



The IR-4 Project

Pest management solutions for specialty crops and specialty uses

ir4project.org



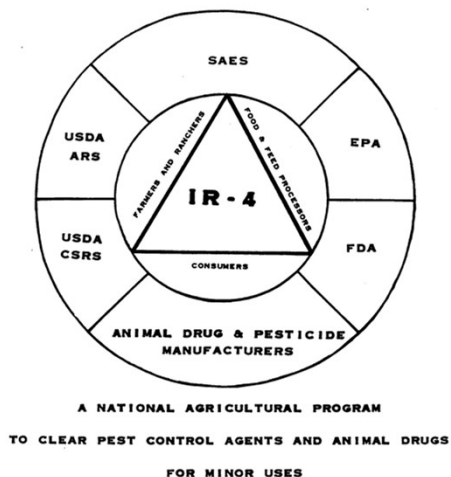
IR-4's Mission

Securing pest management solutions for specialty crops and specialty uses in support of public well-being.

IR-4's History

- Est. 1963 by the U.S. Department of Agriculture (USDA) and land-grant universities
- Minor use problem
- 60+ years of partnerships depicted in original IR-4 logo

IR-4 originally stood for Interregional Research Project #4.



What We Do

- Ensure that specialty crops and minor uses have legal access to **safe, effective crop protection** tools
 - Work with **growers and other stakeholders** to identify pest management needs and solutions
 - Conduct necessary crop safety, efficacy, and residue **research**
 - **Submit data** to the U.S. Environmental Protection Agency (EPA) and other entities for approval of new uses



Crops IR-4 Supports

- **Specialty crops**
 - Fruits, vegetables, nuts, herbs, spices, mushrooms, ornamental crops + more
 - USDA, Section 101 of the Specialty Crop Competitiveness Act of 2004
 - High-value, lower-acreage crops
- **Minor uses on major crops**
 - Ex: methoxyfenozide on rice



IR-4's Impacts



Why Our Work Matters

- **Pest pressure** on specialty crops is significant
- **Resistance** to existing pest products is increasing
- **Limited tools** are accessible for managing pests on specialty crops
- **Changing climate** = increasing pest problems
- **Reduced-risk** products and emerging technologies are needed by growers
- **International harmonization** helps growers access export markets
- **Specialty crops** are vital to public health, the environment & the economy



IR-4 is Needed



IR-4 is the **only publicly-funded program** that conducts research and submits petitions to the EPA for the approval of new tolerances and the registration of additional uses of pest management tools for specialty crops.

By **increasing pest management options** through regulatory approval, IR-4 supports **healthy harvests** and generates **economic growth** for the specialty crop community.



IR-4 is Technology Neutral



IR-4 helps organic and conventional farmers access safe, effective tools to manage pests.

IR-4 conducts research and registration work that responds to grower needs:

- Chemical pesticides
- Biopesticides
- Biotechnologies
- Other emerging technologies



IR-4's Economic Impacts

- IR-4's efforts and jobs contribute approximately **\$8.97 billion** to the annual gross domestic product.
- **Seven jobs** can be attributed to **every \$1,000 of public investment** in The IR-4 Project.
- IR-4 contributes to more than **123,000 U.S. jobs** throughout the agricultural production value chain.

**Figures according to a 2022 analysis conducted by Michigan State University's Center for Economic Analysis, based on 2021 numbers.*





Purposeful Partnerships

IR-4's work takes a village

Participants in the Process



Growers, researchers, agencies, committee members, commodity groups, land-grant universities, registrants, manufacturers and more

Main Funding Support

- U.S. Department of Agriculture (USDA)
 - National Institute of Food and Agriculture (NIFA)
 - Agricultural Research Service (ARS)
- agInnovation
- Crop protection industry and commodity groups



Additional Support

- USDA – Foreign Agricultural Service (FAS)
- USDA – Animal and Plant Health Inspection Service (APHIS)
- CDFA – California Dept. of Food and Agriculture
- U.S. Environmental Protection Agency (waiver of submission fees)
- Minor Use Foundation and international partners (joint research projects)



Project Management Committee

Board of Directors for IR-4

- **Meets 3 times per year** to develop policies and procedures, set budgets, review status of ongoing programs, and ensure goals are met.
- **Members include:** IR-4 Executive Director, Regional Directors, Regional Administrative Advisors, and a representative from the Commodity Liaison Committee.



PMC members Matt Hengel, Liwei Gu and Simon Zebelo during the 2025 spring meeting in D.C.

