



The IR-4 Project

50 Years of Supporting Pest Control Products for Specialty Crops & Minor Uses

**Dr. Jerry Baron
Executive Director
The IR-4 Project**



G. Hamilton, Rutgers



Photo: Martin Hauser







Buckeyes
0

Buurma
Farms
Greens

Buurma
Farms
Greens



The IR-4 Project

- The IR-4 Project was established in 1963 by the Directors of the State Agricultural Experiment Stations (SAES) and the United States Department of Agriculture (USDA) to provide a solution to the “Minor Use Problem”.



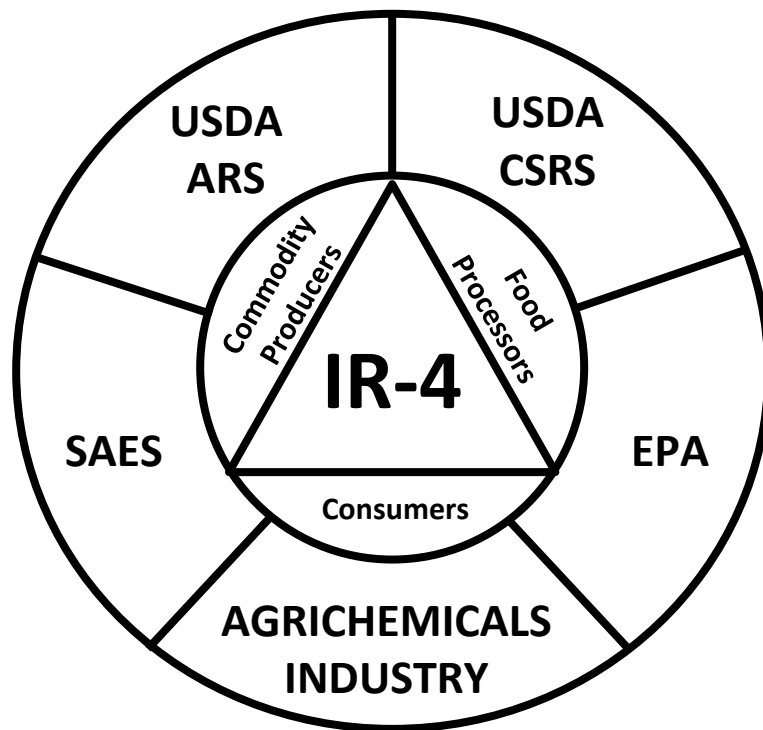
Dr. Charles
Compton
1963 - 1977



Professor G
Markle

Mission

To facilitate registration of sustainable pest management technology for specialty crops and minor uses



Specialty Crops Include:



