

IR-4 FOOD-USE PROGRAM

IR-4 Food-Use Research - 1999 and 2000

The final tally for the 1999 research program is in. IR-4 conducted 151 studies supported by 608 field trials. Pesticide performance trials were conducted on 18 field trials. IR-4 is already gearing up for 2000 research. The IR-4 Food Use Workshop was held in August and the final research plans will be made at our National Research Planning meeting scheduled for October 26 and 27, 1999.

The number of field trials in 1999 is as follows:

1999 Final Tally is 608 Trials	Northeast:	72
	Northcentral:	83
	Southern:	103
	Western:	200
	USDA-ARS:	120
	Canada:	12
	Performance:	<u>18</u>
	Total:	608

IR-4 continues to aggressively pursue its 30 month time-line to complete studies. Many of the 1999 Field Data Notebooks have already been completed and are in the process of being reviewed and sent to Headquarters. This initiative requires that everyone in the program participate. Thanks to all the folks that have completed their notebooks in advance of the timelines. And to the folks that are still working on your notebooks, please help us out by getting them in as soon as possible!

Article by Dan Kunkel

Industry Meetings with IR-4 during the 3rd quarter 1999: IR-4 Headquarters staff had several technical meetings with cooperative chemical companies in this quarter. The Study Directors, as well as the Research and Registration managers met with Rohm and Haas representatives to discuss their new insecticide methoxyfenozide, representatives from Makhteshim-Agan N.A. Inc. met to discuss cooperative projects, and Dr. R. Kaiser of AgrEvo met to discuss new fungicides. A representative from EcoScience Corp. visited to discuss some of their new products and registration initiatives. Also, Dr. Jim Griffiths visited Headquarters to discuss the possibility of registering Arsanilic acid on grapefruit. After an extensive exchange of information, Dr. Griffiths visited EPA and the USDA to discuss the project in more detail. Hopefully, IR-4 will be able to assist the Florida growers in their registration efforts.

IR-4 Biotechnology Program: Recent Progress and Future in Addressing Minor Crop Growers Needs

The IR-4 New Technology Team has taken a pro-active approach to pursue the latest technology in crop protection in an effort to extend this technology to minor crop growers. Their initiatives include: working with developing new pesticides for minor uses, especially the new reduced risk pesticides; developing biopesticides, methyl bromide replacements and

finally transgenic crops. Today there are several transgenic crops, including some minor crops, available that express *Bacillus thuringiensis* (Bt) and provide insect resistance. Although IR-4 has not been directly involved in the development of Bt transgenic crops, IR-4 cleared Bt for use on all Raw Agricultural Commodities in 1976.

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IR-4 Biotechnology Program: Recent Progress and Future in Addressing Minor Crop Growers Needs

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IR-4 is in the process of formalizing a biotechnology program but has not been involved in any research involving actual genetic transformations. IR-4 has only been involved in developing new residue data that are required for these new uses. The first transgenic project that IR-4 was involved with is the glufosinate tolerant sweetcorn (Liberty Link® Sweetcorn). IR-4 pursued this project under the request of interested parties in Wisconsin who urgently need triazine replacement herbicides. In Wisconsin, atrazine use is already banned in several groundwater-sensitive areas, and cyanazine use is being phased out across the country. In Wisconsin there are also several triazine resistant weeds and other weeds that are difficult to control with the remaining labeled herbicides. In addition, many of the currently registered herbicides may cause injury to many of the popular sweetcorn varieties. Several sweet corn varieties had already had the Liberty Link® gene in them, however, this new use of glufosinate still required residue data to show that the herbicide residue level is acceptable and safe for consumers. IR-4 initiated work in 1997 to determine glufosinate residues in sweetcorn grown in the mid-west only. The samples have been collected and residue analysis is nearly complete. The complete package will be submitted to EPA for a regional registration in 2000. In 1999, Wisconsin pursued and received a Section 18 and time limited tolerance based on IR-4 support for this use.

At the 1998 IR-4 Food Use Workshop, requesters across the country agreed that Liberty Link® sweetcorn was an

important need and had requested that IR-4 complete trials for Liberty Link® sweetcorn as a national research project in 1999. Liberty Link® sweetcorn also contains the Bt gene, therefore, this new use would not only reduce the use of triazine herbicides in sweetcorn but also will significantly reduce the amount of insecticides used in this crop for control of corn earworm, corn borer and other lepidopterous pests.

IR-4 is getting involved in other transgenic projects using Round-up Ready® crops as these uses may provide possible alternatives to Methyl Bromide in crops such as tomatoes and strawberries, and for Food Quality Protection Act vulnerable uses on other crops such as lettuce. Although the future of transgenic crops are uncertain, the development of herbicide tolerant and insect resistant crops are likely to be followed by disease resistant traits. As well, value added (output) traits with altered nutritional value (such as high oil, high Lysine and Methionine) will likely be released in the next 2-5 years and plants that produce biopolymers, plastics, bioethanol, vitamins, customized chemicals, pharmaceuticals, etc are somewhere on the horizon. Many of these transgenic crops are likely to have the greatest utility in developing countries by providing a more nutritious diet and increasing crop production with herbicide tolerant and insect and pathogen resistant crops. However, public opinion and acceptance remain viable concerns regarding the development of this technology and its future in agriculture.