Commodity Liaison Committee

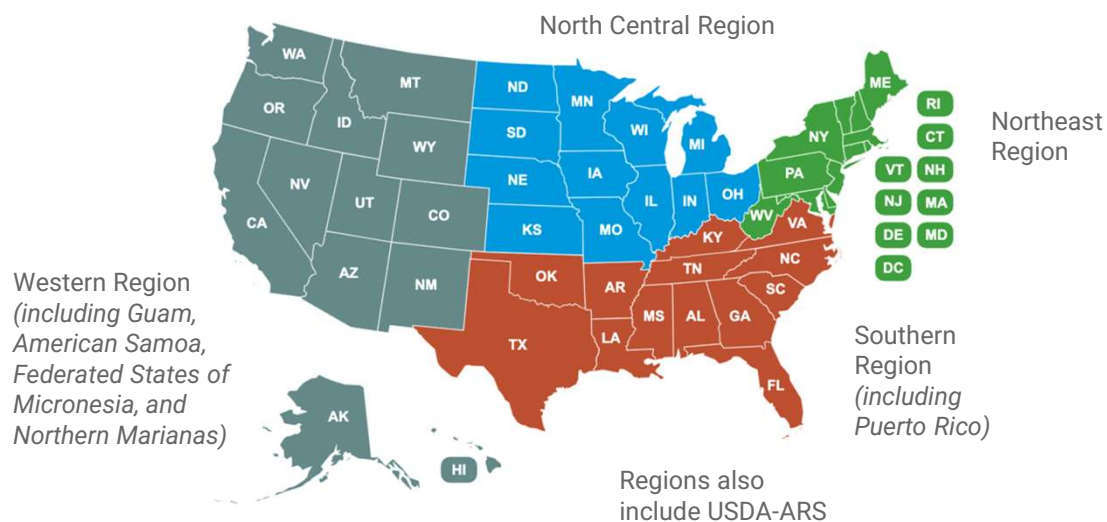


- **Stakeholder committee** representing various specialty crop commodity groups
- Provides guidance to IR-4 on ways to **serve needs of growers**
- **Advocates for IR-4** to elected officials

Regional and Local Support

- **Regional Field Coordinators (RFCs) and State Liaison Representatives (SLRs)** work with local growers and commodity groups to identify pest concerns and effective solutions
- **RFCs** facilitate regional priority setting and advocate for high priorities on a national level
- **Field Research Directors (FRDs)** conduct and oversee trials locally at land-grant university research sites

The IR-4 Project Regions





IR-4's Programs



Program Areas



Food Crops

- Residue Studies & Product Performance
- Integrated Solutions
- Biopesticide Regulatory Support
- International Activities

Environmental Horticulture

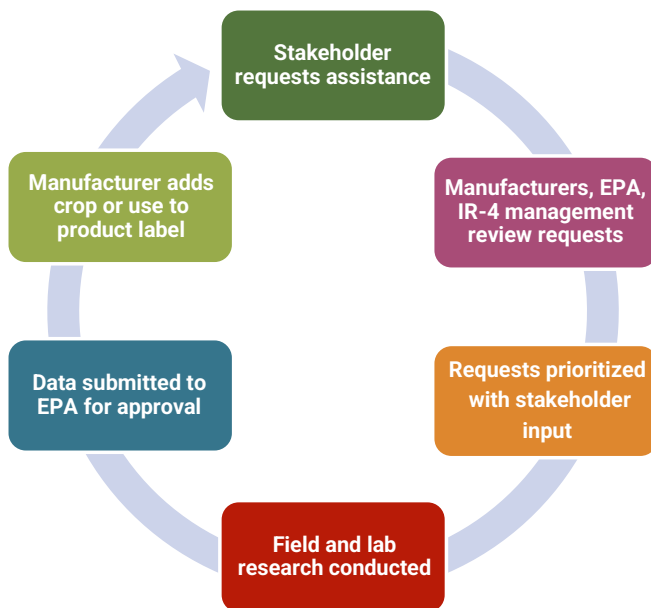
- Product Performance
- Invasive Species

FOOD CROP PROGRAM

- Facilitates regulatory approval of safe and effective pest management solutions for specialty food crops
- Growers & other stakeholders work with Regional Field Coordinators to identify potential solutions for research and set IR-4's priorities



FOOD CROP RESEARCH CYCLE



2025 EVENTS

Industry Technology Session
February 20, 2025
Virtual

Food Use Workshop
September 9-11, 2025
Denver, CO

Environmental Horticulture Workshop
October 7-8, 2025
Kansas City, MO

The Food Crop Program has **two research platforms:**

RESIDUE & PRODUCT PERFORMANCE



Pineapple field trial in Puerto Rico; image credit: Wilfredo Robles Vasquez

INTEGRATED SOLUTIONS



Spotted wing drosophila on raspberry; image credit: Adobe Stock

RESIDUE & PRODUCT PERFORMANCE

Generates data required to support registration of a single product for the management of a specific pest on a specific crop.

