



**IR-4 NORTH
CENTRAL REGION
RESEARCH CENTER**

MICHIGAN STATE UNIVERSITY

M. Hausbeck
N. Soldan



2024 ANNUAL REPORT

(January 1 – December 31, 2024)

A. Mission and Goals of the North Central Region IR-4 Program

The mission of the NC Region IR-4 program is to ensure that safe and effective pest management tools are available for growers of specialty crops, including ornamental crops, and for minor uses on major crops through the generation of high-quality field data.

The goals of the program are to identify pest management needs for these crops in the region, to participate in the prioritization of these needs at the national level, to conduct field research that develop the information to obtain clearances and label additions from USEPA to meet these needs, and, finally, to make information available on the status and progress of these studies and their final outcome to growers and other interested parties.

B. Background and Justification

The IR-4 Minor/Specialty Crop Pest Management Project (IR-4 Project) is a comprehensive, national program that consists of six units working together on a common mission to meet the nationally defined goals and objectives presented above. The national program is currently comprised of: IR-4 National Headquarters (IR-4 HQ), four Regional IR-4 Centers (Northeast, North Central, Southern and Western), and the USDA Agricultural Research Service (USDA-ARS) Office of Minor Uses. The North Central Region (NCR) program is responsible for the operations of the program in the 12 states of the region (IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD and WI) and has been located at Michigan State University (MSU) since the inception of the regional programs in 1967. The NCR program has developed multiple field research centers in the region, and works with other field research cooperators, and, in response to the Good Laboratory Practice (GLP) requirements of EPA, has access to Quality Assurance personnel to serve the region. The NCR program also works co-operatively with the USDA-ARS IR-4 field research unit located at Wooster, OH. The NC Region strives to maintain one or more State Liaison Representatives per state to help identify research needs and transmit back the activities of the program to interested parties.

In the NCR program, needs are identified and prioritized by research and extension personnel, farmers, grower organizations and others at a regional meeting, and prioritized at a National Food Use Workshop. Field trials in which pest management chemicals are applied to food crops are conducted and crop samples are collected and analyzed for the magnitude of residues. All residue food use research is conducted under the requirements for Good Laboratory Practice

issued by the USEPA. The analytical reports, after Quality Assurance checks, are forwarded to USEPA as petitions for the development of clearances for these materials. Efficacy (performance) studies on key pests that are currently difficult to control are also funded where this is deemed necessary to obtain later clearances for these pests. Like food uses, ornamental projects are prioritized at a specific workshop and assigned to collaborators in the NCR. The ornamentals projects focus on efficacy and crop safety (phytotoxicity) with primary emphasis on pests for which no satisfactory controls currently exist. The reports are sent to the registrants of the chemicals to assist in obtaining label amendments to include new crops and pests. Projects to conduct research and efficacy demonstrations with biopesticides are also solicited and prioritized nationally at the annual Biopesticide Workshop.

The plant protection industry has limited economic incentive to conduct the research necessary to obtain registrations for most specialty crops. To fill this pest management gap, IR-4 develops the data that provide legal, effective, safe and IPM-compatible pest control agents. Without this program, many specialty crops could no longer be produced in the USA with severe economic implications for American agriculture, food processors, and consumers. Specialty crop growers and food processors are the primary beneficiaries of the IR-4 Project by having legal access to effective pest management products, but the public also benefits by having a safe, healthy, and reasonably priced food supply.

C. Budget

Funding for the NCR IR-4 program comes primarily from USDA/NIFA as an annual competitive research grant. We received \$1,329,909 for FY24-25. The starting date for the FY24-25 funding was August 1, 2024

D. Overview of Productivity in 2024

This was a productive year for the IR-4 North Central Region. As is the case each year, Field Research Directors (FRD) effectively worked around weather-related events to carry out field trials to completion. NCR hosted an in-person electronic field data book (eFDB) training that was well attended by all the regions' FRDs, OH ARS FRD, and HQ QA. NCR provided funds for the eFDB devices. The FRDs successfully developed best practices with the devices that were key for this year's implementation. The regions collaborated to support the national GLP training webinars with NCR RFC hosting a webinar to contribute information on the different eFDB devices and other tips for successful field implementation. Outputs and positive impacts of IR-4 continue to be highly valued by U.S. specialty crop growers.