Article by Dan Kunkel

Summary of the 1999/2000 IR-4 Food-Use Workshop

The majority of the research priorities for IR-4's year 2000 research program were assigned at the 23rd Food-Use Workshop, August 25-27 at the Adam's Mark Hotel, Denver, Colorado. Research priorities were reviewed for minor crop pest control needs on most fruit, vegetables and herbs grown in the United States and Canada. In addition, minor uses on major food crops were also discussed. Additional priorities will be obtained directly from people associated with tropical crops, artichokes, bee hives, cranberries, canola, clover, grass seed, hops, mint and mushrooms.

The workshop was attended by minor crop researchers, extension specialists, extension agents, growers, representatives of commodity organizations and registrants, as well as by personnel from EPA, USDA and IR-4. In total, 142 attendees participated in the priority-setting workshop. There were three principal divisions at the workshop: Disease Control, Insect Control, and Weed Control.

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Summary of the 1999/2000 IR-4 Food-Use Workshop

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A total of 559 potential research projects was reviewed. Participants were strongly encouraged to concentrate on potential new “safer” pesticides as tools to manage existing pest control voids or tools to replace pesticide uses at risk of being canceled due to EPA’s tolerance reassessment activities. Prior to the workshop, participants were provided a summary of newly or soon-to-be registered pesticides. In addition, representatives from several conventional chemical and biopesticide companies provided a brief presentation of their technology.

Following the format changes initiated several years back, research project prioritization participants were instructed to rank potential year 2000 research projects in one of four priority categories. *Priority A* and *Priority B*, the two highest ranking priorities, had limits on the number of projects assigned. *Priority A* was limited to the upper 10% of projects reviewed while *Priority B* was capped at 25% of potential projects. *Priority C* and *Priority D* are of lower importance and did not have caps on the number of projects ranked. The number of research projects per category is as follows:

	Disease Control	Insect Control	Weed Control
Priority A	23	20	21
Priority B	40	52	58
Priority C	137	145	137
Priority D	14	5	8
New Requests Submitted	31	25	52
Request Withdrawn	11	15	42

Finalization of priority assignment will occur with submission of priorities from certain commodity organizations (artichoke, canola, hop, mint, etc.) and the tropical working group. Research project selection and assignment occur at the IR-4 National Research Planning Meeting. Recognizing that current priority procedures concentrate on national research priorities, each IR-4 region will have an opportunity to upgrade certain priorities to reflect the need of a use in a specific region. At the IR-4 National Research Planning Meeting, IR-4 resources will be designated to initiate a complete research program for all *Priority A* projects with submission to EPA scheduled for 2002. *Priority B* projects will be chosen to maximize the utilization of IR-4 funds. Projects categorized as *Priority C* or *Priority D* will not be funded by IR-4 unless all *Priority A* and *Priority B* projects are chosen for research.

Article by Jerry Baron

IR-4 ORNAMENTALS PROGRAM

New Pesticide Registrations for Ornamentals Supported by IR-4

Since the last IR-4 Newsletter, 223 new ornamental use registrations have been obtained. They include the following:

- Azoxystrobin - Abelia, False Arborvitae (Thujaopsis), Japanese Aster (Kalimeris), Michaelmas Daisy (Aster), Azalea, Heavenly Bamboo, Barberry, Birch, Bolton Aster (Boltonia), Bridal Wreath (Spirea), Bugleweed (Ajuga), Butterfly Bush (Buddleia), Cedar (Cedrus), Chrysanthemum, Cotoneaster, Crape Myrtle, False Cypress, Shasta Daisy (Chrysanthemum), Flowering Dogwood, English Ivy, Winged Euonymus, Foxglove, Forsythia, Geranium, Heath (Erica), Hemlock, Holly, Juniper, Lilyturf, Magnolia, Maple, Oak, Pampas Grass, Periwinkle, Photinia, Pieris, Pine, Plantain Lily, Primrose, Privet (Ligustrum), Redbud, Rose, Rose Mallow (Hibiscus), Sage (Salvia), Spruce, Stonecrop (Sedum), Summer-Sweet (Clethra), Virginia Sweetspire (Itea), Weigela, Wormwood (Artemesia), Yew (Taxus).