Most: Vegetables

Fruits

Nuts

Herbs

Spices

Floral

Nursery

Landscape

Christmas trees



Other Crop Customers

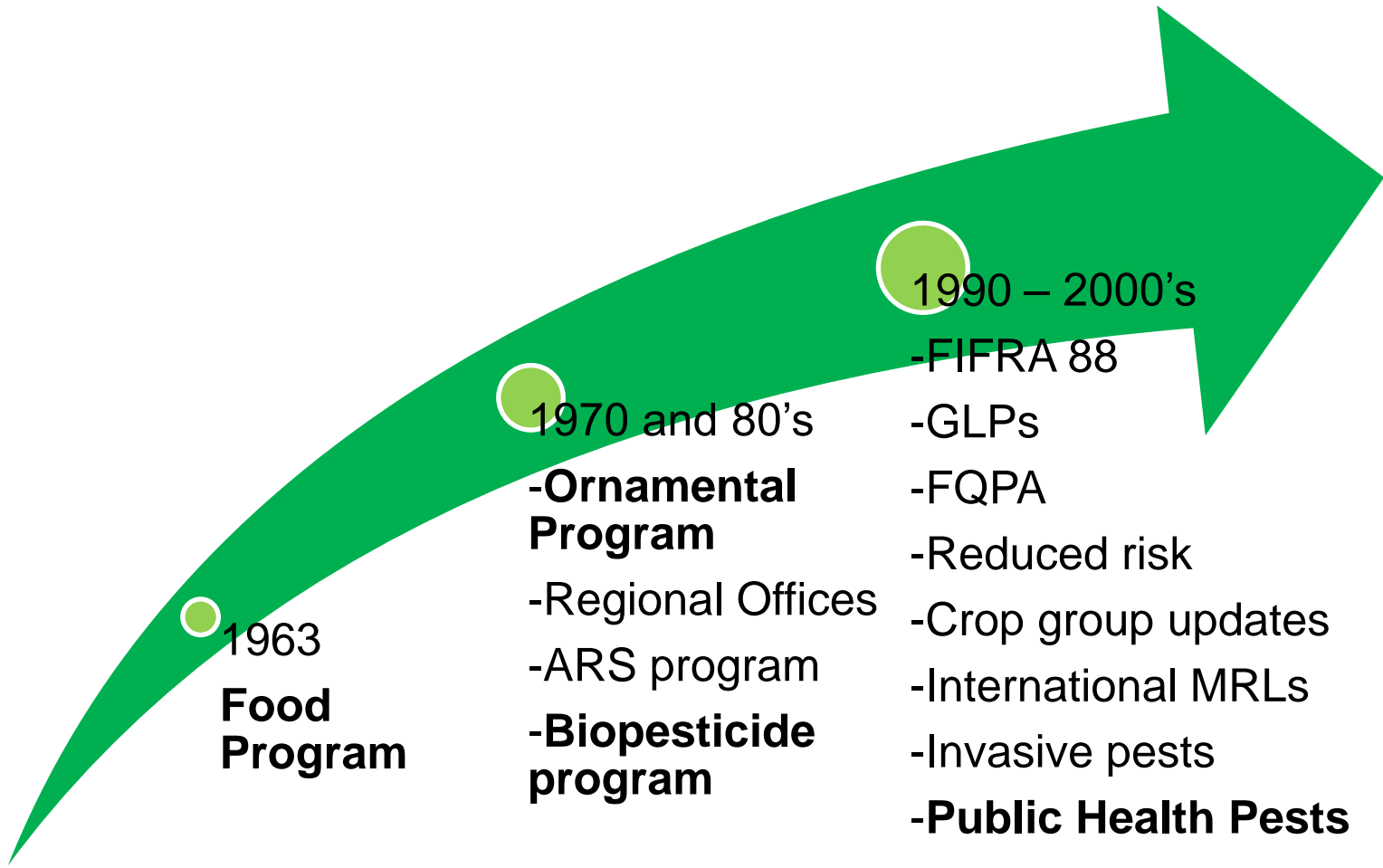
Minor Uses on Major Crops

Corn, Soybean, Cotton, Rice, Turf, Forestry

Crops for Processing

Sweet corn, tomato products, legumes, etc.,

Enhanced Activities





The IR-4 Project: Milestones

