolek, Pennsylvania State University;

- Effect of AuxiGro™ on the Growth, Quality and Yield of Sweet Potato and Pickling Cucumber,
  D.W. Monks and J.R. Scultheis, North Carolina State University;

- *Pseudomonas syringae* pv. *Tagetis* for control of Canada thistle (*Cirsium arvense* L.) in peas,
  R. Becker and E. Katovich, University of Minnesota;

- Efficacy trials of *Trichoderma harizanum* and *Bacillus subtilis* in plug mixes for controlling Fusarium Crown and Root Rot of Tomatoes in Florida,
  L. Datnoff, University of Florida;

- Evaluation of the microbial fungicide Serenade™ WP Biofungicide for the control of Alternaria leaf and stem blight in Ginseng,
  M. Drilias, University of Wisconsin, D. Ewing and S. Flanagan of AgraQuest®, Inc.;

- Field Evaluation of Serenade™ WP Biofungicide for Control of *Botrytis cinerea* on Red Raspberries and Strawberries,
  P. Bristow and G. Windom, Washington State University, D. Ewing and S. Flanagan of AgraQuest®, Inc.;

- Evaluation of Reduced Risk and other Biorational Pesticides for Control of Powdery Mildew on Greenhouse Roses,
  S.A. Tjosvold, University of California;

- Field Evaluation of Serenade™ WP Biofungicide for Control of *Botrytis cinerea* on Strawberries,
  D. Gubler, University of California, D. Ewing and S. Flanagan of AgraQuest®, Inc.;

- Mating Disruption of Two Leafroller Species in Apple Using Isomate Hand-applied Disperser Technology,
  J. Brunner, Washington State University;

- Comparison of Technical and Pharmaceutical Grades of Ell-tetradecenyl Acetate for Mating Disruption of Sparganothis fruitworm,
  S. Polavarapu, Rutgers University;

- Milsana for the Control of Powdery Mildew of Apples,
  G. Grove, Washington State University, D. Rosenberger, Cornell University, K. Hickey, Pennsylvania State University;

Continued on Page 17

IR-4 Biopesticide Funding in 1999

Continued from Page 16

- Milsana for the Control of Powdery Mildew of Grapes,
  G. Grove, Washington State University, D. Gubler, University of California;

- Milsana for the Control of Powdery Mildew of Cucurbits,
  M.J. McGrath, Cornell University, G. Holmes, North Carolina State University, D. Gubler, University of California

- Milsana for Disease Control on Ornamentals,
  A. Chase, Chase Research Gardens, Mt. Aukum, CA;

- Elexa on Poinsettia for Powdery Mildew Control,
  F. Williams, Brigham Young University;

- Elexa on Grapes for Powdery Mildew Control,
  L. Bettiga, University of California;

- Mycostop Biofungicide for Ornamentals,
  D.M. Benson, North Carolina State University;

- Microbial Products for Prevention of Root Rot Diseases on Poinsettia,
  J.S. Lamboy, Cornell University;

- Evaluation of Biocontrol Agents for Controlling Root Diseases of Strawberry,
  F.N. Martin, USDA-ARS, Salinas, CA;

- Evaluate the Viability of TAE-001-GN at 3, 6 and 9 Month Intervals in Soil for Control of Black Vine Weevil on Yew,
  D.G. Nielsen, Ohio State University;

- Microbial Control of Pecan Weevil with the Fungal Pathogen, *Beauveria bassiana*,
  K.A. Sorensen, North Carolina State University;

- Field Evaluations of *Xanthomanos campestris* pv. *poannua* for Selective Control of Annual Bluegrass,
  J.C. Neal, North Carolina State University;

- Efficacy of Messenger for Control of Diseases on Apple, Grape and Pumpkin,
  S. Beer, H. Aldwinckle, W. Wilcox, T. Zitter, M. McGrath, M. Hoffman, Cornell University

Article by Bill Biehn

Aspergillus flavus isolate AF36: EUP and Temporary Exemption from the Requirement of a Tolerance Granted

In response to an IR-4 petition for the microbial pesticide *Aspergillus flavus* AF36 on cotton, EPA granted an Experimental Use Permit (EUP) on 30 APR 1999 and a Temporary Exemption from the Requirement of a Tolerance was published in the 26 MAY 1999 Federal Register. The EUP expires on 30 DEC 2000. The temporary tolerance exemption expires on 30 DEC 2001.

Aspergillus flavus isolate AF36 is for the application to cotton to reduce the incidence of aflatoxin producing strains of *A. flavus* and thereby reduce aflatoxin contamination of cottonseed. When applied just prior to flowering, *A. flavus* isolate AF36, which does not produce aflatoxin, competitively excludes aflatoxin producing *A. flavus* strains without increasing *A. flavus* in the environment in the long term. The EUP will assess grower response to the use of the microbial pesticide and determine long-term and short-term influences of treating relatively large contiguous acreages. Impact within treated fields and outside treated fields will be determined and monitored. This research will be overseen by Dr. Peter Cotty, USDA-ARS, Southern Regional Research Station.

Article by Bill Biehn

IR-4 QUALITY ASSURANCE

QA Focus - Inspections

(15th in a series of QA updates)

"Raising the Bar" (160.15)

This part of the EPA/FIFRA GLP standards is concerned with Agency inspections. As you know, we have experienced a great number of these since April 15 of 1997, primarily due to the nature of the IR-4 Project's organization. Our work is carried out nationwide, in universities, USDA and contract sites, so each and every one could be targeted for an Agency audit.

Findings from these thorough and time-consuming inspections have, overall, been positive, but this does not allow complacency. In GLP work, the bar is constantly being raised. We should really consider these the "baseline" audits for IR-4, and while we can be pleased with the initial outcome, we all need to take steps to maintain our status. In the "closeout letters" we receive from the Agency, they are direct in stating that the inspection report is not an endorsement. It is seen as a single inspection, closed for that one time, not the end of all EPA scrutiny.

With this in mind, we should be most congratulatory about our response as a program. The first series of inspections formed the basis for the "Learning from Each Other" workshop in San Francisco last year. Next came more targeted field research/QA sessions this year, carried out in three locations across the nation. Not only did these sessions provide GLP training on differing levels, they were an opportunity for feedback about the completion and arrangement of the field notebook. By a lot of hard work at HQ, many of the suggestions we received were put into the 1999 books in time for the new season. Other changes will be made for next year. So, we can see that Management, the GLP "leaders," is working together with QA and our cooperators, to respond in meaningful ways to the EPA audits.

Other such responses at each site could include: reviewing SOPs for their applicability in current practice; making better training (and certification) records for staff, especially those who will be temporary; updating CVs and organizational charts; re-doing farm maps in such a way that permanent markers and distances can be easily understood. Help for these and similar tasks should be sought from students wherever possible; it will be a new challenge for them, while to you it's the same old document or log sheet. This also helps promote "ownership" of field and laboratory data collection by the technicians.

On another positive note, in April the Headquarters QAU hired a third person, who will be responsible for much of the communications between Study Directors, QA, field and laboratory researchers and our contractors. We are pleased to introduce **Ms. Laurie O'Reilly** to our readers.