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New Pesticide Registrations for Ornamentals Supported by IR-4

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- Clopyralid - Boxwood, Flowering Dogwood, Juniper, Potentilla (Cinquefoil), Plane Tree (Platanus), Spirea, Sycamore
- Cyromazine - Lobelia
- Deltamethrin - African Violet, Ageratum, Azalea (Rhododendron), Balsam (Impatiens), Begonia, Carnation, Chrysanthemum, Dumb Cane (Dieffenbachia), English Ivy, Fern (Polypodium), Gardenia, Geranium, Hibiscus, Hydrangea, Madwort (Alyssum), Pansy, Periwinkle, Persian Violet, Pinks (Dianthus), Poinsettia, Scarlet Sage (Salvia), Shasta Daisy (Chrysanthemum), Shrub Verbena (Lantana), Transvaal Daisy (Gerbera), Umbrella Tree (Schefflera), Vervain (verbena).
- Ferbam - Carnation, Tulip.
- Mancozeb - Crape Myrtle.
- Oryzalin - Southern Magnolia.
- Pyridaben - Ageratum, Arborvitae, Barberry (Berberis), Bolton Aster (Boltonia), Boxwood, Elm, English Ivy, Elephants Ear (Cladium), Fir (Abies), Firethorn (Pyracantha), Geranium, Holly (Ilex), Japanese Aster, Juniper, Lily, Magnolia, Mock Orange (Philadelphus), Pansy (Viola), Pear (Non-Bearing), Periwinkle (Vinca), Pinks (Dianthus), Primrose, Purple Wintercreeper (Euonymus), Rhododendron, Rose, Rose Mallow (Hibiscus), Vervain (Verbena)
- Spinosad - Winged Euonymus, Rose
- Uniconazole - Coleus

Ornamentals Uses Presentations

- During the joint meeting of the Northeast and Western Forest Nurseryman Meeting at Ames, Iowa (July 12-16, 1999), Ray Frank presented a paper entitled "What is the IR-4 Program and How it Benefits Nurseries". It will be published in a formal proceedings.
- Ray attended the Southern Nursery Association (SNA) Research Conference in Atlanta, Georgia (July 28-August 1, 1999) and presented a paper entitled "IR-4 Research for Pest Control in Nursery Crops - 1998". This paper will be published in the Annual Research Conference Proceedings. While at SNA, he attended the Nursery Convention and spoke to a large number of nursery growers one-on-one.
- Ray also attended the Tan-Misslark Trade Show in Dallas, Texas (August 4-8, 1999), as an invited speaker for a preshow Nursery Industry Education Seminar (Texas Nursery and Landscape Association). The paper was entitled "IR-4 Ornamentals Pest Control Registration Program and How it Helps the Grower". He spoke to many nursery growers one-on-one. In August (August 1, 1999) the *American Nurseryman Magazine* published an article authored by J. Ray Frank, entitled "Seeking Approval" which discussed the successes of the IR-4 Ornamentals Research Program for the U.S. nursery industry.

Article by Editor and J. Ray Frank

IR-4 Ornamentals Workshop

Final preparations are now underway for the IR-4 Ornamentals Workshop to be held in Portland, Oregon during October 18-21, 1999. A report will be published in the next Newsletter.

QA Focus - Qualifications & Training

(16th in a series of QA updates)

In past Focus articles, we have addressed the need for training of personnel. This feature will be specific to QA personnel. In October (11-15), the Society of Quality Assurance (SQA) will hold its annual meeting in Chicago, IL. We at HQ are especially pleased to see a greater emphasis on QA issues related to field research programs.

Our SQA Annual Meeting is known for its rigorous agenda. Sessions begin promptly at 8:30 a.m. and run through late afternoon. However, there are also business & committee meetings, focus group sessions, and regional Chapter meetings that occur "off the grid" (scheduled after the full day's program). These sessions sometimes run past 9 p.m. Tammy White is involved in the SQA's National Education Committee, and Kathryn Hackett-Fields is involved with the Professional Certification Task Force. Involvement takes our time and effort, but serves to enhance our effectiveness as QA auditors, as resources to IR-4 professionals, and also keeps our Project's GLP program "visible."

This year's topics include: Auditing Field Studies, Tips for Training, Electronic Issues: Records & Signatures, Archiving, Current Issues in Field Studies, and our favorite, "The AgChem Power Hour (and a half)". You can see by this small portion of the meeting's schedule, that our attendance will be important for IR-4. We will gain practical knowledge on

Computer Validation issues, and auditing Analytical Chemistry. Other features of the meeting include a resource room, and a poster session, in which we will be a participant.

Our poster will display a synopsis of lessons learned from the large number of EPA audits of IR-4 field and lab sites to-date. We have a large number of audits because of the large number of IR-4 petitions submitted to EPA. The poster will show some of the ways we have responded to EPA findings and suggestions, such as implementing new training programs IR-4 has conducted, and the revision of field notebooks.

Finally, this meeting allows us to network and compare notes with other auditors engaged in our area of expertise, and to hear a keynote speaker, Dr. Seth Shostak of SETI Institute. What, you may wonder, does the Search for Extraterrestrial Intelligence have to do with QA? We will have to fill you in on that one, because our keynote speakers tend to wrestle with challenging topics, but you can be sure that if sophisticated digital receivers on telescopes can be calibrated, we will find a way to do the same with our airblast sprayers! So, wish us well in October as we settle for some earthly intelligence to enhance our QA skills in the Windy City. We will summarize the meeting's impact on IR-4 in our next Focus.