Early years, very little personnel and financial resources – Beg, Borrow & Steal





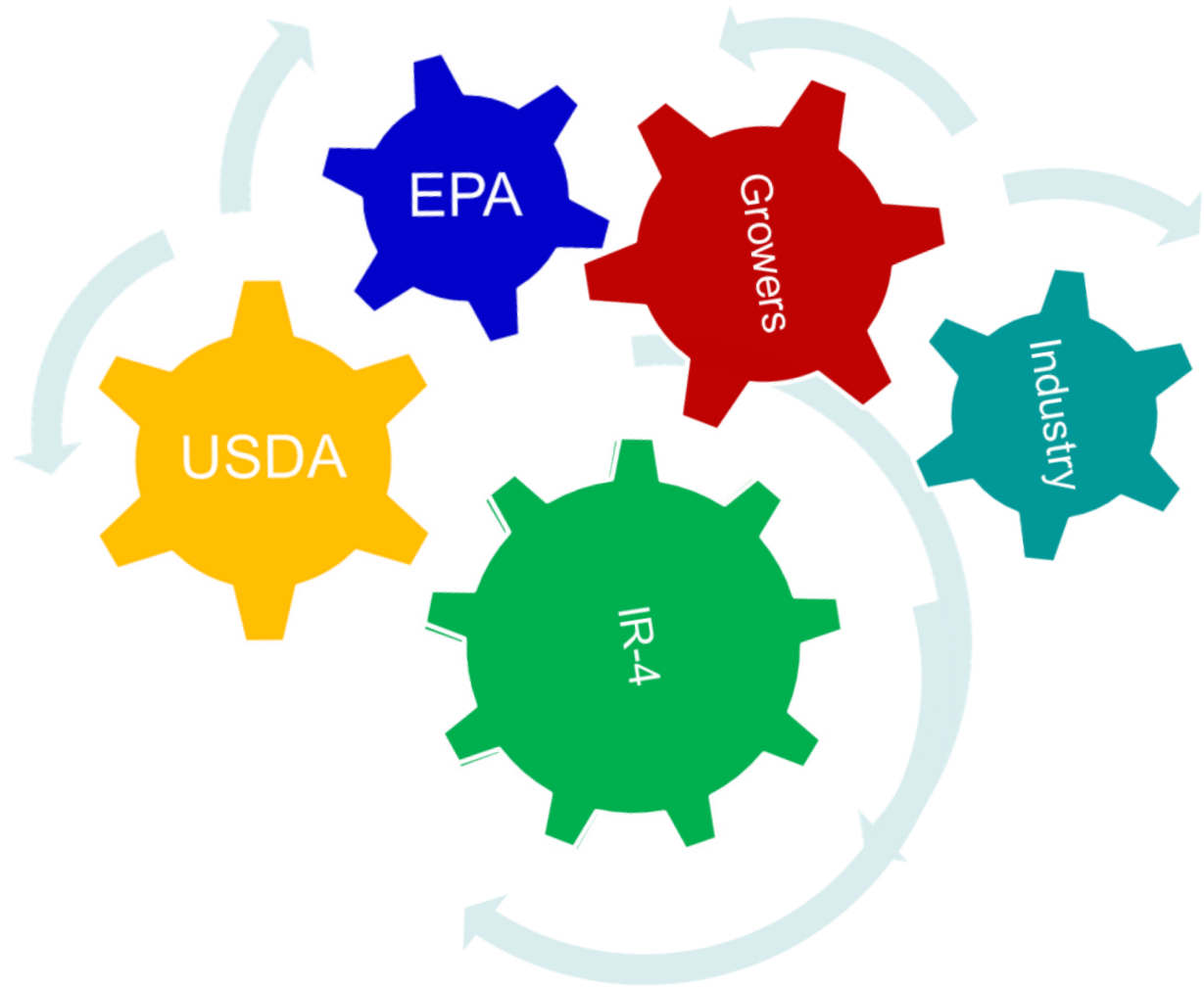
The IR-4 Project: Milestones

Early years, very little personnel and financial resources –
Beg, Borrow & Steal

**Established four Regional
Laboratories in 1975 through Land
Grant University System with 1st
major CSREES funding (\$250,000)**