Laurie holds an M.S. degree from Rutgers University in Environmental Science, a B.A. in Meteorology, and an A.S. in Biology. She is currently receiving in-house training in GLP and QA principles, and was part of the recent "Beyond the Turnpike" trip to visit NJ agricultural sites. Laurie has over 10 years' experience in a laboratory setting, two of those involving research in Soil Science, which resulted in two publications in the Soil Science Society of America Journal. We are happy to have such a qualified and motivated person on our staff! Laurie is very excited to be a part of the IR-4 team, and looks forward to personally meeting more of you as we all continue "raising the bar" toward our Project's goals.

Article by Kathryn Hackett-Fields

Commodity Liaison Committee (CLC) News

The spring meeting of the CLC was held at Cavanaughs in Yakima, WA on April 15. Rocky Lundy, Executive Director of the Mint Industry Research Council was elected as the new CLC Chairman. Rocky replaces Jere Downing of the Cranberry Institute. The IR-4 and CLC are indebted to Jere for his commitment and leadership over the last five years. The CLC met at 7:00 am and then met jointly with the IR-4 Project Management Committee from 10:00 am to 12:00 noon. The PMC and CLC adjourned at 12:00 noon and traveled to the USDA/WSU Irrigated Ag Research and Education Center in Prosser, WA for a field tour. After the field tour, the group went on to visit the WSU Food and Environmental Quality Lab in Pasco, WA. The role and function of the CLC and the IR-4 budget was one of several issues discussed at the meeting. A special meeting to discuss this issue will be held at the Food Use Workshop in Denver on Thursday, August 26. The dinner meeting is open to all CLC and PMC members and will be held in the Bravo restaurant at the Adam's Mark from 5:30 pm - 8:30 pm. The next CLC spring meeting is tentatively scheduled for February 22-23, 2000 in Washington, DC. The CLC welcomes its newest committee member, Mr. Bill Spencer III, of Spencer Brothers, Yuma, AZ.

Article by Rocky Lundy

Congratulations and News

- Dr. Al Herner, USDA-ARS Beltsville Lab, retired on 30 April 1999 after 10 years of federal service. The majority of Dr. Herners' responsibilities at USDA have been in the area of pesticide analysis, primarily for USDA-IR-4. We wish Al the best in his new endeavors. Emy Pfiel will replace Dr. Herner as the Lab Research Director at the USDA-ARS Beltsville Lab.

- Dr. Theresa Ratto, formerly Quality Assurance Officer for the IR-4 Southern Region and recently an IR-4 Consultant, accepted a QA position with Valent USA Corporation in Dublin, CA. We wish her the best in her new position.

- The Agricultural Experiment Station in Puerto Rico has been added to the list of IR-4 Field Research Centers in the Southern region. Welcome aboard!

- Dr. Taka Shibamoto, University of California (Davis) and IR-4 Western Region Director will be starting a two year appointment in Japan on 1 July 1999.

- Dr. Chris Vandervoort successfully defended her Ph.D. oral on 13 May 1999. Congratulations, Dr. Vandervoort!

- Dr. Rich Bonanno, IR-4 Commodity Liaison Committee member, has been presented the 1999 Outstanding Young Weed Scientist Award from the Weed Science Society of America. He is a full time vegetable grower and a Senior Extension Specialist at the University of Massachusetts. Congratulations to Rich for a job well done.

New IR-4 Position - Communications

Sandy Perry from Michigan State University has recently been hired to serve as IR-4 National Outreach Specialist beginning June 1, 1999. It will be her job to develop and disseminate education and outreach materials about the IR-4 Program to increase awareness of IR-4: its mechanisms of operation, current activities, and general benefits. The target audiences for this outreach effort are many and include growers of minor crops, grower associations and commodity groups, Extension educators as well as regulators and policymakers.

To this effort, she brings experience gained in the horticulture industry and with Michigan State University Extension, where she has been part of the Pesticide Education Program for 7 years. Sandy has developed manuals on a variety of topics, created other types of learning materials, and given many presentations on pesticide related issues. Most recently, she has been involved with the Worker Protection Standard, development of drift management plans, and demystifying personal protective equipment for growers.

Sandy is eager to advance awareness of the IR-4 Program. She welcomes any and all input that will help in the outreach process. If you have comments, thoughts and suggestions on IR-4 related topics, please contact her at the phone number or e-mail address below. She is located at Michigan State University.

Article by Sandy Perry
(517) 432-5999 <perrys@msue.msu.edu>

Late Breaking News

- **Withdraw of GLPs from ELAB**

  The EPA's Environmental Laboratory Advisory Board (ELAB) has forwarded to the National Environmental Laboratory Accreditation Conference (NELAC) the recommendation to exclude laboratory testing done for and under TSCA and FIFRA GLPs from the accreditation process.

- **Spinosad**

  Spinosad awarded the 1999 Presidential Green Chemistry Challenge Award. The 1998 award went to tebufenozide.

- **Tebufenozide**

  Tebufenozide was approved on 10 JUN 99 as a reduced risk insecticide on the crops: mint, caneberries, blueberry, cranberry, turnip and canola.

New Technology Team Report

In response to the Early Development Research/New Technology "Request for Proposal", the New Technology Team (NTT) received 32 grant proposals. These proposals were reviewed by the NTT, the IR-4 Field Coordinators and the lead HQ Coordinators. After extensive review and discussion, the following proposals were funded:

PROPOSAL NAME AND INVESTIGATOR(S)	Cost ($)
Nematode and Corm Borer Management in Plantains - Ingles and Acin (PR)	5000
Pest Control Technology for the Control of Anthracnose and Botrytis in Strawberry - Louws (NC)	4871
The Evaluation of Low-Rate Herbicides to Supplement Methyl Bromide Alternatives for Weed Control in strawberries - Fennimore (CA)	4924
Management of Bacterial Spot of Peach Using Systemically Activated Resistance - Lalancette (NJ)	4800
Evaluation of New Fungicides to Control Anthracnose (*Colletotrichum gloesporioides* Penz) in Yam (*Dioscorea alata*) or Evaluation of New Fungicides to Manage "mal seco" Disease in Tanier (*Xanthosoma*)-Sosa and Acin (PR)[1]	5000
Chemical Weed Control for Edible Ginger Grown in Hawaii - DeFrank (HI)	5000
Starane (fluroxypyr) for Kochia and Nightshade Control in Dry Bulb Onions - Nissen and McDonald (CO)	3700
Tomato Herbicide Options for Methyl Bromide Alternatives - Monks and Mills (NC)	5000
Alternatives for Methyl Bromide for Weed Control in Tomatoes - Mullins (TN)	5000
Management of Sclerotinia White Mold on Cabbage with Combinations of Reduced Risk Fungicides- Cubeta (NC)	4900
Development of Control Strategies for Powdery Mildew of Chile Pepper - Olsen (AZ)[2]	3800
Screening New Herbicides for Weed Control in Lettuce, Cole Crops, Onions, and Melons - Umeda (AZ)	5000
Pepper Tolerance to Herbicides in a Methyl Bromide Alternatives Situation - Stall (FL)	5000
Potential New Herbicides for Green Onions - Smith and Fennimore (CA)	3805
Replacement of OP and Carbamate Insecticides with Spinosad for Management of Coleopteran Insects Attacking Eggplant - McLeod (AR)	4820
Methyl Bromide Alternatives for Bell Pepper Production - Johnson, Webster and Sumner (GA)	5000
Evaluation of New Herbicides for Weed Control in Carrots - Bellinder and Stivers (NY)	5000
Fosthiazate as an Alternative to Soil Fumigation for Potato Nematode Control - Hafez and Larkin (ID)	5000
The Influence of Fumigants on Yield and Quality of Muskmelon, Pepper and Tomato at the Horticultural Crops Research Station, Clinton, NC - Sanders, et.al (NC)	5000
Screening New Insecticide Chemistries for Blueberry, Grape, Peach and Cherries as Potential New Candidates for IR-4 Registration - Wise, Trinka and Korson (MI)	5000

[1] PI will be asked to choose one of the two proposals and modify the work plan to include a resistance management aspect.

