



IR-4 Global Residue Studies

Results and Potential Positive Outcomes for Agriculture

Dr. Dan Kunkel
Associate Director, IR-4 Program
Chair, Global Minor Use Steering Committee





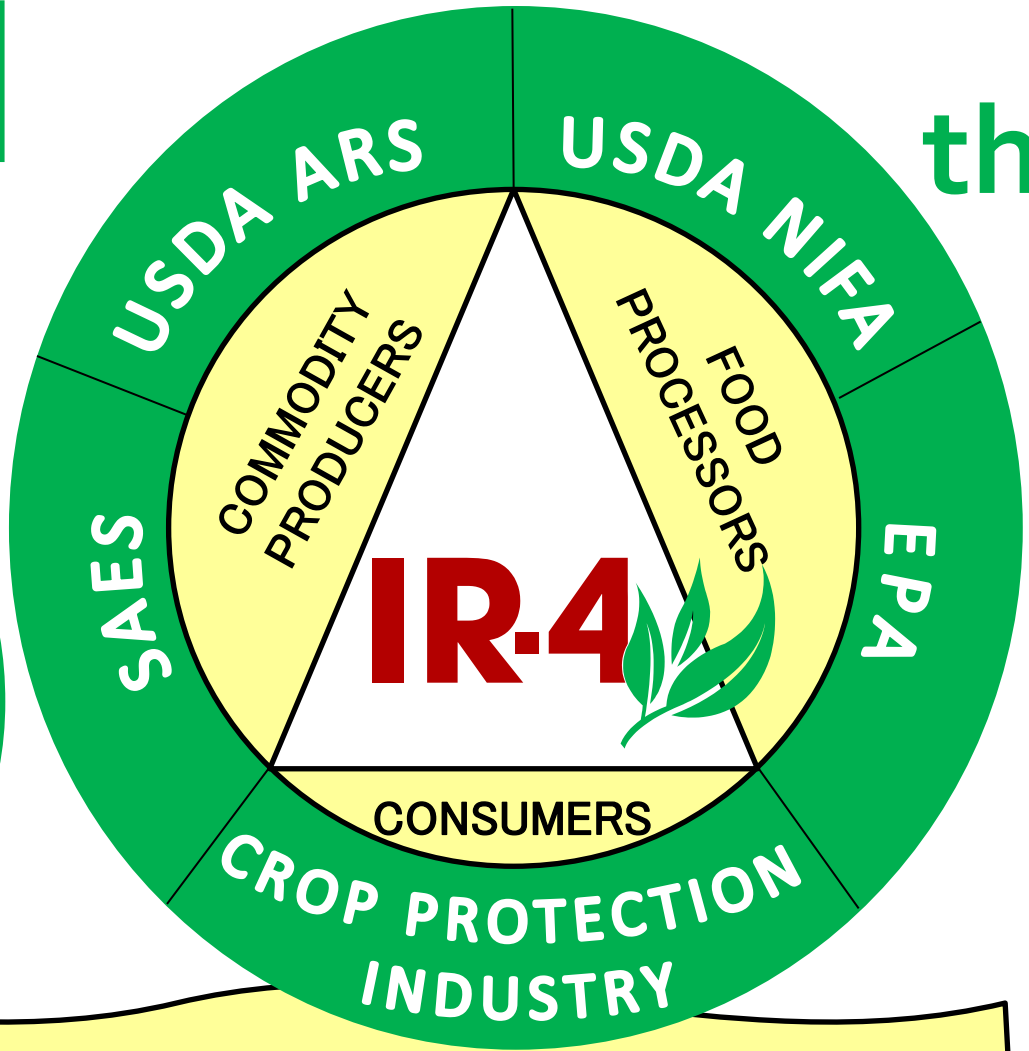
IR-4 Project Mission

***To Facilitate Registration of
Sustainable Pest Management
Technology for Specialty Crops
and Minor Uses***

The
IR-4
Project 

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ANNIVERSARY-2013

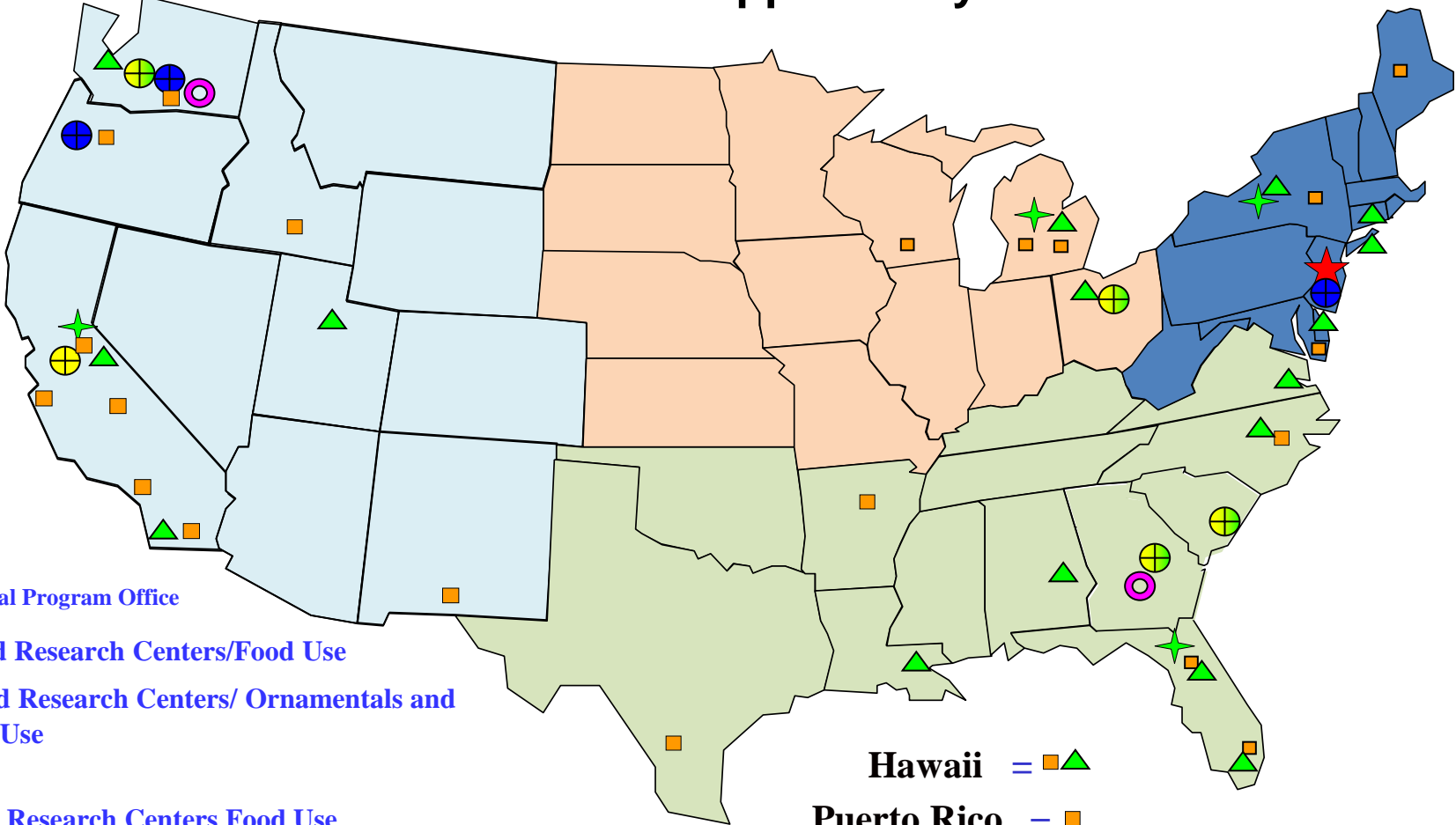
IR-4 Deliverables

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

IR-4 Infrastructure

85 MOR studies supported by 550 field trials



-  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 = 

Approximately 120 staff across the country

Submission to JMPR in 2012

Chemical	Commodities
Pyrimethanil	Ginseng, Lemon, Berries (low growing)
Flutolanil	Brassica (head and stem), Brassica (leafy greens)
Spirotetramat	Artichoke (globe), Banana, Plantain, Bushberry, Cranberry, Coffee, Bulb Vegetables, Pomegranate, Pineapple, Watercress
Propiconazole	Bean (dry, lima, and snap) Mint, Pineapple, Blueberry, Caneberry

Submission to JMPR in 2012

Chemical	Commodities
Cyprodinil	Carrot, Radish, Spinach, Lettuce, Watercress, Brassica (head and stem), Brassica (leafy greens), Basil, Chives, Parsley, Bean (snap, lima, and dry), Pepper (and other fruiting vegetables), Cucurbits, Lemon, Lime, Avocado, Lychee, Caneberry, Strawberry, Blueberry, Kiwifruit
Fludioxonil	Carrot, Radish, Ginseng, Spinach, Lettuce, Brassica (head and stem), Brassica (leafy greens), Basil, Chives, Parsley, Bean (snap, lima, and dry), Pepper (and other fruiting vegetables), Cucurbits, Lemon, Lime, Avocado, Lychee, Raspberry, Strawberry, Blueberry, Kiwifruit, Pineapple