- **Residue:** Establishes residue tolerance for the crop
- **Product Performance:** Assesses the efficacy and crop safety of the pesticide



INTEGRATED SOLUTIONS

Evaluates **cutting-edge strategies** that specialty crop growers can utilize for complex pest management challenges. Technologies explored include **bio-based and chemical pesticides** as well as **biotechnology**. Tools like **biostimulants and resistant cultivars** may also be explored in tandem with primary products.

Research areas include:

- Pest problems without solutions
- Resistance management
- Residue mitigation
- Organic food production



Biopesticide Regulatory Support

- Provides **regulatory assistance** to public sector scientists + small businesses navigating EPA registration with bio-based products
- Furthers **development + registration** of biopesticides for use in pest management on specialty crops, and specialty uses on major crops
- Active role in securing products to protect **honey bees**, and in development of a **blight-resistant chestnut tree**



International Activities

Global harmonization

- Help facilitate US grower access to international markets via harmonization maximum residue levels
- Harmonization of crop groups

Capacity building

- Cooperation with Minor Use Foundation

Joint residue studies

- Canadian Pest Management Centre/others

Policy enhancement

- Global Minor Use Summit



IR-4

2024 Snapshot

Food Crop Program



SUCCESSSES

- **52** new tolerances for **8** active ingredients established by U.S. Environmental Protection Agency (EPA) resulting in **1,024** potential new product uses on food crops

REGULATORY ACTIONS


- **9** tolerance petitions submitted to the EPA, covering **48** unique requests for assistance and crop group tolerance updates

RESEARCH



- **394** residue trials contributing to **53** Magnitude of the Residue studies
- **148** efficacy/crop safety trials contributing to **74** Product Performance projects
- **62** field trials contributing to **35** Integrated Solutions projects

Economic Impact

Food Crop Program



- **75,300 total jobs supported** (directly and indirectly)
- **\$3.59 billion** in annual labor income
- **\$6 billion** contributed to the annual U.S. **Gross Domestic Product**
- **\$4.31 billion** increase in specialty food crop sales

Figures according to a 2022 economic impact analysis conducted by the Michigan State University Center for Economic Analysis, in 2021 dollars.

*Figures according to a 2022 economic impact analysis conducted by the Michigan State University Center for Economic Analysis, in 2021 dollars

ENVIRONMENTAL HORTICULTURE

Environmental Horticulture Program


Assists in the development of pest management tools for use on environmental horticulture crops, est. 1977.

Crops include:

- Landscape & nursery plants
- Pollinator plants
- Cut flowers
- Houseplants

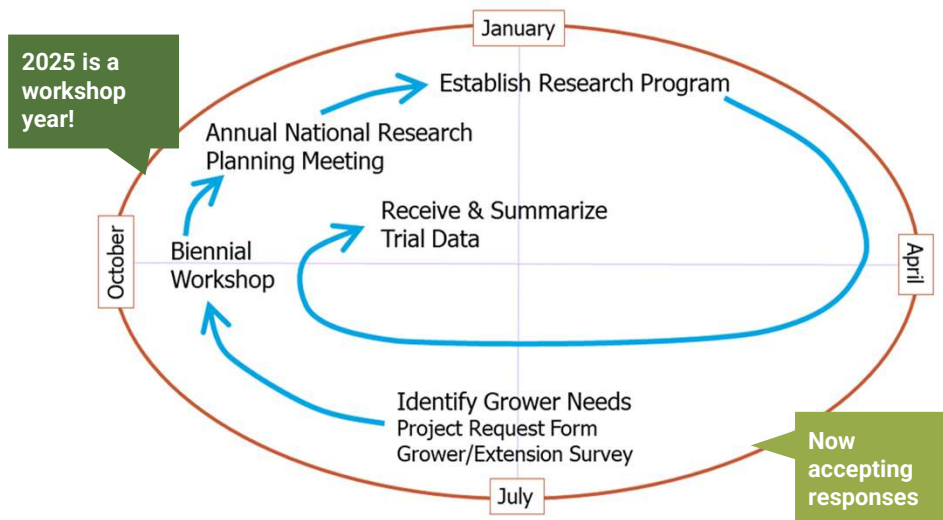
2 key research areas:

- Registration support
- Invasive species



ENVIRONMENTAL HORTICULTURE

The Environmental Horticulture Program follows a **biennial research cycle:**



2024 Snapshot

Environmental Horticulture Program



SUCCESSSES

- IR-4 will soon have an accurate assessment of new registrations achieved in 2024; awaiting responses to inquiries from industry registrants.