[2] PI will be asked to expand the proposal to include one to two additional treatments, quinoxyfen and/or Milsana. An additional support of $1200 will be provided if PI agrees to changes.

In other New Technology Team news, Drs. Baron and Holm continue to travel and meet with industry and government groups to encourage development of solutions for minor crop pest management. Through these numerous meetings, closer working relationships have been formed along with the willingness to cooperate with IR-4.

Article by Jerry Baron

Fungicide Program Evaluation and Needs - Working Groups

The IR-4 Project would like to invite you to the initial meeting of some of the Fungicide Program Working Groups at the upcoming joint meeting between the American Phytopathological Society and Canadian Phytopathological Society, in Montreal, Canada on August 8 to 10. The Working Groups are based on EPA's established Crop Groups. This will be the initial meeting and discussion of the fungicide programs that will continue following these meetings. An electronic database is being developed and part of this database is a series of tables that summarize the present fungicide programs. These tables will be generalized and primarily used for discussion purposes. One of the tables will contain individual responses/evaluations of how specific fungicides are working to control specific diseases. The tables will be available prior to the meeting and new tables will continue to be developed for additional crops and crop groups. The crop grouping scheme was selected for its botanical, regulatory, disease and rotational crop synergy.

The Working Groups that have been scheduled for the meeting in Montreal are as follows:

"Six Crop Groups"

FRUIT CROPS
Fungicide Program Working Group for Crop Group 13 - Berries
At the Small Fruit Diseases Working Group Meeting
Sunday 8 to 10 am , Room 401C

Fungicide Program Working Group for Crop Group 11 - Pome Fruit
At the Deciduous Tree Fruit Workers Meeting
Sunday 12 noon to 2 pm, Room 409BC

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VEGETABLES
Fungicide Program Working Group for Crop Group 3 - Bulb Vegetables
Monday, August 9, 1 to 3 pm

Fungicide Program Working Group for Crop Group 5 - Brassica Leafy Vegetables
and Crop Group 2 - Leaves of Roots and Tubers
Monday, August 9, 3 to 5 pm

Fungicide Program Working Group for Crop Group 9 - Cucurbit Vegetables
Tuesday, August 10, 8 to 10-noon

Fungicide Program Working Group for Crop Group 4 - Leafy Vegetables
Tuesday, August 10, 10 to 12-noon

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Please check the meeting program for additional room assignments or changes.

We will not be able to cover all crops and all diseases of each Crop Group mentioned above at his meeting; however, we will be able to begin this process and identify present needs. I want to encourage you to try to attend the meetings that are relevant to your program or to provide your input to me prior to the meeting via the tables mentioned above. Please request the tables (keep bugging me) for those Crop Groups that you are interested in. I already have a good idea of many people's interest, but you are welcome to provide input on any areas that you find of interest.

Article by Dave Thompson
E-mail: dthompson@aesop.rutgers.edu

Crop Profiles
??Who Uses Them and How??

USDA:

Crop profiles provide USDA/Office of Pest Management Policy (OPMP) with background information on crop production and pest management practices. This information is used to evaluate and review EPA risk assessments, Reregistration Eligibility Documents (REDs), proposed risk mitigation/ management measures, and proposed label modifications (changes in application rates or PHIs, crop deletions, buffer zones, REIs, etc.). By comparing profile information with EPA assumptions, we can better respond to risk assessments and other regulatory decisions that are being made.

Crop profiles help USDA identify critical pest management needs, including the importance of individual pesticides to both IPM and Resistance Management Programs. Identifying how regulatory decisions may impact these established programs will be of significant importance during the implementation of FQPA.

The profiles provide important information for developing risk mitigation/management plans, transition strategies, and future research needs should cancellation of critical pesticides occur.

Crop production experts, including growers, grower organizations, and those in the land-grant system can be quickly and easily identified from crop profiles and consulted as needed.

Crop profiles provide the USDA with an encyclopedia of crop production information for most of the crops produced in the United States. USDA has no such source of information at this time.

EPA:

Crop profiles provide EPA with typical pesticide use and usage data that can replace default assumptions often used in risk assessments. This information provides a sound basis upon which EPA can develop risk mitigation/management plans. Crop profiles can be used to fill in data for the crop matrices that EPA is producing and provide background information important to Section 18 decisions.

States:

Individual states can use profiles to inform elected officials, extension directors, college deans, commodity groups, farmers and the public about the production of commodities in the state. Profiles can be placed on state websites. Pamphlets and brochures based on the profiles can be produced and distributed at trade shows, state fairs, conventions, etc.

State Departments of Agriculture would have a valuable reference tool for 24C and Section18 requests and the IR-4 liaison would have a list of crop needs within his/her state.

Grower Organizations:

Profiles can provide background information for grant proposals and for promotional and consumer information. Profiles can point to pest management research needs and grower organizations that provide research dollars can use crop profiles to prioritize requests for funding.

Researchers:

Researchers would be able to use crop profiles to identify grower needs and priorities.

Registrants:

Registrants could use profiles to identify new markets for research and development.

Article by Wilfred Burr
USDA-OPMP

Call for Newsletter Articles - Schedule

Issue	Call for Articles	Articles Due COB*
30:3	2 SEP 99 (Thursday)	9 SEP 99 (Thursday)
30:4	2 DEC 99 (Thursday)	9 DEC 99 (Thursday)

* COB = Close of business day on East Coast (1630)

Methyl Bromide Alternatives Program for Strawberries and Tomatoes - Status

Excellent progress has been made in the planning of IR-4's methyl bromide alternatives program for strawberries and tomatoes. Field trial programs are scheduled to be initiated in strawberries this Fall and in tomatoes early in 2000.

Trial Locations and Treatment Schedules

California: Trial locations are tentatively planned at two locations in California, with one site located near Salinas and the other near Oxnard. Actual dates of application have not been set, but are planned for late August/early September, 1999. Tomato trial locations in California are in San Diego county. These tests will be run on pole tomatoes and are tentatively scheduled for initiation in February, 2000.

Florida: Test sites for the strawberries trials in Florida are to be in the major production area of Plant City/Dover. The timing of applications in the Florida strawberry trials is similar to the timing in California but could be applied as late as early October or one month later than the California trials. Trial locations and timing for the Florida tomato trials will be one site near Zellwood and the other further north at a site near Live Oak. These trials are scheduled to be initiated in February/March, 2000.

Treatments

Treatments scheduled to be included in the IR-4 trials differ for strawberries and tomatoes.

Strawberries: For the Fall, 1999 program on strawberries, currently scheduled treatments are Enzone (sodium tetrathiocarbonate), Basamid (dazomet), Telone C-35/C-17 (1,3 dicloropropene + chloropicrin), metam sodium and methyl bromide + chloropicrin. Other products possibly to be included in strawberry trials in 2000 are Plantpro 45 (an iodine based product), and possibly a new natural product entry, Greenshield Compound (allyl isothiocyanate + capsaicin).

