The IR-4 Project

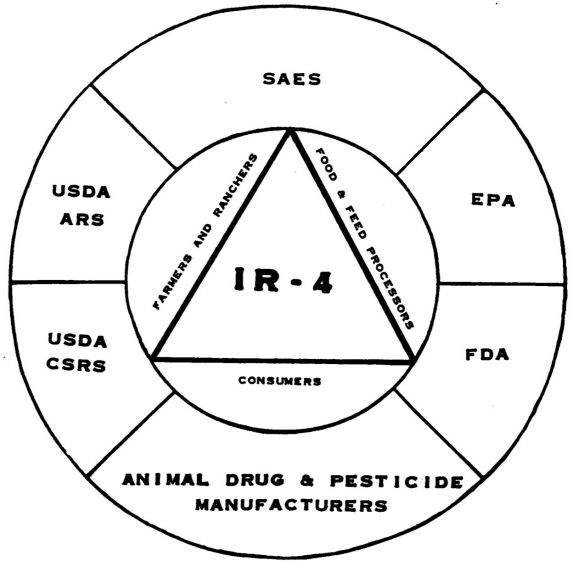
Pest management solutions for specialty crops and specialty uses

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



A NATIONAL AGRICULTURAL PROGRAM

TO CLEAR PEST CONTROL AGENTS AND ANIMAL DRUGS

FOR MINOR USES

What We Do

- Ensure that specialty crops and minor uses have legal access to **safe, effective crop protection** products
  - 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

IR-4 Project

Crops IR-4 Supports

- **Specialty crops**
  - Fruits, vegetables, nuts, herbs, spices, mushrooms, and horticulture crops
  - 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
- **Resistance** to existing pest products increasing
- **Limited tools** accessible for managing specialty crop pests
- **Changing climate** = increasing pest problems
- **Reduced-risk** products and emerging technologies
- **International harmonization** helps growers access export markets
- **Specialty crops** support nutrition, environment & economy

IR-4 Project

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.

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

IR-4 Project

IR-4 is Technology Neutral

IR-4 gives organic and conventional farmers safe, effective tools that suit their needs. **Growers decide** what their production systems need, and IR-4 helps them to access:

- Chemical pesticides
- Biopesticides
- Biotechnology
- Emerging technologies

IR-4 Project

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.*

IR-4 Project

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

Funding Support

- U.S. Department of Agriculture
- USDA – National Institute of Food and Agriculture
- USDA – Agricultural Research Service
- USDA – Foreign Agricultural Service
- USDA – Animal and Plant Health Inspection Service

Additional Support

- State Agricultural Experiment Stations
- Commodity and industry partners for special research projects
- Crop protection industry
- 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 operational budgets
  - Review status of ongoing programs
  - Ensure overall goals are met
- **Members include**:
  - IR-4 Executive Director
  - Regional Directors
  - Regional Administrative Advisors
  - Representative from Commodity Liaison Committee

Commodity Liaison Committee

- **Stakeholder committee** representing various specialty crop commodity groups
- Provide guidance to IR-4 on ways to **serve needs of growers**
- **Advocate 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** prioritize regional projects and advocate on national level
- **Field Research Directors (FRDs)** conduct and oversee trials locally

The IR-4 Project Regions

Northeast Region

Western Region *(including Guam, American Samoa, Federated States of Micronesia, and Northern Marianas)*