**USDA-ARS established companion
Minor Use Program in 1976**

All the moving parts





IR-4 Organization

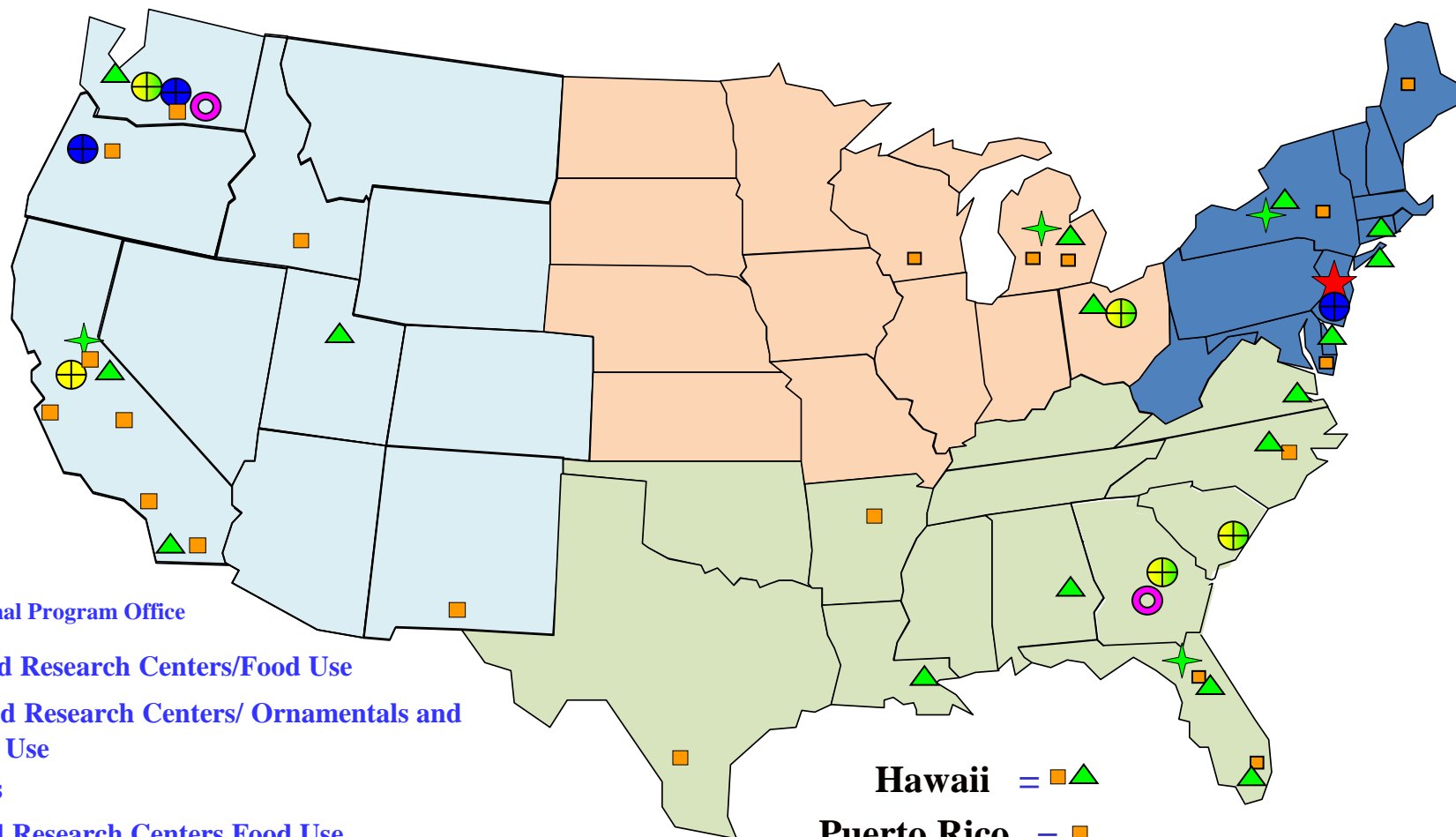
Many Independent Units Working Together

- State Liaison Representatives**
- Field Research Centers/Cooperators**
- Four Regional Offices/Three Analytical Labs**
- USDA-ARS Program**
- IR-4 Project Headquarters**




Project Management Committee

“Board of Directors”

IR-4 Infrastructure



-  IR-4 HQ
-  IR-4 Regional Program Office

-  State Field Research Centers/Food Use
-  State Field Research Centers/ Ornamentals and Non-food Use
-  ARS Labs

-  ARS Field Research Centers Food Use
-  ARS Field Research Centers Ornamental
-  ARS Field Research Centers Ornamental and Food Use

Hawaii =  

Puerto Rico = 

The Regulatory Clearance Process

Stakeholder:
 Define Pest Problem
 Identify Pest Management Solution
 Request Assistance from IR-4



The Process Starts with Requests
 Submitted from:

- Growers,
- Grower Groups,
- State/Federal Research & Extension Personnel

Request Reviewed by Manufacturer

Requests Prioritized

Top Priority Researched That Year
 Second Priorities Researched as Money Allows

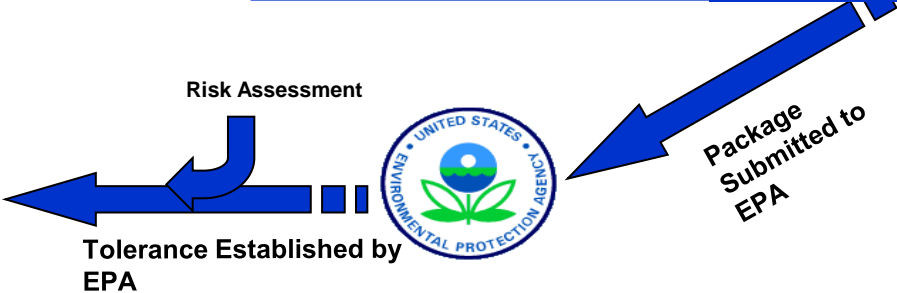


Field and Lab Research
 • Measure Residue levels in Crop/Crop Group



Manufacturer Adds Crop to the Product Label

Risk Assessment





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USDA-ARS established companion Minor Use Program in
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**Ornamental Horticulture Program
added in 1977**

IR-4 Ornamental Hort. Program

- 10% of the Project's efforts and resources
- Predominantly crop safety testing and efficacy, including invasive pests





The IR-4 Project: Milestones

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Beg, Borrow & Steel

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USDA-ARS established companion Minor Use Program in
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Ornamental Horticulture Program added in 1977

Biopesticide Program added in 1982

Biopesticide & Organic Support Program

- 10% of the Project's efforts and resources
- Registration support and grants program for efficacy data
- Focus work with integration of biopesticide into conventional systems
- Support for organic markets
- Plant incorporated protectants





The IR-4 Project: Milestones – cont.