Enzone, Telone, Plantpro 45 and Greenshield Compound will be applied by drip irrigation under plastic mulch following metam sodium applications for weed control. The metam sodium would be applied to the bed surfaces concurrently with drip tape installation and mulching. The metam sodium will be applied at 26 gallons per acre and left undisturbed on the bed surfaces for movement into the soil by drip irrigation.

Tomatoes: In addition to the above treatments for strawberries, fosthiazate will be included in IR-4 tomato trials and evaluated for control of nematodes. Another possible treatment for tomatoes is a combination treatment of abamectin plus mefenoxam applied through drip tubes installed in the beds to a depth of 3-4 inches below the soil surface. This combination has potential for control of nematodes and the soilborne disease complex controlled by Ridomil fungicide. This combination will be included if Novartis is successful in developing an optimum formulation and if funding can be provided to IR-4 to test it.

New Possible Natural Product to Include in Trials

Greenshield Compound is a natural product containing allyl isothiocyanate and capsaicin. According to the producer of Greenshield Compound, Natural Pest FX, Washington, DC, this product controls soilborne diseases, nematodes and soil insects when used according to label recommendations. This product will be included in IR-4's strawberry and tomato trials if Natural Pest FX can provide funding to help defray the cost of the research. Funding possibilities are being explored by the company at this time.

Dr. Peter Caulkins Joins IR-4 Methyl Bromide Alternatives Advisory Board

We are pleased to announce that Dr. Peter Caulkins, Associate Director, Registration Division, Office of Pesticide Programs, EPA, has joined IR-4's Methyl Bromide Alternatives Advisory Board. Dr. Caulkins has agreed to coordinate critical scientific reviews of IR-4 research protocols and study plans with special emphasis on assuring regulatory compliance for studies needed to support product registrations. We welcome Dr. Caulkins and look forward to working closely with him and his staff during the oncoming months.

Article by Jack Norton

The EPA/IR-4 Technical Working Group Meeting and Tour

The most recent of a series of meetings that are occurring approximately every quarter between the IR-4 Headquarters staff and key scientists from the Environmental Protection Agency (EPA) was held on 7-8 June, 1999, in New Jersey. Participants from the EPA included Hoyt Jamerson, Bernie Schneider, Jeff Herndon, Sidney Jackson, Pat Cimino, Jim Jones, Margaret Stasikowski, Karen Whitby, Will Donovan, and Clark Swentzel. Additional attendees included Charlie Coiner, a grower/marketer of fresh herbs, IR-4 Regional Field Coordinators Ron Hampton (Western Region) and Edie Lurvey (Northeast Region), Bob Hollingworth (IR-4 Northcentral Region Director), Sandy Perry (IR-4's new National Outreach Specialist), and Dean Bruce Carlton of Cook College and Northeast Region IR-4 Administrative Adviser who welcomed the group.

The goal of these meetings is the creation of a more efficient system of IR-4 data submission and EPA review. The need to accelerate this process, particularly with regards to reduced-risk and other new pesticides, was increased with the passage of the Food Quality Protection Act.

The first day of the meeting was held at IR-4 Headquarters. Items discussed included a quantification of cost savings to IR-4 by acceptance of a blanket tolerance proposal for azoxystrobin (nearly $500,000); a new proposal for a blanket tolerance on all food commodities for glyphosate; an update on the IR-4 web page; the status of the FY 2000 petition work plan and the HED strategy for review of these petitions; an update on the "fee for service" proposal for petition review; the future integration of Mexico into the IR-4 planning process (in a role similar to Canada's); an update on the residue summary table format being developed for petitions; a proposal to move fresh/culinary herbs into Crop Group 4A; the non-food status of medicinal plants; an update on the status of the IR-4 methyl bromide program; and the potential registration of imidacloprid-treated spheres for apple maggot control.

The second day of the meeting was devoted to "Beyond the Turnpike - A Moving Seminar on New Jersey Agriculture." In addition to IR-4 Headquarters and U.S. EPA personnel (including Mike Hennessey); participants included Bruce Carlton (an Administrative Adviser to IR-4; Executive Dean of Cook College, Rutgers University; and Director of the New Jersey Agricultural Experiment Station), Samantha Goldstein of the USDA, and Jere Downing of The Cranberry Institute.

The first stop on the tour was the Rutgers Fruit Research and Extension Center in Cream Ridge, which conducts and disperses research information applicable to the production of high-quality tree and small fruits, including apples, peaches, apricots, nectarines, caneberries, strawberries, and grapes. The center increases production efficiency and protects fruit crops against environmental and biological hazards, while decreasing production costs and pesticide use. Joe Fiola, Extension Specialist in Small Fruits and Viticulture, discussed his efforts to improve strawberry and raspberry production in New Jersey. Dean Polk, Extension Agent in Fruit IPM, discussed his IPM programs with emphasis on the use of mating disruption techniques and the need for a clopyralid registration to control weeds in peach orchards in order to reduce the incidence of cat-facing insects (this is an ongoing IR-4 residue study).

The next stop was the Joseph J. White, Inc. cranberry farm in Whitesbog (near Browns Mills), which has been in operation since the mid-19th century. Begun by Joseph White, it is now operated by his great-grandson Joe Darlington. In 1911 the family began cooperating with the USDA in conducting highbush blueberry selection trials on the farm (previously, blueberries had been harvested only from the wild), and in 1916 became the first commercial producers of highbush blueberries in the world. During the 1980's and early '90's, however, the family scaled back its blueberry production, reflecting a trend among New Jersey's blueberry/cranberry growers. Since 1994, Joseph J. White, Inc., has been strictly a cranberry producer. The farm is located in the Pinelands National Reserve. On the way to this farm, Jere Downing gave the participants an overview of the cranberry industry. At Whitesbog, Joe Darlington discussed his crop management techniques and showed off his equipment (much of which is specialized for cranberry production), including new application equipment using GPS for precision fertilizer and chemical application.

During lunch at Lebanon State Forest, pest management issues in blueberries and cranberries were discussed by Sridhar Polavarapu, Extension Specialist in Entomology for these two crops. Sridhar gave IR-4 a lot of credit for recent work on and submissions of studies supporting new pesticide registrations for these berries.

After lunch, the group traveled to Bellview Farms in Landisville, founded in 1914. Jim Quarella represents the fourth generation of his family to operate this farm, which has grown to 150 acres. The farm specializes in the production and distribution of Southeast Asian vegetables, and also produces peppers, watermelons, and leeks. Jim, along with Atlantic County Agricultural Extension Agent, Rick Van Vranken, discussed the problems facing a grower of spe-

Continued on Page 25

The EPA/IR-4 Technical Working Group Meeting and Tour

Continued from Page 24

cialty vegetables, including having few pesticides registered for his crops. (A couple of recent registrations resulting from IR-4 submissions including spinosad and cypermethrin have slightly alleviated this problem for Jim's crops.)