REGULATORY ACTIONS

- **11** research summaries were written to support new or update existing registrations

RESEARCH

- **671** field and greenhouse trials (**246** efficacy, **429** crop safety) that contributed to **56** projects

Economic Impact *Environmental Horticulture*



- **9,700 total jobs supported** (directly and indirectly)

- **\$456 million** in annual labor income

- **\$725.5 million** contributed to the annual U.S. **Gross Domestic Product**




- Annual Crop losses mitigated value **\$506 million**

*Figures according to a 2022 economic impact analysis conducted by the Michigan State University Center for Economic Analysis, in 2021 dollars

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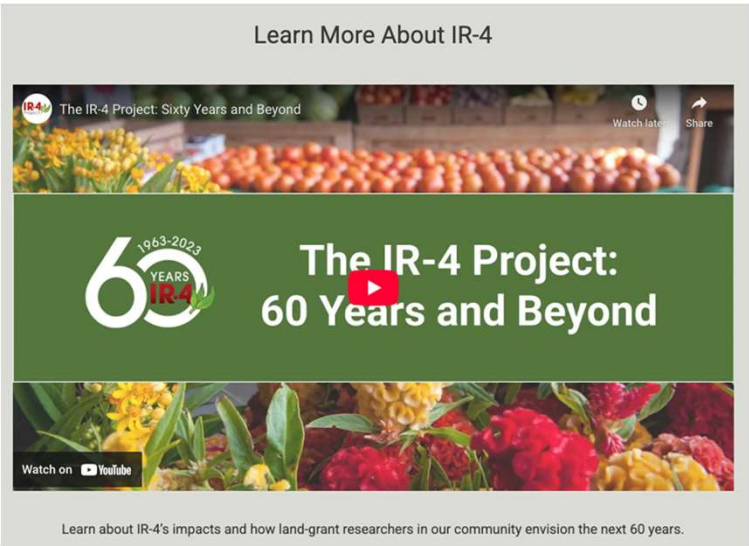
Learn More + Get Involved



IR-4 Project
Pest management solutions
for specialty crops and
specialty uses

**2024
ANNUAL REPORT**
Prepared by IR-4 Headquarters

2024 Annual Report & Year-End Summary now available at ir4project.org



IR-4

Visit ir4project.org to view our latest promotional video:

“The IR-4 Project: 60 Years and Beyond”

Scroll down to **Learn More About IR-4.**

Learn More About IR-4

The IR-4 Project: Sixty Years and Beyond

Watch later Share

60 YEARS
1963-2023
IR-4

**The IR-4 Project:
60 Years and Beyond**

Watch on YouTube

Learn about IR-4's impacts and how land-grant researchers in our community envision the next 60 years.



Share Your Pest Management Needs with IR-4



The best way to voice your needs and help shape our research is to **submit a Project Clearance Request (PCR)**. We accept PCRs for both the Food Crop and Environmental Horticulture Programs. The EH Program also invites input through its Grower Survey.

Visit ir4project.org and select **Submit a Request** to learn more, view deadlines, find a tutorial, and submit your PCR. New PCRs inform discussions at our priority setting events. We hope you'll get involved by submitting a PCR!



We hope you'll join us for this year's priority setting events!

The ir4project.org homepage highlights upcoming events.

Learn more about each event under **Events & Training**.





IR-4 Environmental Horticulture Program 2025 GROWER + EXTENSION SURVEY NOW OPEN



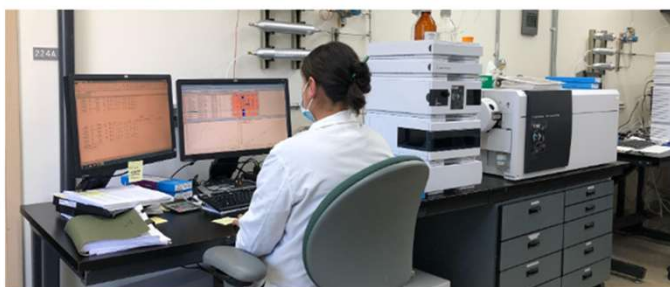
Find survey on our
Grower Needs page



Visit the **Stakeholder Resources** page at ir4project.org for more helpful materials.

Please note the **Video Tutorials**—designed so new collaborators can learn how to participate in our research cycle!

Stakeholder Resources



The IR-4 Project works with stakeholders from the specialty crop industry, land-grant universities, commodity groups, registrants and other partners to provide safe and effective pest management tools for specialty crop growers. The following resources are here to help stakeholders get involved in our research cycle.

Databases and Resources by Program

- Food Program
- Food Program Database
- eQA/eDOCS
- Food Use Workshop Terminology Handout
- Food Crop Research Cycle Handout
- Priority Upgrade Proposal Form
- Researcher Resources

Video Tutorials

- Submitting a Project Clearance Request
- Nominating Projects for the Food Use Workshop
- The Food Use Workshop Process
- Priority Upgrade Proposals





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