Southern Region *(including Puerto Rico)*

Regions also include USDA-ARS

IR-4's Programs

Program Areas

Food Crops

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

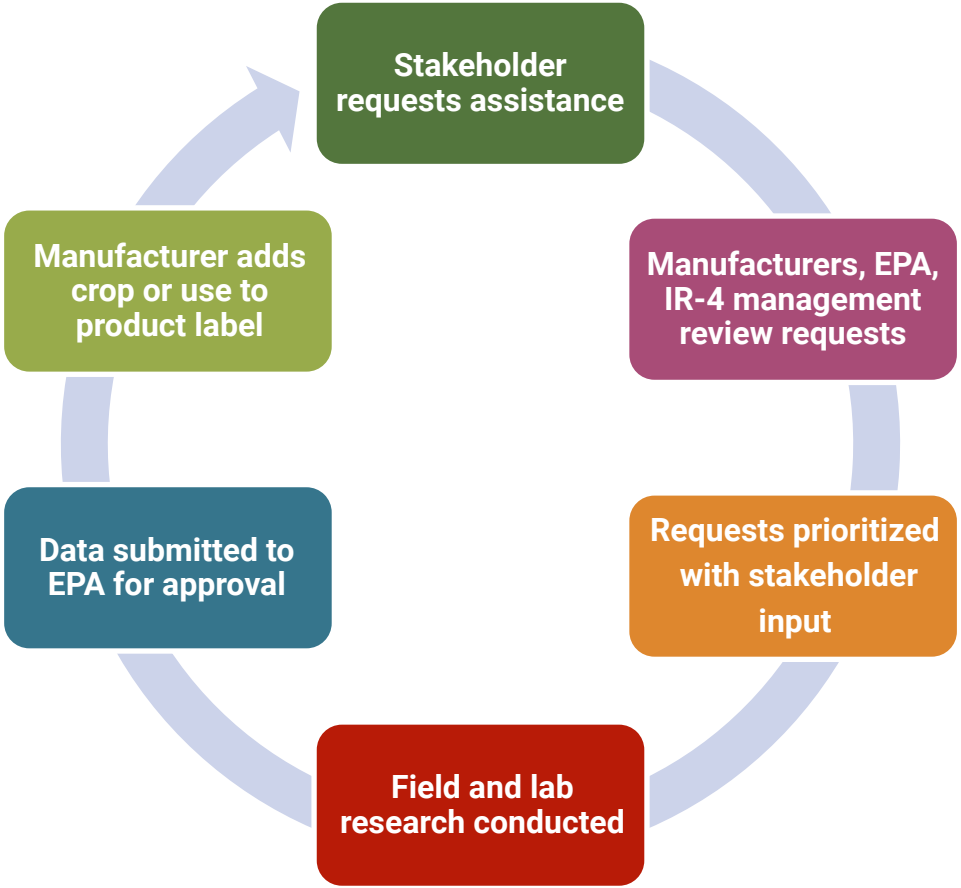
Environmental Horticulture

- Product Performance
- Pollinator Health
- 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

FOOD CROP RESEARCH CYCLE



UPCOMING EVENTS

Industry Technology Session
July 18, 2024
Virtual

Food Use Workshop
September 10-12, 2024
Milwaukee, WI

FOOD CROP PROGRAM

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

FOOD CROP PROGRAM

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

FOOD CROP PROGRAM

INTEGRATED SOLUTIONS

Evaluates diverse pest management strategies and technologies that specialty crop growers can integrate into existing production systems to meet their complex needs, such as biopesticides and organic solutions, as well as tools like baits and pheromones.

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
- **$1.58 billion** net contribution to **organic crop production** through productivity enhancements and crop damage avoidance
- Active role in securing products to protect **honey bees**, and in development of a **blight-resistant chestnut** tree

IR-4 Project

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
- Borlaug Fellows

Joint residue studies

- Canadian Pest Management Centre/others

Policy enhancement

- Global Minor Use Summit

2023 Snapshot

Food Crop Program

SUCCESSES

- **211** new tolerances for **18** active ingredients established by U.S. Environmental Protection Agency (EPA) resulting in **1,613** potential new product uses on food crops

REGULATORY ACTIONS

- **12** tolerance petitions submitted to the EPA, covering **92** unique requests for assistance and crop group tolerance updates

RESEARCH

- **384** residue trials contributing to **52** Magnitude of the Residue studies
- **143** efficacy/crop safety trials contributing to **65** Product Performance projects
- **72** field trials contributing to **35** Integrated Solutions projects