The final stop was at the Rutgers Agricultural Research and Extension Center in Upper Deerfield, which generates and dispenses research information applicable to the production of high-quality vegetable crops, ornamentals, field crops, and tree and small fruits. IR-4 field residue trials are conducted here to develop data on minor crops for which there is an EPA field trial requirement for the northeast and mid- Atlantic/southeast crop growing regions. The center stimulates the production of crops with maximum benefit to the New Jersey economy and minimum risk to the environment. Gerry Ghidiu, Extension Specialist in Vegetable Entomology, and Larry Rossell, IR-4 Field Research Director, were the primary speakers at this site, and Larry showed the group some of his IR-4 field plots. Larry and his assistant, Erin Hitchner, conduct between 35 and 40 residue trials annually.

Following dinner at the Center, the EPA staffers were dropped off at the Wilmington train station for their return to Washington. All of the participants ended the day with a better understanding of New Jersey's minor crop agriculture, and renewed enthusiasm for the job of obtaining new pesticide registrations while maintaining food safety.

Article by Ken Samoil

Herbicide Update

151 INDIVIDUAL FIELD TRIALS BEING CONDUCTED IN 1999

Update on projects

A total of 151 individual field trials to support 35 herbicide projects are being conducted in 1999 across the continental U.S. as part of the IR-4 minor-use clearance program. The status of the 1999 field program is as broad as the geography over which the studies are being conducted. For some projects, the field portion is complete and samples have been sent to the analytical laboratory, while for other projects, the field study has been established with test substance application and sampling yet to be conducted. There are even a few projects in which the analytical portion of the study is complete. Other projects will not be established until later this year because of the growth pattern of the commodity and the location of the study.

Compounds with larger programs in 1999 include clopyralid (garden beet, turnip, blueberry, cranberry, and canola); pendimethalin (asparagus, pomegranate, and spinach); and sethoxydim (mustard greens, buckwheat, and borage). Studies are being conducted with compounds that range from the tried and true (2,4-D on hops) to more recent chemistries (halosulfuron on dry bean and cantaloupe; sulfentrazone on asparagus). M. Arsenovic, M. Braverman, and F. Salzman are the study directors for a majority of the herbicide projects; however, D. Kunkel, K. Samoil and J. Baron are study directors for the remaining herbicide projects.

The future of herbicide projects at IR-4

The introduction of herbicide-resistance crops especially those resistant to glyphosate is changing the agricultural chemical industry, which in turn will likely have an effect on future IR-4 herbicide projects. Competition from herbicide-resistant crops, coupled with low prices for major crop commodities, has lead to decreased sales and earnings for many of the agricultural chemical companies. The companies are now grappling with the issue of how to respond to current market conditions and position themselves for the future. There is little doubt the agricultural chemical industry will continue to change. The logo for IR-4 symbolizes the cooperation that occurs between the USDA-ARS, USDA-CSREES, state extension, EPA, and the agricultural chemical industry. It is logical that changes in one of those groups will affect the IR-4 Project. For a recent example, consider the effects of FQPA.

Continued on Page 26

Herbicide Update

Continued from Page 25

There are as many opinions as there are people, but with the confidence that my crystal ball is as good as anyone's, I will take the risk of putting my opinions in print. One thing to keep in mind on this issue is that there is more to it than the effect of herbicide-resistant crops or the overall farm economy for major crops. All of the major agricultural chemical companies are at present a part, often a minority, of larger parent corporations that are primarily pharmaceutical (including "life sciences") or basic chemical companies. Both the pharmaceutical and basic chemical industries are facing their own challenges and companies will make decisions based on the majority of their business, with the agricultural component to be considered later. Further complexity is added because parent companies are based in France, Germany, Japan, Switzerland, the United Kingdom, or the United States.

Executives in charge of pesticide discovery and development at the companies face a challenge to gain resources for herbicide discovery and development. They have to justify the costs of herbicide discovery and development to upper management who are looking at current trends and concluding that the market for herbicides in major crops is static or shrinking. Upper management of the agricultural chemical companies in turn have to justify decisions to their superiors in a parent company who see that the rate of return on agricultural pesticides, not just herbicides, compares unfavorably to other business units, for example pharmaceuticals. While I doubt all herbicide discovery and development efforts will cease, I expect a reduction in resources allocated to herbicide discovery and development in general due to internal allocation decisions and continued consolidation of the companies. As long as there is money to be made, work on herbicides will continue to be conducted. However, the pace of research and the release of new herbicide chemistries with novel modes of action will slow considerably compared to the last twenty years.

Stock analysts are calling for pharmaceutical companies to divest themselves of the agricultural chemical units. One option would be to sell the unit to another company, but with the farm economy in a slump and profits down there may not be many potential buyers. Another option would be for the agricultural chemical unit to be spun off as an independent company. This may be the best option for both the agricultural chemical companies and growers of minor and major crops. A spin off company may have a board that better understands agriculture, and be more willing and prepared to ride out the cyclical nature of the farm economy and focus on agricultural chemicals, rather then make comparisons with higher value pharmaceuticals. This option could also result in fewer layoffs among personnel and keep talent within the industry.

The certainty in this situation is that everyone involved with IR-4 will face the resulting opportunities and challenges.

Article by Fred Salzman

Herbicides News/Meetings: European Weed Research Society - 11th EWRD Symposium

The European Weed Research Society (EWRS) has selected Switzerland to host the 11th EWRS Symposium. The Symposium was held in Basel from Monday, 28 June - Thursday, 1 July 1999.

The symposium provided a forum for scientists to present their work on a broad range of weed science topics. Topics covered were:

1. Weed Biology (weed flora/systematics; genetics & molecular biology; weed seedbank & physiology; herbicide-resistant weeds)

2. Weed Ecology (population dynamics; crop/weed competition; allelopathy, biodiversity)

3. Weed Control (cropping techniques/conservation tillage; IPM/sustainable management; biological weed control; physical weed control; chemical weed control)

4. Recent Developments (habitat management & trophic interactions; reduced rates/precision farming/new application techniques; herbicide tolerant crops; herbicide biochemistry & physiology)

5. Environmental Impact of Weed Control (surface & ground water quality; soil quality; air quality; biotic compartments)

More than 200 oral and poster presentations were made.

Several workshops (Field Margin Interactions, Crop-Weed Interactions, Weed Seedbanks, and Weed Management in Orchards, Weed Management Systems in Vegetables) were scheduled during the Symposium. A meeting report will be provided for the Fall Newsletter.

Article by Marija Arsenovic

Washington, DC Report

The last three months have seen continued building of working relationships with USDA, EPA, ACPA and other members of the private sector. This report will describe highlights of the relationship building process, some very positive progress with minor uses at EPA, and updates on OPMP issues.

Meeting and discussion with the **American Nursery and Landscape Association and Society of American Florists.** The meeting was organized by J. Ray Frank, IR-4 Ornamentals Manager. Bob Holm described the new IR-4 organization and its objective to continue the outstanding partnership that has been developed and fostered by Ray. It is clear that the ANLA and SAF are pleased with the role that IR-4 has played in assisting those industries with the registration of pest management tactics over the years. It is also apparent that these organizations are very supportive of IR-4 and its efforts.

The **US EPA**, through the fine efforts of Pat Cimino, the **EPA Minor Use Team Leader**, have taken additional positive steps to supporting minor uses within the agency. Pat has committed to having monthly Minor Use Team meetings to be scheduled on the first Wednesday of each month. The EPA Minor Use Team has outlined several objectives for the next few months: 1) review and update the Team goals and objectives; 2) review and update the Team structure to efficiently implement those goals and objectives; and 3) prepare a report for Congress on minor uses as required by FQPA.