E. Challenges

The primary challenge in 2024 was the roll-out of the eFDB devices. The rapid launch of the software led to some unforeseen difficulties in the field because of nuances with the system that FRDs didn't know how to navigate. However, the FRDs did an excellent job in overcoming any difficulties. Challenges for the IR-4 program going forward include efforts to increase funding to keep pace with rising costs to conduct field and greenhouse trials. Researchers conducting the IR-4 trials are provided funding after the work has been completed which presents a hardship for some. Faculty, especially those that are new to their roles, may not have the resources needed to conduct the work and could benefit from having funds made available to them prior to conducting the research. Attracting new researchers to participate in the IR-4 Project is a challenge but necessary to ensure the program's future. Other challenges include the requirement that EPA must further integrate the Endangered Species Act into its pesticide

regulatory process to “ensure the actions they authorize are not likely to jeopardize federally listed species or adversely modify designated critical habitat for listed species”. The implications of this on IR-4 efforts to register new products for specialty crop growers is not clear. Similarly, the EPA announced that new efforts will be made to “better assess human endocrine effects of pesticides” in their registration and review processes.

F. Personnel Changes/Additions in 2024

As of January 1, 2024, Dr. Mary Hausbeck has been serving as the NC Regional Director. The Michigan State University Weed Scientist position search is underway, and they are scheduled to start in the summer of 2025. Dr. Ram Yadav has joined as the Ohio State University Weed Scientist. At South Dakota State University, Graig Reicks will start a new position as the SDSU Weed Ecology Field Specialist on January 22, 2025, and he will be decommissioning his GLP test site and taking on the State Liaison Representative Responsibilities for South Dakota. We are happy to welcome the following new State Liaison Representatives to the North Central Region, Mohammad Babadoost (IL), Suzanne Slack (IA), Ivair Valmorbida (MO), Nevin Lawrence (NE), and Graig Reicks (SD).

G. Regional IR-4 Activities:

Field Research

(Ms. Nicole Soldan)

Food Uses: As a result of the 2023 NC Regional IR-4 Priority Setting Meeting, the subsequent IR-4 Food Use Workshop, and the National Research Planning Meeting, the NC Region conducted 63 food crop field residue trials, 23 product performance trials, and 7 Integrated Solutions projects.

Table 1. 2024 NCR FOOD USE (GLP) RESIDUE AND EFFICACY/CROP SAFETY PROJECTS

2023 Studies	FRD
16 GLP	Chapman, Scott (WI)
18 GLP	Heider, Daniel J. (WI)
1 GLP	Jia, Quan Zai (ND)
20 GLP	Robinson, A. (OH)
2 GLP	Soldan, Nicole (MI)
6 GLP	Wheeler, Celeste (MI)
2 E/CS	Bernards, Mark
9 E/CS	Hausbeck, Dr. Mary (MI)
1 E/CS	Heider, Daniel J. (WI)
3 E/CS	Meyers, Stephen L. (IN)
1 E/CS	Miles, Dr. Timothy (MI)
5 E/CS	Robinson, A. (OH)
1 E/CS	Rothwell, Nikki

1 E/CS	Soldan, Nicole (MI)
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Environmental Horticulture: As a result of the 2023 Environmental Horticulture Prioritization workshop, in 2024 NCR conducted 7 trials to assess the safety of pesticides on ornamental crops and 6 efficacy studies. The outcomes of these projects will help to deliver new pesticide registrations in ornamentals, expand registrant labeling through positive performance data, and enhance their adoption through demonstration of their effectiveness in controlling pests. See the Table 2 for details.

