International Specialty Crop Support Activities

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IR-4 Project

A US government funded research program

Facilitating the regulatory approval of sustainable pest management technology for specialty crops and specialty uses to promote public well-being
Objectives

- **Food Program w/ Reduced Risk Products**
  - Residue trials, some efficacy & crop safety
  - Crop Grouping
  - *International Harmonization of MRL’s and Registrations*

- **Biopesticide and Organic Support Program**
  - Regulatory support and efficacy

- **Ornamental Horticulture Program**
  - Efficacy and crop safety
  - Invasive species
  - Pollinator Protection

- **Public Health Pesticides**
IR-4 Food Program

• Conduct 70 residue studies per year on approx. 40 chemistries (about 500 field trials)
• Submit approximately 80 study reports to EPA each year
• EPA reviews and established Tolerances (MRLs) on 20 or more chemicals per year.
• Through crop groups and other extrapolations the data supports and average of about 700 new uses each year.
Pesticide residue limits (MRLs)

- Pesticide residue limits (MRLs) are important for compliance of proper use of products and has become an important trade standard for agricultural commodities.
- Only set if the dietary exposure risk assessment confirms that there are no human health concerns to any segment of the population.
- Many countries are creating or modifying system of establishing/enforcing MRLs for imported crops and domestic use.
- The science improves, now 1 ppb is a reality.
- Regulations increase, greater complexity of moving commodities through global markets.
- More data needed, thus the Minor use problem grows/amplifies.
International Harmonization of MRL’s and Registrations was added to IR-4 Project authorization to “The Agricultural Act of 2014”.

INTER-REGIONAL RESEARCH PROJECT NUMBER 4.—Subsection (e) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(e)) is amended in paragraph (4) (E) assist in removing trade barriers caused by residues of pesticides registered for minor agricultural use and for use on domestically grown specialty crops;
IR-4’s International Efforts

1. Repurposing IR-4 Data to support US specialty crop exports
International Use of IR-4 Data

- **Codex/JMPR**
  - Work with commodity groups and EPA to add uses (chemicals) to JMPR work plan
  - Review JMPR work plan and dovetail IR-4 data with chemicals scheduled for review
  - Work with EPA and Registrants to submit data to JMPR
  - Nominate Chemicals for JMPR review
  - Consider working with other countries to nominate chemicals or add commodities to JMPR workplan
  - Encourage MFGs to submit IR-4 data to other regulatory bodies.
Prime examples include:
- Hop exports to the EU
- Citrus and Berry growers to Asia markets
- Cranberries to the EU
IR-4’s International Efforts

1. Repurposing IR-4 Data

2. Facilitating Global Harmonization
   - Codex Crop Groups
   - Global Residue Studies with tomato & blueberry
Crop grouping/classification:

- Places crops into appropriate groups or subgroups
- Representative crops have been identified as the appropriate commodity for residue research purposes
- Data from the representative set of crops allows establishment of the maximum allowable residue levels (MRLs) for multiple related crops
Crop Group petitions from ICGCC submitted to the Chairs of the Codex EWG by IR-4.

Netherlands & U.S. (eWG Chairs) prepare crop group proposals to be sent to CCPR Members.

Proposed additions by CCPR Members are reviewed by Codex EWG.

Finalized proposals are then submitted to Codex Secretariat.

Proposals are discussed on the floor at the CCPR meeting.

After agreement each group is held at step seven until the entire “commodity type” is complete. Then advances to Adoption (step 8)
Global Residue Studies

- Global Zoning Study w/Tomato
  - 4 ai’s/28 locations
  - key part of EPA & PMRA’s global exchangeability proposal
- Blueberry – IR-4 managed a GLP residue study in various regions
  - Harmonized MRL established & use is registered
Global Zoning

• Joint project between EPA, PMRA, IR-4 & CropLife to investigate the question:

“How Important are Geographic Zones in Determining Pesticide MRLs?”