USDA's Office of Pest Management Policy under the leadership of Al Jennings has a number of priorities. Over the past three months OPMP has reviewed preliminary and refined risk assessments for a number of organophosphate insecticides. The review process included input from land-grant university scientists who have provided responses to the toxicology components as well as the practical impacts of loss of certain chemicals or uses of those materials. The next several months promise to be very busy with a number of risk assessments coming from the Agency.

Crop Profiles continue to come in and approximately 110 may be found on the web site located at http://ipmwww.ncsu.edu/opmppiap/.

Databases: Ron Stinner is posting a number of pest management databases on the web. The IR-4 database will be among them. See the above web site to see what is already posted.

The process of developing transition strategies has started. The South/Appalachian region apple growers, university specialists, crop consultants, USDA-ARS scientists, etc. have met and are developing possible transition strategies for the industry. A second session will take place in July to evaluate transition strategies for peaches.

EPA is planning to publish a draft PR- notice on Labeling of Pesticide Products Used in Greenhouses. OPMP sought advice on improving the proposal from IR-4 personnel, and land-grant scientists; suggestions were offered to the Agency. Once in place, there will be a requirement to have greenhouse as a labeled use site if the material is to be used there.

The Office of Pest Management Policy's staff has increased over the months. Below is a listing of the current staff:

Name	Phone	Fax	E-mail
Allen L. Jennings	202-720-5375	202-690-3662	Allen.Jennings@usda.gov
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Article by Willis Wheeler

Washington State Lawmakers Unanimously Vote To Increase WSCPR Responsibilities

On Monday, May 10, Governor Locke signed legislation that will broaden the original mandate of the Washington State Commission on Pesticide Registration (WSCPR), established in 1995 for the purpose of conducting studies and other activities that will result in pesticide registrations for minor uses. As of July 1, 1999, the Commission will receive an additional $1 million per biennium (for a total of $1 million per year) to continue its original mission and for its new, broader mandate to support research, implementation, and demonstration of any aspect of integrated pest management and pesticide resistance management.

Representative Gary Chandler, author of the original bill that created the Commission, reviews the progression. "Four years ago under the original funding of the Commission, the intent was to work toward re-registering pesticides. Now, with this additional $1 million to be spent over the next two years, we take it a step further in looking for alternatives to some pesticides. This not only ensures farmers will continue to produce a safe food supply, but lessens some of the demands on them as well".

"We are pleased that the Governor endorsed our initiative and are eager to employ the expanded mandate to the benefit of Washington agriculture," commented Tedd Wildman, WSCPR Chair. "The Commission's track record is remarkable; we have funded over 160 projects on commodities ranging from peas to honey bees to oysters. Approximately $2 million of matching funds have supplemented WSCPR awards for a total of almost $4 million dedicated to crop protection research over the past five years. The dollar value of emergency exemptions supported by WSCPR efforts alone was in excess of $100 million in both 1997 and 1998. Lawmakers and the public have every reason to expect similar results as the Commission carries out the new duties.

Ann George, Washington Hop Commission Administrator and WSCPR Commissioner, is enthusiastic about what the Commission can now offer. "This will be a tremendous opportunity for minor crops in the state. WSCPR will be able to assist in developing more effective and environmentally sound integrated pest management systems that would otherwise have been unfeasible due to economic constraints." [Editor's Note: Ann is also a member of the IR-4 Commodity Liaison Committee].

Alan Schreiber, WSCPR Administrator since the Commission's inception in 1995, summarizes, "There are a few bright spots for agriculture these days. It is encouraging to see that our state's legislature has the foresight and understanding to address the challenges we face. Growers, processors, consumers-everybody benefits-from the significant increase of WSCPR responsibilities."

Further Information :see www.wscpr.org

Alan Schreiber, WSCPR Administrator
(509) 543-9757; aschreib@cbvcp.com

Tanya Wojtowych, WSCPR Secretary
(208) 285-0121; juliana@moscow.com

New Food Use Requests Received and Assigned PR #s To 7441, Inclusive

Commodity	Pesticide	PR#	State(s)
All Crops	Glyphosate	7375	NJ
	Spinosad	7356	NJ
Apple	Fipronil	7387	MI
Arrugula	Sethoxydim	7380	FL
Artichoke	Azoxystrobin	7364	CA
	Imidacloprid	7358	CA
	Metaldehyde	7396	CA
Basil	Thiamethoxam	7418	HQ
Beehives (Wax and honey)	Tebufenpyrad	7367	MD
Blueberry	Azafenidin	7385	MI
	Metaldehyde	7397	OR,CA
Cabbage	Methoxyfenozide	7436	OK
	Pymetrozine	7433	OK
Cantaloup	Buprofezin	7410	FL
	Pyriproxyfen	7416	FL
	Tebufenozide	7422	NC
Cherry	Fipronil	7388	MI
Chervil	Sethoxydim	7381	FL
Chives	Thiamethoxam	7419	HQ
Coffee	Azafenidin	7405	HI
Collard	Methoxyfenozide	7440	OK
	Pymetrozine	7431	OK
	Thiamethoxam	7426	OK

Commodity	Pesticide	PR#	State(s)
Corn (Sweet)	Dicamba + Difufenzopyr	7376	WI
Cranberry	Methoxyfenozide	7355	MA
	Propiconazole	7359	OR,WA
	Tebufenozide	7424	MA
Cucumber	Buprofezin	7409	FL
	Pyriproxyfen	7415	FL
	Tebufenozide	7423	NC,TN
Dill	Azoxystrobin	7363	CA
Dill (Seed)	Spinosad	7361	HQ
Eggplant	Bifenthrin	7394	AR
	Thiamethoxam	7391	AR
Endive	Paraquat	7420	NJ
Grape	Milsana	7368	NC
Grasses (Pasture)	Spinosad	7401	GA,TX
Greens (Mustard)	Methoxyfenozide	7439	OK
	Thiamethoxam	7427	OK
Guava	Pyriproxyfen	7374	FL
Honey Bees	Coumaphos	7371	TX
Kale	Methoxyfenozide	7441	OK
	Pymetrozine	7430	OK
	Thiamethoxam	7425	OK
Lychee	Pyriproxyfen	7372	FL