Article by Editor and Kathryn Hackett-Fields

IR-4 National Outreach Specialist/Communications Report

IR-4 will have a presence at the American Farm Bureau Federation Convention in Houston, Texas during January 9-11, 2000. A one-on-one poster presentation titled, "IR-4 Helps Minor Crops Survive FQPA", will provide the opportunity for direct interaction with over 5,000 farmers and ranchers representing every state in the U.S. The abstract for the poster (which was restricted to one hundred words) is as follows: "The Interregional Research Project Number 4 (IR-4) develops data to register pest control agents for use on minor crops. Minor crops make up nearly half of all US crop sales. Growers, commodity groups, researchers and others help IR-4 identify pest control product gaps. As FQPA threatens the availability and use of many key pesticides, efforts are expanding to register reduced risk and biologically-based pesticides essential to Integrated Pest Management systems. The goal of IR-4 is to insure that minor crop producers have an adequate number of pest control products to competitively produce safe and wholesome agricultural products".

A slide set about the workings of IR-4 and its response to FQPA was prepared for delivery at the July, 1999 XIVth

International Plant Protection Congress, Jerusalem, Israel by Dr. Robert Hollingworth. He noted that the presentation was well attended with lively interest in the methods that IR-4 uses to accomplish its goals. The slide set was converted to a poster format for display at the Food Use Workshop in Denver, CO.

J. Ray Frank had a 4-page article published in the August 1, 1999 *American Nurseryman* magazine. The title is "Seeking Approval: A Government-Supported Program Helps Foster Pesticide Label Registration And Expansion For The Nursery Industry". The article was illustrated with Ray's slides and included a list of ornamental pesticides now registered as part of IR-4's program. Also included was a list of pesticides on which IR-4 research is being conducted for possible future ornamental registrations.

At the time of this writing there are several other projects in the works: a brief on IR-4 for use by Congressional aides, an article on IR-4 and FQPA for grower publications and an introductory slide set explaining what IR-4 is and how it works. More information on these projects will be included in the next Newsletter.

Article by Sandy Perry

Update - IR-4 Methyl Bromide Alternatives Programs for Strawberries and Tomatoes

New Treatments Added

New treatments have been added to IR-4's methyl bromide alternatives programs for strawberries and tomatoes. The treatments include two (2) rates of methyl iodide (MI) plus chloropicrin and a single rate of methyl iodide alone. Also added to one of IR-4's strawberry trials (Oxnard site) is a single treatment involving DiTera ES Biological Nematicide. This product is a specific nematicide and will be used in combination with chloropicrin for control of soilborne diseases and metam sodium for weed control.

Rates of MI and methods of application are a 1X rate of a 67:33 ratio of MI + chloropicrin at 350 pounds product per acre (235/lbs. /acre MI + 115 lbs./acre chloropicrin). An approximately 1/2 X rate of MI will be used by applying a product formulated in a 50:50 ratio of MI + chloropicrin. This treatment will use 117 lbs./acre MI and 117 lbs./acre chloropicrin. MI will also be used alone at 117 lbs./acre. All MI treatments will be bed-fume applied during the bed listing-shaping process by shanking -in to a depth of 10-12 inches (shanks spaced 10" apart). All MI treatments are to be evaluated in direct comparison to the standard full use rate of methyl bromide (67:33) at 350 lbs./acre.

DiTera ES Biological Nematicide will be used at 8 gallon product per acre via drip irrigation at least 14 days prior to transplanting. It will also be applied via drip irrigation at 5

gallon product per acre 2-5 days post-transplanting. The DiTera ES treatments are to follow metam sodium (42% a.i.) applied at 37.5 gallons product per acre over bed tops immediately prior to laying the plastic mulch and 7-10 days prior to a preplant drip applied treatment of chloropicrin at 200 lbs. per acre.

We are very pleased with the support of Abbott Laboratories by bringing DiTera ES Biological Nematicide into IR-4's program and for the support of Tomen Agro for including methyl iodide. Both products add interesting and potentially important new dimensions to the spectrum of pests controlled in this critically important program for U.S. strawberry and tomato producers.

New Members of Advisory Board

We are pleased to announce the addition of two new members to IR-4's Methyl Bromide Alternatives Program. They are Dr. Husein Ajwa, USDA ARS, Fresno, California and Dr. Frank Sances, Alliance for Alternative Agriculture, San Luis Obispo, California. Dr. Ajwa has already provided significant input into the planning of IR-4's strawberry program and we sincerely thank him for his help. We look forward to the help that Dr. Sances can provide through his extensive experience and knowledge of California agriculture and even more specifically with his experience in methyl bromide alternative research programs.