Table 2. 2024 NCR ENVIRONMENTAL HORTICULTURE PROJECTS

Project Title	Protocol	State	Cooperator
NER Regional Root Aphid/Aphid Efficacy	24-017	OH	Canas, Luis
Phytophthora Efficacy	24-006	OH	Hand, Francesca
Boxwood Foliar Disease Efficacy	24-008	OH	Hand, Francesca
New Pest Products Crop Safety - Foliar	24-004	MI	Hausbeck, Mary
New Disease Products Crop Safety - Foliar	24-010	MI	Hausbeck, Mary
New Disease Products Crop Safety - Soil	24-011	MI	Hausbeck, Mary
NCR/WSR Regional Botrytis Efficacy	24-018	MI	Hausbeck, Mary
Pythium & Phytophythium Efficacy	24-007	MI	Hausbeck, Mary
NER Regional Nematode Efficacy	24-020	MI	Quintanilla, Marisol
New Pest Products Crop Safety - Foliar	24-004	MI	Saha, Debalina
New Pest Products Crop Safety - Soil	24-005	MI	Saha, Debalina
New Disease Products Crop Safety - Foliar	24-010	MI	Saha, Debalina
New Disease Products Crop Safety - Soil	24-011	MI	Saha, Debalina

Integrated Solutions: As a result of the 2023 Integrated Solutions Prioritization Workshop, in 2024 NCR cooperators conducted 7 Integrated Solutions projects. With the outcomes of these projects, we expect to better service the needs of the IR-4 stakeholders by integrating products. It will take advantage of the considerable increase in development of efficacious biopesticides that are increasingly playing a more significant role in both conventional and organic agricultural production systems.

Table 4: Integrated Solutions Projects in the NC Region in 2024

Title	Principal Investigator
Root Aphid/ Hemp	Canas, Luis
<i>Phytophthora capsici</i> / Pepper	Hausbeck, Mary
Crucifer Flea Beetle/ Cabbage	Leach, Ashley

Weeds/ Pumpkin	Meyers, Stephen
Camelina Desiccation	Reicks, Graig
Nematode (Root-Knot)/ Tomato	Taylor, Christopher
Herbicide/Hemp	Gage, Karla

Outreach and Collaborative Activities:

Extension and outreach activities included increasing awareness of IR-4 to stakeholders through zoom calls, phone calls, email, and in person meetings and events. We gained several new IR-4 stakeholders that want to be involved for the North Central Region.

NCR State Researchers Participating in the IR-4 Program for 2024

(* indicates State Liaison Representative)

<u>MICHIGAN</u>	<u>OHIO</u>	<u>WISCONSIN</u>	<u>INDIANA</u>	<u>SOUTH DAKOTA</u>	<u>NORTH DAKOTA</u>
M. Hausbeck	A. Leach*	D. Heider*	S. Meyers*	G. Reicks*	B. Jenks*
N. Soldan*	L. Canas	S. Chapman	F. Hand		Q. Jia
T. Miles	F. Hand			<u>Minnesota</u>	
M. Quintanilla	A. Robinson	<u>MISSOURI</u>	<u>NEBRASKA</u>	M. Bernards	<u>ILLINOIS</u>
N. Rothwell	C. Taylor	I. Valmorbida*	N. Lawrence*		M. Babadoost*
D. Saha	<u>KANSAS</u>			<u>IOWA</u>	K. Gage
C. Wheeler	R. Cloyd*			S. Slack*	

Current State Liaison Representative vacancy: Minnesota

NC Region Administrative Advisor

D. Buhler - Administrative Advisor

MSU Leader Lab

M. Hausbeck - NC Regional Director

N. Soldan - Regional Field Coordinator

Field Research Center Directors

MI: N. Soldan

MI: C. Wheeler

WI: S. Chapman and D. Heider

OH: A. Robinson