New Food Use Requests Received and Assigned PR #s To 7441, Inclusive

Commodity	Pesticide	PR#	State(s)
Mint	Bifenazate	7386	FL
	Oxamyl	7390	FL
	Pyridaben	7393	FL
	Sethoxydim	7382	FL
	Thiamethoxam	7362	WA,MI
Okra	Buprofezin	7408	FL
	Pyriproxyfen	7414	FL
Onion	Flumioxazin	7389	MI
Pea (Blackeyed)	Tebufenozide	7421	AR
Pear	Fenhexamid	7402	CA
Pepper (Bell)	Methoxyfenozide	7435	OK
	Pymetrozine	7434	OK
Perennial Peanuts	Imazameth	7399	FL
Perennial Peanuts (Nursery)	Clethodim	7400	FL
Pineapple	Azafenidin	7404	HI
Prickly Pear Cactus	Metaldehyde	7395	CA
Radish (Roots)	Spinosad	7360	HQ
Savory	Sethoxydim	7383	FL
Sorrel	Sethoxydim	7384	FL
Spinach	Methoxyfenozide	7437	OK
	Thiamethoxam	7429	OK
Squash (Summer)	Buprofezin	7411	FL
	Pyriproxyfen	7417	FL
Sunflower	Flumioxazin	7373	ND
Sweetpotato	Esfenvalerate	7403	OK,PR,SC, FL,NJ,MD, TX
Tanier	Azoxystrobin	7392	PR
TiPalm	Glyphosate	7378	HI
	Oxyfluorfen	7377	HI
	Spinosad	7379	HI
Tobacco	Metaldehyde	7369	KY,TN
Tomato (GH)	Buprofezin	7406	VA
Tomato	Buprofezin	7407	FL
	Imidacloprid	7366	NJ
	Pyriproxyfen	7412	VA
	Pyriproxyfen	7413	FL
Tropical Fruit	Hydramethylnon	7365	HI
Turnip Greens	Methoxyfenozide	7438	OK
	Pymetrozine	7432	OK
	Thiamethoxam	7428	OK
Watercress	Metaldehyde	7370	FL
Watermelon	Methoxyfenozide	7357	CA
Wheat	Spinosad	7398	KS

Compiled by Diane Infante

Summary of IR-4 Minor Use Petitions and Petition Amendments Sent to *Industry* During the 2nd Quarter, 1999

Pesticide	Site	PR. NO.	Requesting State(s)	Petition Type	Manufacturer
Bifenthrin	Lettuce (Head)	5274	AZ	Tolerance	FMC
Imidacloprid	Cilantro	6396	FL	Tolerance	BAYER
Paraquat	Persimmon	6247	FL	Tolerance	ZENECA
Bifenthrin	Caneberry	A5004	OR, WA	Tolerance	FMC
Clethodim	Cranberry	5358	MA, WA, WI	Tolerance	VALENT
Sethoxydim	Pistachio	3707	CA	Tolerance	BASF
Kaolin (SURROUND™ WP)	Fruits, Nuts and Vegetables	83B	WV	Registration	ENGELHARD
Cryolite	Mint (Pacific NW only)	6438	WA	Tolerance	GOWAN
Glyphosate	Dry Pea	6139	WA, ID	Tolerance	MONSANTO
Glyphosate	All Food Commodities	7375	FL, TX, CA, ND, NJ	Tolerance	MONSANTO

Compiled by Bill Biehn

Summary of IR-4 Minor Use Petitions and Petition Amendments Sent to *EPA* During the 2nd Quarter, 1999

Pesticide	Site	PR. NO.	Requesting State(s)	Petition Type	Date Sent
Zinc Phosphide	Potato (ID only)	6123	ID	Tolerance	6 APR 99
Zinc Phosphide	Raspberry	2957	NH	Tolerance	8 APR 99
Pyridaben	Cranberry	6671	MA	Tolerance	6 MAY 99
Mefenoxam	Basil, Chives, Thyme, Rosemary, (Herbs Crop Subgroup 19A)	5756 6045 2832 5045 4082 2491 4028	FL, CA, SC	Tolerance	11 MAY 99
Glyphosate	All Food Commodities	7375	FL, TX, CA, ND, NJ	Tolerance	11 MAY 99
Paraquat	Persimmon	6247	FL	Tolerance	24 MAY 99
Sethoxydim	Pistachio	3707	CA	Tolerance	3 JUN 99
Bifenthrin	Grape	5335	OK, WA	Tolerance	9 JUN 99
Sethoxydim	Safflower	2531	CA, MT, ND	Tolerance	23 JUN 99
Pyridate	Mint	3927	WA	Tolerance	30 JUN 99
Paraquat	Endive (Escarole)	7420	FL, AR, NJ	Tolerance	30 JUN 99

Compiled by Bill Biehn

Communications 1

IR-4 SAES / ARS / REGIONAL LIAISON REPRESENTATIVES

Northeastern Region

NAME (Specialty Area)	State / Title	Telephone	Fax No.
Dr. Richard A. Durst (10)	Reg. Dir.	(315) 787-2297	(315)787-2284
Ms. Edith Lurvey (13)	Reg. Field Coor.	(315) 787-2308	(315) 787-2397
Dr. Inga-Mai Larsson-Kovach (10)	Reg. Lab. Coor.	(315) 787-2338	(315) 787-2284
Ms. Denise Snook (4)	Reg. QA Coor.	(315)787-2411	(315) 787-2397
Dr. Richard A. Ashley (3)	CT	(203) 486-3435	(203) 486-4128
Dr. Susan P. Whitney (5)	DE	(302) 831-8886	(302) 831-3651
Dr. James Allen (1)	DC	(202) 274-7140	(202) 274-6360
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Dr. Frank Caruso (9)	MA	(508) 295-2212	(508) 295-6387
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Southern Region

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Ms. Jau W. Yoh (10)	Reg. Lab. Coor.	(352)392-1978/407	(352) 392-1988
Mr. Samuel Fernando (9)	Reg. QA Coor.	(352)392-1978/419	(352) 392-1988
Dr. Charles Gilliam (6)	AL	(334) 844-3045	(334)844-3131
Dr. Ronald E. Talbert (13)	AR	(501) 575-2657	(501)575-3975
Dr. Charles W. Meister (9)	FL	(352)392-2399/412	(352) 392-1988
Dr. Stanley Culpepper (13)	GA	(912) 386-3194	(912)386-7308
Dr. William Nesmith (9)	KY	(606) 257-3991	(606)323-1961
Dr. Richard N. Story (5)	LA	(225) 388-1833	(225)388-1643
Dr. Clarence H. Collison (5)	MS	(601) 325-2085	(601)325-8837
Dr. Ross B. Leidy (10)	NC	(919) 515-3391	(919)515-5462
Mr. Marty New (5)	OK	(405) 744-5526	(405)744-6039
Dr. Nilsa M. Acin (10)	PR	(787) 756-6733	(787)758-5158
Dr. Robert G. Bellinger (5)	SC	(864) 656-5042	(864)656-5065
Dr. Carroll J. Southards (9)	TN	(423) 974-7135	(423)974-4744
Dr. Rodney L. Holloway (5)	TX	(409) 845-3849	(409)845-6251
Dr. Michael J. Weaver (9)	VA	(540) 231-6543	(540)231-3057
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Dr. Howard F. Harrison (13)	SC, USDA-ARS	(843) 556-0840	(843)763-7013
Mr. Tom Hendricks (10)	GA, USDA-ARS	(912) 387-2392	(912)387-2352

Northcentral Region

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Dr. Robert M. Hollingworth (5)	Reg. Dir.	(517) 432-7718	(517) 353-5598
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Dr. Mark L. Gleason (9)	IA	(515) 294-0579	(515) 294-9420
Dr. David J. Williams (6)	IL	(217) 333-2126	(217) 244-3469
Dr. Alan York (5)	IN	(765) 494-4559	(765) 494-0535
Dr. Charles W. Marr (6)	KS	(785) 532-1441	(785) 532-6949
Dr. Satoru Miyazaki (5)	MI	(517) 353-9497	(517) 353-5598
Dr. David Walgenbach (5)	MN	(507) 835-3620	(507) 835-3622
Dr. Chris J. Starbuck (6)	MO	(573) 882-9630	(573) 882-1469
Dr. Richard Zollinger (13)	ND	(701) 231-8157	(701) 231-8474
Dr. Shripat T. Kamble (5)	NE	(402) 472-6857	(402) 472-4687
Dr. Richard K. Lindquist (5)	OH	(330) 263-3736	(330) 263-3686
Mr. Leon J. Wrage (13)	SD	(605) 688-4591	(605) 688-4602
Dr. John Wedberg (5)	WI	(608) 262-3226	(608) 262-3322
Dr. Michael G. Klein (5)	OH, USDA-ARS	(330) 263-3896	(330) 263-3696
Dr. Charles Krause (9)	OH, USDA-ARS	(330) 263-3672	(330) 263-3841
Dr. Loyd M. Wax (13)	IL, USDA-ARS	(217) 333-9653	(217) 244-7703