Article by Jack Norton

The EPA/IR-4 Technical Working Group

The most recent of a series of meetings between the IR-4 Headquarters scientists and key scientists from the Environmental Protection Agency (EPA), intended to produce a more efficient system of IR-4 data submission and EPA review, was held on 14 September 1999, in Crystal City, Virginia. Participants from the EPA included Hoyt Jamerson, Bernie Schneider, Jeff Herndon, Sidney Jackson, Jim Jones, Shaja Brothers, Margaret Stasikowski, Rob Forrest, Clark Swentzel, Donna Davis, Karen Whitby, and Will Donovan. Additional attendees included Paul Schwartz (USDA-ARS), Willis Wheeler (IR-4 Liaison to EPA-OPP) and Doug Rothwell (Health Canada).

The agenda included a status report on EPA's FY 1999 workplan (regarding the review of pesticide use petitions) and a discussion of the FY 2000 workplan. Specifically discussed were the petitions that IR-4 plans to submit during the next 12 months, as well as a report from Canada on IR-4/

PMRA cooperative review projects. The results of IR-4's recent Food Use Workshop, in which potential studies for 2000 were prioritized, were also discussed. EPA personnel will provide their thoughts on the new compounds with which IR-4 plans to work in advance of the National Research Planning Meeting (October 26-27).

Next came a discussion of NAFTA cooperative residue data development with Canada and Mexico. Mexico is looking to begin a pesticide residue program similar to the IR-4 Project.

The group was brought up-to-date on the status of special projects begun at previous working group meetings, including studies involving spinosad, azoxystrobin, glyphosate, imidacloprid, methyl bromide, and ant bait stations.

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The EPA/IR-4 Technical Working Group

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The EPA scientists listened to a request from IR-4 that the Study Director be contacted to discuss problems noted during petition review at EPA, prior to finalizing the Agency's decision on the submission. The Agency personnel felt that it would be more appropriate for IR-4 to discuss mitigating factors in the petition when problems are noted, and that appeals of EPA decisions would receive proper consideration.

After lunch, new proposals were brought up for discussion, including a reduced residue data set for methoxyfenozide and non-food classification for several zinc phosphide and hydrogen cyanamide uses. No decisions were made on these proposals at this meeting; the appropriate IR-4 study directors will follow-up with EPA.

Next was an update on the status of crop group proposals. The proposed changes are the placement of culinary herbs and beet tops in crop group #4 and turnip tops in crop group #5.

Following this was a discussion about a standard time period (3 years) for the submission of additional residue field trials required by EPA after their review of submitted data.

The meeting finished with a discussion of transgenic herbicide-tolerant crops and variety requirements, a review of EPA/Codex tolerance vocabularies, an invitation to the Agency personnel to attend the IR-4 Annual Meeting and Symposium October 5-7, and an agreement to meet again at IR-4 Headquarters, most likely in late January, 2000.

Article by Ken Samoil

Meet Your New Study Director

Van Starner recently joined IR-4 Project Headquarters staff as an Associate Coordinator in Entomology/Plant Pathology. He came to IR-4 from Novartis Crop Protection, Inc., in Greensboro, NC, where he was Product Development Manager within the fungicide business unit. Van's primary responsibilities included leading development teams for all fungicide products, maintaining regulatory progress to meet registration targets, compiling reduced risk rationales, coordinating annual development budgets and product portfolio updates, and securing import tolerances in key countries. Prior to his two years at Novartis, Van was Associate Director in Agricultural Research and Development, International, at Merck and Co., Inc., in Three Bridges, NJ, for seven years. At Merck he coordinated all R&D aspects for the avermectins (abamectin, emamectin benzoate) outside the US and Canada. His primary focuses were efficacy and GLP residue programs in Europe and Mexico; R&D and regulatory responsibilities in Australia, Latin America, and Southeast Asia; and obtaining the first emamectin benzoate registration in 1997, in Japan, through two Japanese partner companies. Van has also worked as Director of Research for a GLP-compliant field contract company and as a consultant with a fertilizer company, both in Pennsylvania; and as a Technical Supervisor in field development at the former Pennwalt Corporation in the mid-Atlantic and mid-west areas. In addition, Van has extensive "on-the-farm" experience gained by growing up working on family/neighbor fruit and vegetable farms in south central PA. He earned his MS in Entomology at Penn State under Dr. Larry Hull and his Ph.D. in Entomology at Rutgers under the direction of Dr. Fred Swift. Please join us in welcoming Van to IR-4 by contacting him at (732) 932-9575 ext. 621, e-mail starner@aesop.rutgers.edu.

Article by Editor and Van Starner

Oilseed Crops Update - Help from our Canadian Friends

The IR-4 Project is always searching for more efficient ways to aid our minor crop growers in obtaining the tools they need. Through cooperation with Doug Rothwell of PMRA/Health Canada, we are trying to harmonize our pesticide registrations and cooperate on developing data that are useful to both countries. We are currently collecting data created in Canada that have supported current labels there for use in supporting tolerance petitions in the U.S. This is especially true for the oilseed crops such as flax, sunflower and safflower.