Economic Impact
Food Crop Program

IR-4

- **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 development of pest management tools for use on environmental horticulture crops, est. 1977

Crops include:

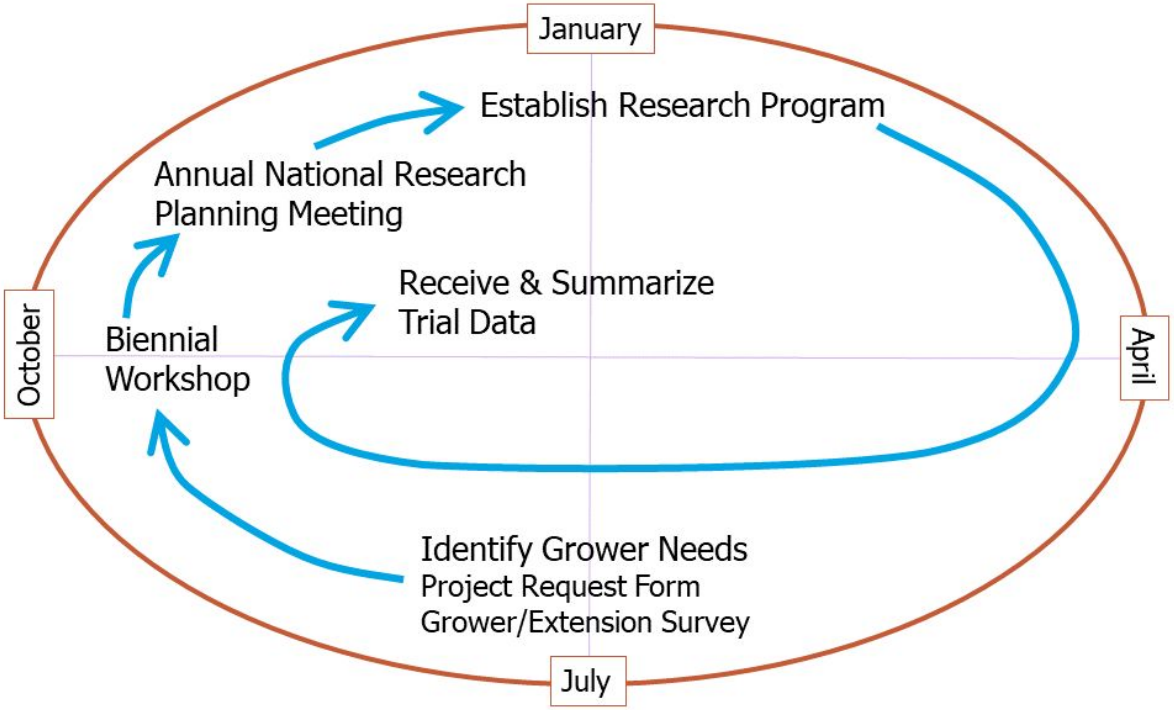
- cut flowers
- landscape/nursery plants
- houseplants

3 key areas:

- Registration support
- Invasive species
- Pollinator protection

ENVIRONMENTAL HORTICULTURE

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



IR-4

2023 Snapshot

Environmental Horticulture Program

SUCCESSES

- BotryStop was registered in California, supporting **500** additional environmental horticulture crop uses

REGULATORY ACTIONS

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

RESEARCH

- **657** field and greenhouse trials (**275** efficacy, **379** crop safety) that contributed to **57** projects

Economic Impact
Environmental Horticulture

IR-4

- **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

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

Learn More + Get Involved

2023 Annual Report & Year-End Summary now posted at ir4project.org

Visit our homepage to view our 60 Years of IR-4 Video:

ir4project.org

Scroll down to "Learn More About IR-4"

Learn More About IR-4

Scan to sign up for IR-4's Newsletter*:

*or visit **ir4project.org**, scroll to the bottom, and select "Sign Up for Announcements"

IR-4 Project

Connect With Us

IR-4 Project

LEARN MORE

ir4project.org
ir-4_project@ncsu.edu