Western Region

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Dr. Ronald E. Hampton (3)	Reg. Field Coor.	(530) 752-7633	(530) 752-2866
Mr. Charles Mourer (10)	Reg. Lab. Coor.	(530) 752-2402	(530) 754-8556
Mr. Jim McFarland (4)	Reg. QA Coor.	(530) 752-3496	(530) 752-3394
Dr. Donald E. Carling (9)	AK	(907) 746-9470	(907) 746-2677
Dr. John Palumbo (5)	AZ	(520) 782-3836	(520) 782-1940
Mrs. Margaret Reiff (2)	CA	(530) 752-7633	(530) 752-2866
Dr. Sandra McDonald (13)	CO	(970) 491-6027	(970) 491-3862
Dr. Ross Miller (5)	Guam	(671) 735-2141	(671) 734-4600
Dr. Michael K. Kawate (1)	HI	(808) 956-6008	(808) 956-9675
Ms. Ronda Hirnyck (8)	ID	(208) 364-4046	(208) 364-4035
Dr. Reeves Petroff (5)	MT	(406) 994-3518	(406) 994-6029
Dr. Richard Lee (13)	NM	(505) 646-2888	(505) 646-8085
Dr. James N. Seiber (10)	NV	(702) 784-6460	(702) 784-1142
Dr. Jeff Jenkins (12)	OR	(541) 737-5993	(541) 737-5001
Dr. Howard M. Deer (8)	UT	(435) 797-1602	(435) 797-1601
Dr. Doug Walsh (5)	WA	(509) 786-9287	(509) 786-9370
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Dr. Robert G. Linderman (9)	OR, USDA-ARS	(541) 750-8760	(541) 750-8764
Dr. Harold H. Toba (5)	WA, USDA-ARS	(509) 454-6553	(509) 454-5646
(RESERVED)	WA, USDA-ARS		

SPECIALTY AREA KEY

(1)	Biochemist	(6)	Horticulturist	(11)	Soil Scientist
(2)	Biologist	(7)	Nematologist	(12)	Toxicologist
(3)	Botany / Plant Scientist	(8)	Pesticide Coordinator	(13)	Weed Scientist
(4)	Chemist	(9)	Plant Pathologist		
(5)	Entomologist	(10)	Residue Chemist		

8/18/99

Communications 2

IR-4 SAES / ARS / REGIONAL LIAISON REPRESENTATIVES (e-mail)

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Dr. Donald A. Rutz (5)	NY (Ithaca)	dar11@cornell.edu
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SPECIALTY AREA KEY

(1)	Biochemist
(2)	Biologist
(3)	Botany / Plant Scientist
(4)	Chemist
(5)	Entomologist
(6)	Horticulturist
(7)	Nematologist
(8)	Pesticide Coordinator
(9)	Plant Pathologist
(10)	Residue Chemist
(11)	Soil Scientist
(12)	Toxicologist
(13)	Weed Scientist

NOTE:
1 = number one
l = lower case letter L

8/18/99

Communications 3

FAX No. 732-932-8481

Telephone Extensions - IR-4 Direct

The following is a list of telephone extensions for Headquarters personnel.

732-932-9575

Name	Extension
Marija Arsenovic	609#
Jerry Baron	605#
Bill Biehn	603#
Josh Brashier	624#
Michael Braverman	610#
Johannes Corley	611#
Keith Dorschner	615#
Cheryl Ferrazoli	601#
Kathryn Hackett-Fields	619#
Bob Holm	604#
Diane Infante	620#
Dan Kunkel	616#
Betty Lovuolo	617#
George Markle	606#
Jack Norton	612#
Laurie O'Reilly	608#
Fred Salzman	625#
Ken Samoil	614#
Pat Sarica	618#
Judy Streisand	600#
David Thompson	613#
Tammy White	607#

Note: Press "*8" for voice mail options. For example, to transfer from one extension to another, press *8, then enter the three digit extension followed by the # sign.

E-Mail Addresses

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7/9/99

Communications - 4

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IR-4/Canada Minor Use Activities

IR-4 was asked to participate in the initial Canada U.S. Trade Agreement (CUSTA) Technical Working Group (TWG) on Pesticides meetings. Dr. Baron attended meetings in Ottawa and Annapolis, MD in 1994/1995 as part of the Government participants. Coordination and harmonization of minor use programs were issues at these early meetings. IR-4 participated in a Minor Use Workplan with EPA (Hoyt Jamerson) and Canada (Doug Rothwell). In the June 1995 CUSTA TWG Accomplishment Report, it was noted "Through CUSTA, Canada's Pest Management Regulatory Agency (PMRA), EPA, and USDA'-s IR-4 there has been coordinated activities to harmonize minor use label expansions programs to reduce duplication and costs, accelerate the minor use registration process in both countries and prevent future trade irritants." The report goes on further to say "Specifically, under CUSTA, field residue data which is generated by IR-4 is being used to support minor use pesticide registrations in both Canada and the US. For example, according to the Cranberry Institute, IR-4 has generated approximately US$100 million worth of residue data for cranberries. This has provided cranberry growers in both Canada and the US with a number of tools needed to protect their crops from agricultural pests."

IR-4 participated in a project to draft extensions of the US residue data zone map into Canada. This was unofficially accepted by EPA in 1995 for use on minor crops.

A formal information exchange between IR-4 and PMRA was established. PMRA's Minor Use Coordinator, Doug Rothwell has attended all the IR-4 National Planning and Project Selection meetings since 1995. Based on his participation, IR-4 and Canada have conducted several cooperative research projects where data is concurrently being developed in both countries. These include the following:

Cranberry	Tebufenozide (Reduced Risk Insecticide)
	Azoxystrobin (Reduced Risk Fungicide)
	Methoxyfenozide (Reduced Risk Insecticide)
	Spinosad (Reduced Risk Insecticide)
Canola	Benomyl (Emergency Use Fungicide)
	Bifenthrin (OP Replacement Insecticide)
	Tebufenozide (Reduced Risk Insecticide)
Pear	Diflubenzuron (Insecticide Growth Regulator Insecticide)
Broccoli	Azoxystrobin (Reduced Risk Fungicide)
Cabbage	Azoxystrobin (Reduced Risk Fungicide)
Celery	Pirimicarb (IPM Compatible Insecticide)
Cherry	Pyridaben (Safer Alternative Miticide)
Green Onion	Tebuconazole (Pilot NAFTA project w/ cooperation with Bayer-Mexico)

IR-4 has provided consultation to Agriculture Canada and the Canadian Horticultural Council to assist in developing solutions for minor use problems.

Article by Jerry Baron