Crop groups are an organization of crops with similar physiology, morphology, and use patterns. By creating crop groups, representative crops (which are the most widely grown crops of a group) are used to represent all the crops within a group. Therefore, residue studies are only needed on the representative crops to obtain tolerances on all crops within the group. We are in the process of developing a crop group definition for oilseed crops. Currently, oilseed crops including Ben moringa seed, Borage, Buffalo Gourd, Castor Oil Plant, Coconut, Cottonseed, Crambe, Cuphea, Safflower, Sunflower, Mustard oil, Canola, Flax, Sesame, etc. are all miscellaneous crops and each one needs to have a residue study to establish a tolerance. In Canada, an oilseed crop group already exists, so that Rapeseed and Sunflower also represent Indian Rapeseed, Indian Mustard Seed, Field Mustard Seed, Flax and Safflower.

Article by Michael Braverman

Bifenthrin Registered on Minor Crops

Bifenthrin, a synthetic pyrethroid insecticide produced by FMC Corporation and marketed as Capture®, Brigade®, and Talstar®, has recently been registered on Brassica vegetables (cabbage, broccoli, cauliflower, etc.), cucurbits, edible-podded legumes, succulent shelled peas and beans, globe artichoke, canola, and sweet corn. Data to support all of the tolerances for the above registrations, except for the sweet corn, was generated by the IR-4 Project. These submissions received high priority for review at EPA because many of the proposed uses were classified as organophosphate (OP) alternatives.

In addition, the IR-4 Project has recently submitted petitions proposing tolerances for this compound on head

lettuce, bell and non-bell pepper, and the caneberry crop subgroup (raspberries, et al.). Within the next two years, IR-4 plans to submit petitions proposing tolerances for bifenthrin on the herb crop subgroup (for registration of Talstar® applied in potting soil), and for celery, spinach, and mustard greens (field applications of Capture®). New residue studies for additional bifenthrin uses will begin in 2000.

The cooperation of FMC and the support from grower/processor groups has been an important key to the success of these studies. IR-4 will continue to work closely with FMC and other registrants, as well as with growers and processors and the EPA, to maximize the selection of pest management tools available to the growers of minor crops.

Article by Ken Samoil

IR-4 in Puerto Rico

IR-4 Headquarters was represented at the Fourth International Caribbean Conference of Entomology in conjunction with the Eighty-Second Annual Meeting of the Florida Entomological Society, San Juan, Puerto Rico, July 26-29, 1999. I presented a poster entitled “The IR-4 Project, a national agricultural program to clear pest control agents for minor crops in the U.S.” The poster generated several newsletter subscription requests and discussion with several attendees about the IR-4 Project and the new tropical crop groups. (A modified version of this poster will be on display during November 1999, at the main office of Rutgers Cooperative Extension, Martin Hall, Cook College, Rutgers University, New Brunswick, New Jersey.) Symposia attended included “Curculionids of the Caribbean” and “Sweetpotato Insect Management”.

On Friday, July 30, I was escorted by IR-4 cooperator Dr. Rafael Ingles on a tour of the agriculture of Puerto Rico (north of the mid-island mountain range). The most widely grown crops on the island are sweetpotato, yams, taniens, and plantains. Also widely grown are citrus fruits, pineapples, coffee, and sugar cane. The first stop on the tour was at a pineapple field, near Vega Baja, west of San Juan. Dr. Ingles showed me the effect of infestation by the gummosis moth on pineapples. Feeding by the caterpillar causes the fruit to exude a gummy substance that discourages the insect but also negatively impacts the marketability of the

pineapple. A tebufenozide performance trial is underway. Next we went to a mixed planting of crops within another pineapple field, also near Vega Baja. The collection included sugar cane, pigeon peas, guava, and cassava. We then drove up into the foothills to the University of Puerto Rico agricultural research station at Corazol, the site of the plots for the IR-4 fipronil/plantain residue study. Also seen at this station were various citrus trees, neem trees (from which is extracted a biological insecticide), an experimental plot of carambolas (starfruits, which are not currently grown commercially on this island), and yams. After lunch, we continued west to the University of Puerto Rico agricultural research station at Isabela. We looked at sapodilla trees, mature neem trees, and a cassava plot badly infested by mites and thrips. Dr. Ingles and Dr. Edwin Abreu (who works at this station) requested information on new acaricides, which I subsequently e-mailed to them from IR-4 HQ. The tour was concluded by returning to San Juan via Mayaguez and Ponce, thus nearly circumnavigating the island.

Attending this meeting was an effective way to present information on the IR-4 Project to research entomologists from Puerto Rico, Florida, and other locations in the southeastern U.S. and other countries in the Caribbean region. With the creation of tropical crop groups, and the breakdown of trade barriers, IR-4 is likely to conduct an increased number of tropical crop studies in the near future.

Article by Ken Samoil

The 1999 American Phytopathological Society (APS) Joint Meeting with the Canadian Phytopathological Society (CPS) in Montreal, Canada from August 6-11: Crop Group Review

The meeting started with committee meetings on Saturday evening. Dave Thompson was the chair of the Chemical Control committee and convened this committee meeting.