Global Residue Studies

- **Tools for Solutions, 2010 IUPAC, B. Madden**
 - Crop Grouping
 - Global Zoning (Global data sets)
 - Incentives for Industry
 - JMPR/Codex Process Initiatives
 - Capacity Building (Global data generation hubs)
 - Global Minor Use Foundation (pending...houses public funding for Global residue data projects)



IR-4 Global Residue Studies

- Zoning work with tomato
- GLP MOR on blueberry
- Capacity Development - Tropical fruits in Asia, Africa, Latin America



Global Tomato Study*

- The purpose of the Global Residue study is to compare residues of 4 chemicals on tomato across a wide variety of geographical and environmental zones.
- In order to minimize differences:
 - Identical spray equipment
 - Test substances were pre-measured
 - A training video on how to conduct the study was posted on YouTube.
- Samples included a time zero sample to measure variability other than the environment and samples were taken at 24 and 72 hours after application.

*funded by USDA TASC grant.

GLOBAL RESIDUE STUDY-Tomato



CONCLUSIONS

- Calculated MRLs were similar (difference 0.1 ppm or less) across all climatic zones and continents compared to the overall MRL (Complete data set).
- Is being analyzed statistically across sample times, climate, etc.
- Publication being prepared

GLOBAL RESIDUE STUDY-Blueberry



BYI 02960

Blueberry Global Residue Project Status (IR-4 & PMC)

- Study conducted under one protocol (one GAP), IR-4 is the Sponsor and Study Director.
 - All samples analyzed by Bayer Crop Science Laboratory
 - Study submitted for Global Joint Review Fall 2012.
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- LOWBUSH Blueberry:
 - 3 trials in Nova Scotia (one decline)
 - 1 trial in Maine
- HIGHBUSH Blueberry:
 - 2 trials in New Jersey
 - 3 trials in Michigan (one decline)
 - 2 trials in North Carolina
 - 1 trial in Oregon
 - 1 trial in Quebec
- European trials
 - 1 trial in Spain - decline
 - 1 trial in Denmark
 - 2 trials in the U.K. – decline
 - 1 trial in Italy - decline
 - Note: 2 trials using “protected” crop.
- Other Sites (HIGHBUSH)
 - 3 trials in Australia
 - 2 trials in New Zealand
 - 3 trials in Chile (one decline)

26 total field sites in 9 countries

Analysis Using the OECD MRL Calculator

NAFTA sites only

- 13 field trials
- Lowest residue 0.290 ppm
- Highest residue 2.59 ppm
- Median residue 0.834 ppm
- Mean residue 0.912 ppm
- SD 0.630
- Unrounded MRL 3.431 ppm
- Rounded MRL 4 ppm

Global data (all sites)

- 26 field trials
- Lowest residue 0.193 ppm
- Highest residue 2.59 ppm
- Median residue 0.867 ppm
- Mean residue 0.974 ppm
- SD 0.632
- Unrounded MRL 3.504 ppm
- Rounded MRL 4 ppm



Capacity Building Cooperation with USDA-FAS

Capacity Development

Why is IR-4 involved

Vision of global network of capable minor use programs that can address grower needs and generate data.

- Help establish and mentor these minor use programs (e.g. China, Brazil, Costa Rica)
- Partner with other data development groups
- Promote lower risk products

Tropical Fruit Residue Study

Residue data generation

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

Asia

IR-4 and FAS
Project
Coordination

Latin America

US, Canada
others???

Africa

JMPR joint
submission



Global Residue Data Generation Project Funding

- **STDF**
 - ASEAN: \$650k
 - Africa: \$450k
 - Latin Am: \$375k
- **US State Dept**
 - North Africa: \$250k
- **Inter-America Development Bank**
 - Latin Am: \$150k
- **USAID**
 - Latin Am: \$150k

Why not combine Global Datasets?

- OECD Paper in 2003 - published
- OECD Guidance Document on Crop Field Trials (Published and being updated) – share data (up to 40%)
- US and Canada have been combining data for years
- JMPR/Codex –
 - Earlier papers say they will consider Global data sets
 - 2013 CCPR – NO??
- Is the world ready for this? For Commodities in trade?
- The data are more robust and allows regulators more overall data to make a decision – even for minor uses.