**After FIFRA 88, IR-4 initiated
Reregistration Defense Program -
Goal of 1000 minor uses supported
with 700 actual uses “saved”**



The IR-4 Project: Milestones – cont.

After FIFRA 88, IR-4 initiated Reregistration Defense Program
-Goal of 1000 minor uses supported with 700 actual
uses “saved”

**EPA extended Good Laboratory
Practice regulations to residue
studies in 1989 - IR-4 Restructured;
strong National HQ/dedicated
laboratories/field research centers**



The IR-4 Project: Milestones – cont.

After FIFRA 88, IR-4 initiated Reregistration Defense Program
-Goal of 1000 minor uses supported with 700 actual
uses “saved”

Established a GLP Program in 1989

**Established Commodity Liaison
Committee (CLC) in 1991**

Commodity Liaison Committee/MCFA

- **Passionate in their “Ownership” of IR-4**
- **Provide direct input to:**
 - **Project Management Committee (CLC chair is voting member)**
 - **Workshops – Food Use and Ornamental**
- **Provide key interface with House & Senate Members**
 - **Maintained/increased IR-4 funding in tight times**

The **IR.4** Project

A Proven Program

Annual IR-4 Funding (FY 2010)

Direct Support	
USDA-NIFA (Improved Pest Management*)	\$12,180,000
USDA-ARS	\$ 4,000,000
USDA-FAS (TASC Grant)	\$ 500,000
USDA-APHIS (Invasive Species)	\$ 172,000
Hatch Grant (Multi State Research)	\$ 483,183
Dept. of Defense/USDA-ARS (Public Health)	\$ 250,000
Industry Grants	\$ 1,100,000
Over \$18 million direct	
In-Kind Support	
Land Grant	
State Agriculture	
Crop Protection	
Regulatory Administration	
Agriculture and Ag-Food Canada	
Indirect costs	

*IR-4 is one of several programs within U.S. Department of Agriculture

Proven

Nearly **13,000** new uses

Contributing **\$7 billion** in sales

ROI = almost 200

A man in a dark suit and red tie is speaking at a wooden podium. He is holding a white mug and a small piece of paper. A microphone is positioned in front of him.

The **IR.4** Project

Our Value To Specialty Crop Growers

"IR-4 is a proven program with proven success! Without IR-4, California specialty crop growers would be left with very few tools to protect their crops and their livelihoods."
 — Ray Ratto, Ratto Bros. Farms, Modesto, CA

of U.S. ginseng is grown in Wisconsin, without help, Wisconsin ginseng growers would be a big industry."
 ...mann, Ginseng Board of Wisconsin

... are both small ... could be ignored ... more, would be ... our pest probi ... man

Two men in suits are seated to the left of the speaker, listening attentively. The man in the foreground has his hands clasped, while the man behind him looks towards the speaker.

A man in a suit and glasses is seated at a table in the foreground, leaning forward and holding a silver can. In front of him is a table set with a white tablecloth, featuring a large bouquet of red and white flowers, several glasses of water, and plates of food.





The IR-4 Project: Milestones – cont.

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**Upgraded a Quality Assurance Unit
(QAU) in 1993**



The IR-4 Project: Milestones – cont.

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Established Commodity Liaison Committee (CLC) in 1991

Upgraded a Quality Assurance Unit (QAU) in 1993

**Strategic Plan updated in 1995 – complete
Reregistration Program in 1997 shift to
Reduced Risk Products and
Biopesticides**



The IR-4 Project: Milestones – cont.

Crop Group Expansion & Enhancements

Crop Group Enhancements

Multiyear Joint Project lead by IR-4 involving EPA, Canada, International Crop Grouping Consultants Committee (ICGCC) and CCPR to evaluate Crops Groups and extrapolation:

- Harmonization of Crop Groups/extrapolation is a goal to support trade in NA and globally
- International input in developing crop groupings/add new crops to existing groups and/or new groups/subgroups



The IR-4 Project: Milestones – cont.