On Sunday, there were two sessions to discuss Fungicide Management Program Evaluation and Needs. One of the sessions was held in the regular Small Fruit Workers meeting, where the strawberry fungicide program was discussed. In the Deciduous Tree Fruit Workers regular meeting, the apple fungicide program was discussed. Both of these sessions were well attended and it was decided to discuss blueberry fungicide management and stone fruit fungicide management in the respective groups at the 2000 APS meeting. These sessions utilized two tables that compared fungicide disease control on all diseases of these crops. Table 1 evaluated registered fungicides and table 2 evaluated not yet registered fungicides, i.e., new chemistry.

On Monday, the morning session had a number of paper presentations on chemical disease control in a variety of crops. Abstracts are available in the meeting abstract booklet. If you would like to see any of them, contact Dave Thompson at IR-4 HQ.

On Monday afternoon, two fungicide program evaluation sessions were held. These included bulb vegetables and leafy brassica vegetables. The bulb vegetable session had about 6 attendees, but 4 of the attendees were the main

researchers in the U.S. Two additional significant players in this crop area were unable to attend the APS meeting, but their comments were received.

On Tuesday morning, two fungicide program evaluation sessions were held. These included cucurbit vegetables and leafy vegetables. The cucurbit session had about 15 attendees and a substantial discussion of present uses occurred. In the leafy vegetables session there were only 2 people and only a brief discussion occurred, additional review will be necessary.

Dave Thompson organized and moderated a symposium on Harmonization of Pesticide Registration on Tuesday afternoon. The session had about 100 attendees in the chemical half of the program and about 150 people in the biological half of the program. Bob Holm opened the session with the IR-4 story and how we are involved in working with other countries. The U.S. and Canada seem to be the most advanced in harmonization, especially in the realm of biologicals. The European chemical pesticide harmonization is coming along; however, it appears to be a complicated system. Registration of biological pesticides in the EU seems to be still in the "education of regulators" phase. It was repeatedly stated that there are few biologists on the review committees and most questions raised were appropriate for chemical registrations and not biologicals.

Article by Editor and Dave Thompson

Herbicide Projects Update

The IR-4 HQ staff responsible for a majority of the herbicide projects are M. Arsenovic, M. Braverman, and F. Salzman. Although new to IR-4, they are settling in and significant progress has been made in submitting herbicide petitions to the EPA. The new personnel, along with W. Biehn, J. Corley, D. Kunkel, and D. Thompson, have recently prepared petitions for sethoxydim/pistachio and celery; paraquat/endive, persimmon, artichoke, and dry pea; glyphosate/dry bean and dry pea (for use as a desiccant); sethoxydim/safflower, pyridate/mint; clomazone/cucumber group (includes squash and melons); metolachlor/carrot (muck soils), asparagus, Swiss chard, grass for seed, pepper (bell and non-bell), rhubarb, tomato, and spinach; and clopyralid/head and stem Brassica sp. Of special interest is a petition for the use of glyphosate on many food commodities prepared by M.

Braverman. This petition updates some of the current tolerances and includes major additions for use including prickly pear cactus, the herb and spice group, and miscellaneous tropical fruits. All of these petitions have been submitted to the EPA, and are currently scheduled for first or second quarter review.

Petitions that are actively being prepared for review by the EPA in the next 12 months include: clethodim/strawberry, celery, root vegetable subgroup, cucurbit vegetable group, cranberry, clover, and rhubarb; pendimethalin/pepper (bell and non-bell), mint, and tree nuts; halosulfuron/squash and cucumber subgroup; clopyralid/strawberry; and imazamox/legume vegetables (succulent and dried) group.

Article by Editor and Fred Salzman

WSSA “Herbicide for Minor Use Committee”/IR-4 Project Initiatives: Herbicide Screening Program in Minor Crops

As a result of the FQPA, the IR-4 Project has taken a new approach to working with new pesticides. In the past, tolerances/registrations for new compounds would be obtained on major crops such as soybeans and corn by industry, then these pesticides were moved into the IR-4 program for residue analyses on minor crops. Several important herbicides for use in minor crops are slated for reassessment under FQPA. It is expected that some of these uses for minor crops maybe canceled. The product review deadlines mandated in the FQPA, and the impending loss of older products, necessitate evaluation and development of new materials for minor crops simultaneous with their development and registration on major crops.

Over the last several years the agricultural chemical industry has developed a range of new herbicide chemistries with lower environmental and health risks which should be rapidly made available to minor crop growers. Many of them offer great promise to fill the weed management voids expected from the potential cancellation of herbicide uses associated with the FQPA. In most cases, the usefulness of these new herbicides in minor crops is still unknown. Submission of Pesticide Clearance Requests without well-tested phytotoxicity data may result in delays in registration of new herbicides as many chemical manufacturers require crop tolerance data prior to registration. Therefore, researchers are encouraged to explore the tolerance of minor crops to new chemistries in advance of registration on the major crops. Although this is being done to some extent on the local level, there is a need for more involvement and better coordination of these programs across the United States to obtain valuable preliminary performance data on a wide range of environmental and soil conditions.