• Expecting a publication in: the journal Statistics and Public Policy

Presented by David J. Miller at the CCPR48 April, 2016.
IR-4’s International Efforts

1. Repurposing IR-4 Data
2. Facilitating Global Harmonization
3. Data Development
   • Domestic
   • International Cooperation
Data Development

2016 USDA-FAS TASC grant
Enhanced Data Sets to Satisfy International Data Requirements for Establishment of Appropriate Maximum Residue Level’s (MRL’s) to support US exports.
Develop global network of capable minor use programs working together to solve the minor use problem

– Help establish and mentor these minor use programs

– When US grower priorities align, partner with international partners
Case study: IR-4 Joint work with Canada

• 2017
  – Joint research/common interest on 22% of IR-4’s studies
  – Canada performed 32 field trials
    • $192,000 direct savings to the IR-4 field program
  – Canada was SD for three studies – They cover administration of the study as well a analytical cost (min of $300,000).
IR-4’s International Efforts

1. Repurposing IR-4 Data
2. Facilitating Global Harmonization
3. Data Development
4. Capacity Building
International Residue Studies – Capacity Building or Research >60 Countries, >>100 Scientists.
IR-4’s International Efforts

1. Repurposing IR-4 Data
2. Facilitating Global Harmonization
3. Data Development
4. Capacity Building
5. Leadership
Global Minor Use Summit
GMUS-3 Going Forward

1. Cooperation
2. MRLs
3. Incentives
4. Crop Grouping
5. Communication
6. Capacity Building
7. Regulatory Assessment
Global Minor Use Workshop

- Sponsors
  - IR-4 (USDA), Australia, Canada, the EU and others
- First step in global research approaches to solve minor use needs.
- Created a global database
- ID common critical pest management voids
- Plan Cooperative research or data sharing.
- Nearly 200 attendees from 30 countries.
<table>
<thead>
<tr>
<th>Cropping System</th>
<th>Pest/Crop rank 1 - A (highest votes)</th>
<th>Pest/Crop rank 2 - B (votes)</th>
<th>Pest rank 3 – B (votes)</th>
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</thead>
</table>
| Protecte (green house) | **Aphids /lettuce**  
Possible Solutions:  
Flonicamid, Pymetrozine, Cyantraniliprole, Sulfoxaflor, NA 11630 | **Thrips /fruiting vegs.**  
Possible solutions:  
Cyantraniliprole, Novaluraran, Cyclaniliprole | **Whiteflies/fruiting veg.**  
Possible solutions:  
Flupyradifurone, Cyantraniliprole, Novaluraran, NA 11630 |
| Temperate | **Downy mildew/leafy vegetables**  
Possible solutions:  
Ametoctradin + Dimethomorph, Acibenzolar, Zo Folmaz, Fluopicolid + Propamocarb + Cyazofamid, Oxathiapiprolin, Famoxadone + Cymoxanil | **Aphids/legumes crops**  
Possible solutions:  
Flonicamid, Pymetrozine, Cyantraniliprole, Sulfoxaflor, Dinotefurran, Spironorinat, Flupyradifurone, NA 11630 | **Weeds/leafy vegetables**  
Possible solutions:  
s-metolachlor |
| Tropical Fruit | **Fruit flies**  
Possible solutions:  
Spinosad, Cyantraniliprole, Kaolin, NA 11630 | **Anthracnose**  
Possible solutions:  
Trifloxystrobin + Fluopyram, Pyraclostrobin + Metiram, Mandistrobion, Isofenamid, Azoxystrobin + Difenoconazol | **Psyllids on Citrus crops**  
Possible solutions:  
Difembrubenzuron, Flonicamid, Sulfoxaflor, Buprofezin, NA 11630 |
IR-4’s International Efforts

1. Repurposing IR-4 Data
2. Facilitating Global Harmonization
3. Data Development
4. Capacity Building
5. Leadership
6. Global Minor Use Fund
Research goes forward, following year or longer

**Global Process**

1000* possible projects

Global Workshop

Priorities
- 3 tropical
- 3 temperate
- 3 protected

Funding

International Organizations,
Grower, researchers, Farm advisors
Identify top research priorities

Use consensus decision making process

Industry and Regulatory attend and must provide “buy in” for selected projects

Research starts as soon as priorities are determined

Use Global Research Hubs

Foundation Funding

Proposed framework...

For a successful model

1000* possible projects

Global Workshop

Priorities – based on needs and funds

Global Workshop

Current framework

*priorities collected from survey and now listed in global database
THANK YOU!

The IR-4 Project

food

TOO GOOD TO WASTE