Case study: 2013 IR-4 Residue Program

- Canadian Partnership
 - 82 Residue Studies
 - 16 joint studies with PMC
 - 564 Field trials
 - 55 being conducted by Canada
 - \$302,500 direct savings to the IR-4 program
 - PMC is SD for two studies – They cover administration of the study as well a analytical cost (min of \$200,000).

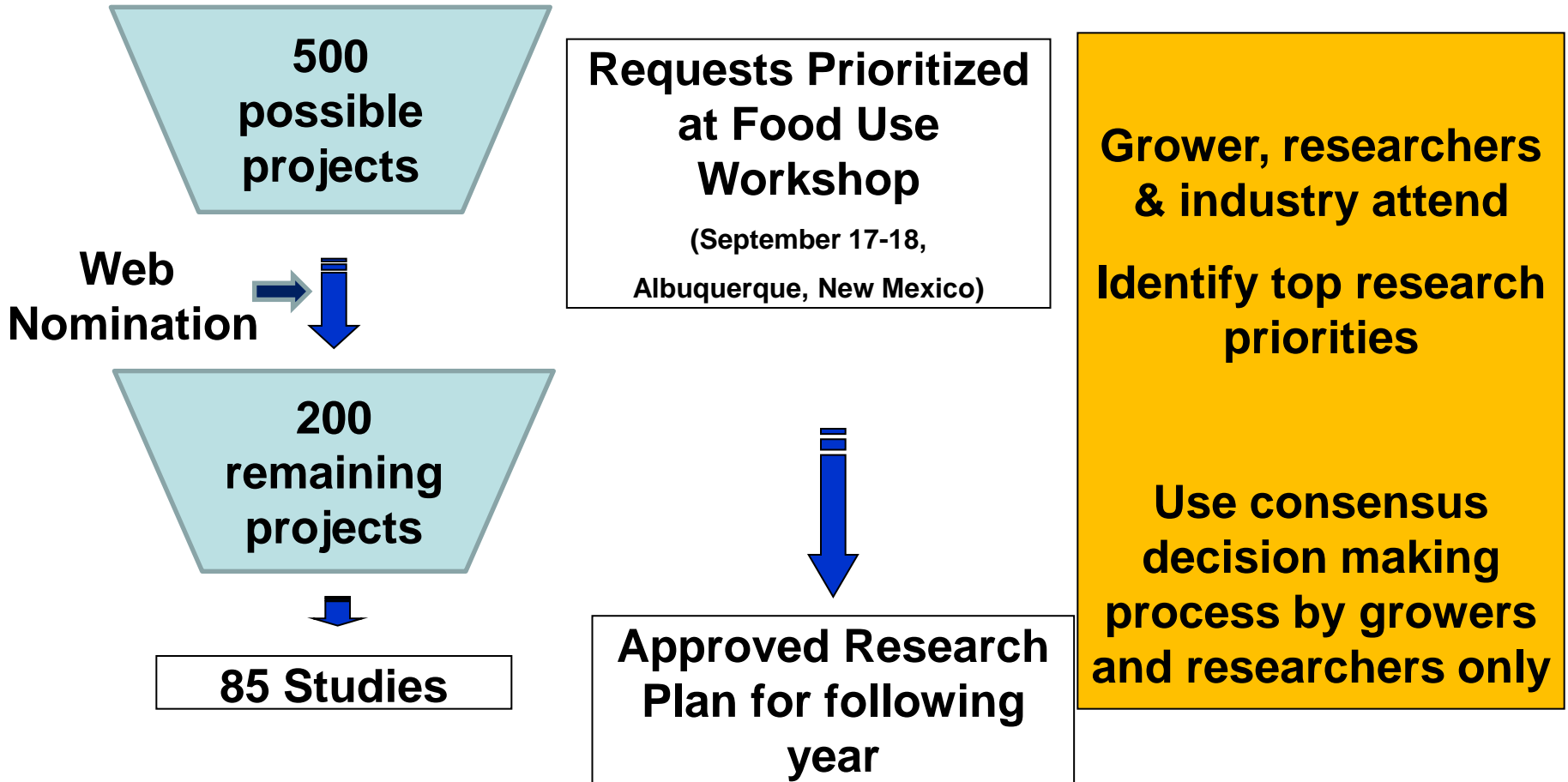
Our Vision

Global network of capable minor use programs working together to solve the MUP

- Help establish and mentor these minor use programs
- Partner with other data development groups
- Address the many unresolved needs.

Global Minor Use Foundation

Stakeholder Involvement



Thank You!

Dan Kunkel
kunkel@aesop.rutgers.edu

732.932.9575 x4616