To address this issue members of the WSSA Herbicides for Minor Uses Committee and IR-4 organized a meeting of weed scientists during the USDA/IR-4 Food Use Workshop that was held in Denver, Colorado this past August. There was a general discussion among weed scientists about on-going herbicide screening program, future needs, the most vulnerable crops, potential uses of old and new chemistry, and how to better coordinate a screening program and pursue various funding opportunities.

All participants agreed that there is a need for more coordination in order to obtain valuable information on potential uses of new chemistry and reduced risk herbicides, as well as, new uses of old herbicides, prior to the decision making process for field residue trials. Information on crop tolerances and weed efficacy in minor crops will be used to speed the process of herbicide registration for the most vulnerable crops. However, currently, there is little funding and effort to do widespread screening of the new herbicides.

Weed scientists at the meeting enthusiastically supported IR-4 initiatives and efforts to be more involved in a nationwide herbicide screening program. Marija Arsenovic at IR-4 Headquarters will coordinate the program in minor crops and collect data from researchers already involved. The data will be collected, compiled and prepared in tables and provided for discussions at the next WSSA Herbicides For Minor Crops Committee Meeting scheduled for February of 2000 (at the National WSSA meeting). If you have data that would support herbicide registrations on minor crops or would like more information regarding this program please contact Marija Arsenovic at 732/932-9575 ext. 609 or e-mail her at arsenovic@aesop.rutgers.edu.

Article by Marija Arsenovic and David Monks

Call for Newsletter Articles - Schedule

Issue	Call for Articles	Articles Due COB*
30:4	2DEC99 (Thursday)	9DEC99 (Thursday)

* Close of Business 1630, Eastern Time

Next Newsletter

- Risk Assessment and OPs - Progress!
- Holiday Greetings and the Millennium Celebration Issue with the New IR-4 Reporting
- Awards

Herbicide News: 11th EWRS (European Weed Research Society) Symposium, Basel, 1999

The 11th European Weed Research Society Symposium was held in Basel, Switzerland, June 28 to July 1, 1999. The Symposium provided a forum for scientists to present their work on a broad range of weed science topics. More than 200 weed scientists participated in the Symposium. Attendees were from Europe, Australia, China, Africa and the USA. The Symposium was organized in six sessions and several workshops.

The six sessions included Weed Biology, Weed Ecology, Biological Weed Control, Physical and Cultural Weed Control, Herbicide Behavior in Soil and Water, and Chemical Weed Control. The sessions included many excellent papers especially one that addressed the future trends of natural products as a source of new herbicides.

Several workshops were scheduled during the Symposium: Field Margin Interactions, Crop/Weed Interactions, Weed Seedbanks, Weed Management in Orchards and Weed Management Systems in Vegetables.

“Weed Management Systems in Vegetables” workshop. A working group (WG) was established to improve integrated and organic weed management in vegetables. The purpose of the working group are for - collecting and disseminating information and results on weeds and weed control strategies in vegetables; identifying gaps in knowl-

edge; focusing on new research projects; and encouraging collaborative research programs. The results of the WG are published on the Web for use by researchers, crop extension services, farmers and policy makers in all European countries. Members of the WG are scientists from 20 European countries and 2 from United States. The Working Group leader and Newsletter editor is Dr. Francesko Tei, University of Perugia, Italy.

This year’s meeting agenda focused on weeds and weed management in tomatoes and onions; next year’s topic is on weed management in carrots. Also, discussion was initiated on developing more joint research projects (similar to ongoing cooperative research project with IR-4 and Germany) to support minor crop herbicides registrations in different European countries and the United States that will benefit both parties. The idea was well received. Another project was proposed and discussed which concerned the current status of herbicides in minor crops in different countries. Working group members agreed to exchange information. Please contact Marija Arsenovic (732-932-9575 ext. 609) for more details.

Overall, working group members concluded that there is a need for better coordination and information flow among weed scientists in Europe and other parts of the world, especially the United States.

Article by Marija Arsenovic

1999 IR-4 Service Awards

At the 1999 IR-4 Annual Meeting in Washington, DC, service awards were presented as follows:

Meritorious Service Award

- J. Ray Frank of IR-4 for outstanding management of the National Ornamentals Program.
- Bernard A. Schneider of US EPA for outstanding leadership and expertise in crop groupings, standardize vocabulary and international harmonization.
- Alvin M. Simmons of USDA-ARS for outstanding contributions for field trials.
- Christine Vandervoort of Michigan State University for dedication in promoting GLP’s.
- Inga-Mai Larsson-Kovach of Cornell University for exceptional performance in laboratory improvement.
- Peter B. Schultz of Virginia Tech for success in developing registration data for the plant industry.
- Robert McReynolds of Oregon State University for meritorious service in conducting field trials and supporting IR-4.

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