Crop Group Expansion/Enhancements

International MRL & Registration Harmonization Efforts



International Activities

- **NAFTA Win-Win Model**

NAFTA “Win-Win” Model

- Mutual projects conducted jointly on both sides of the border – Seamless process
- In most cases, reduced data needs of each country (zoning)
- Supported by EPA/PMRA joint reviews and workshare – SUCCESS w/harmonized MRL’s
- Regulatory Cooperation Council (RCC)

International Activities

- NAFTA
- **Support Existing Tolerances**

International Activities

- NAFTA
- Support Existing Tolerances
- Leadership**
 - **Global Minor Use Summits**

Global Minor Use Summit





International Activities

- NAFTA
 - Support Existing Tolerances
- Leadership**
- **Codex (e.g. Crop Groups)**

International Activities

- Canada
- Support Existing Tolerances
- IR-4 Leadership
- **Capacity building**

Tropical Fruit Residue Study

Funding from STDF
*contributions from
manufacturers, USDA,
FAO, others

Asia

Latin America

Project
Coordination

US, others???

Africa

JMPR joint
submission



FASA II

Tarikh Tanam : Mac 2003 - Ogos 2003
Jarak Tanaman : 18kaki X 12kaki
Bil. Pokok : 8,403
Keluasan : 18.7 Hektar



International Activities

- NAFTA
- Support Existing Tolerances
- Leadership
- Capacity building
- **Research**
 - **Global residue studies**
 - **Tomato & Blueberry**

WHY?

Vision of global network of capable minor use programs

- Help establish and mentor these minor use programs (eg. China, Brazil, Costa Rica)
- Partner with other data development groups



The IR-4 Project: Milestones – cont.

Crop Group Expansion/Enhancements

International MRL/Registration Harmonization Efforts

**Plant incorporated protectants -
Biotechnology**



The IR-4 Project: Milestones – cont.

Crop Group Expansion/Enhancements

International MRL/Registration Harmonization Efforts

Plant incorporated protectants-Biotechnology

Invasive Pest Management

Invasive Species

- **Q Biotype Whitefly**
- **Gladiolus Rust**
- **Chili Thrips**
- **Chrysanthemum White Rust**
- **Shipping of Invasive Arthropods**
- **Boxwood Blight**
- **Impatiens Downy Mildew**
- **Spotted Winged Drosophila**
- **Brown Marmorated Stink Bug**



The IR-4 Project: Milestones – cont.

Crop Group Expansion/Enhancements

International MRL/Registration Harmonization Efforts

Plant incorporated protectants-Biotechnology

Invasive Pest Management

**Public Health Pesticides to manage
arthropod pests that transmit
diseases to human and animals**

Public Health Pesticides



- Expand registrations for existing PHP
- Facilitate registrations for new technology and novel pesticides
- Register products outside US to protect deployed US military personnel

Success





IR-4 Deliverables

Since its inception, IR-4 has facilitated the registration of over 26,000 crop uses.

- 15,000 food uses and 11,000 ornamental uses
- Numerous biopesticides (sprayable BT, spinosad for organics)
- Biotech-Plum Pox resistant stone fruit

CY 2012 Accomplishments

Facilitating Registrations

- 2012: 1085 new clearances

Petitions Submitted

- 2012: 31 ai's

New Residue Studies

- 2012: 80

Value

Return on Investment - Michigan State University's Center for Economic Analysis reported in 2012:

- **IR-4 Project efforts contribute over \$7.2 BILLION to annual US Gross Domestic Product.**
- **IR-4 Project efforts support 104,650 JOBS throughout the United States**

Who Pays for IR-4?

Direct Contributions Over \$18 million

USDA-NIFA	\$11,006 000
USDA-ARS	\$ 3,570,000
USDA-ARS/DoD	\$ 250,000
USDA-FAS	\$ 500,000
USDA-APHIS	\$ 900,000
State Ag. Exp. Stations	\$ 481,182
World Bank	\$ 180,000
Grants from Industry	\$ 1,100,000

Indirect Contributions At least \$18 million





Challenge

Proposed Consolidation of IR-4 with USDA-NIFA Integrated Pest Management Programs

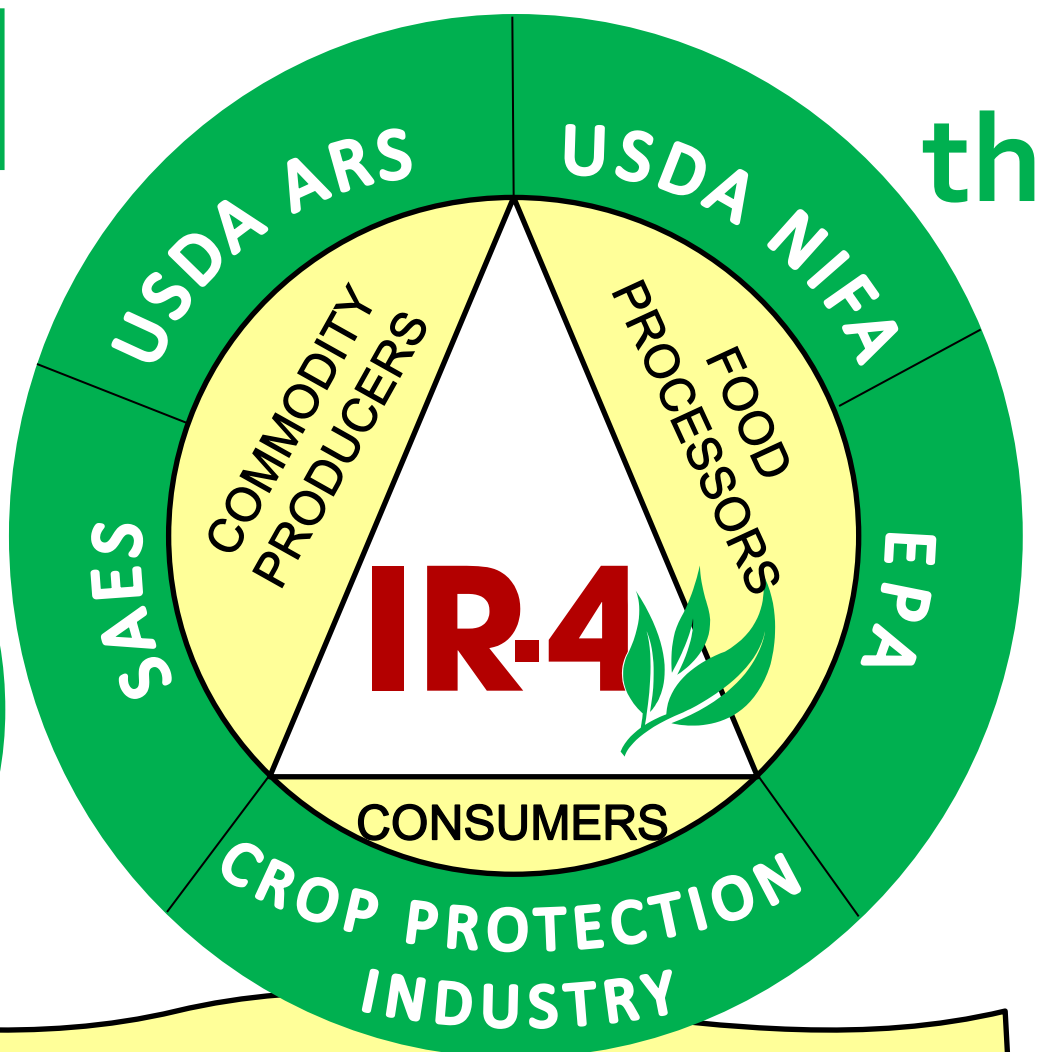
Removed IR-4 from last version

Happy Days

or

*Be Careful For What You
Wish For*

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ANNIVERSARY-2013

Gov't Partners



NIFA

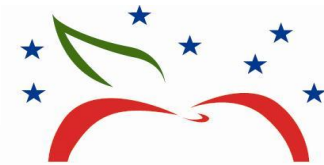


Experiment Station Section
Association of Public and Land-grant
Universities



Deployed War-fighter
Protection Research
Program





USA Dry Pea & Lentil Council



THE CRANBERRY INSTITUTE





Industry Supporters



Bayer CropScience



The miracles of science™



BioWorks, Inc.



Marrone™
Bio Innovations



The Chemical Company



Nichino America, Inc.





Question?

- A. Original member of IR-4's Technical Committee**
- B. Was EPA's first Minor Use Officer**
- C. Helped guide IR-4 through FIFRA 88 reregistration support**
- D. Fathered IR-4's insect management activities**