Joint IR-4 Commodity Liaison Committee + Project Management Committee Spring Meeting

March 4-6, 2025
Agenda and Handouts

AGENDA

Joint IR-4 Commodity Liaison Committee/Project Management Committee Spring 2025 Meeting

Residence Inn – National Mall

333 E St SW, Washington, DC, 20024, Capitol Room

Hybrid Meeting

Zoom link: https://ncsu.zoom.us/j/94343283217?pwd=AYltldLKm4N8HChR8EUVq4Lyro6tpH.1
Meeting ID: 943 4328 3217 | Passcode: 123456

Tuesday, March 4, 2025

- **8:30 am - Friends of IR-4 Business Meeting (Friends of IR-4 Members only)**

- **9:30 am - Joint Project Management Committee/Commodity Liaison Committee**

1. Welcome and comments from the current Chairs (Hengel & Scholz)
2. Approval of minutes; new agenda items (Hengel)
3. 2024 IR-4 Year-End Summary and Update (Baron)
4. CLC Report and Friends of IR-4 Update (Scholz and Beaudreau)
    a) CLC membership
    b) Advocacy Plans
5. Status of funding/grants (Baron)
    a. NIFA
    b. ARS-QA travel and UMES Ornamental research
    c. NRSP-4
    d. University indirect cost
    e. Cost saving measures
6. Global Harmonization of Pesticides/Minor Use Foundation (Gore)
7. Priority Setting/New Research (Axtell)
    a. Debrief from 2024 Priority Setting Workshop
    b. Key dates associated with 2025 priority setting

- **Noon - Lunch - Comments for USDA-NIFA; Dr. Manjit Mirsa**

- 1:15 pm Joint Project Management Committee/Commodity Liaison Committee, continued

8. Reboot of Integrated Solutions Platform (Axtell)
9. Comments from USDA-OPMP (K. Nesci)
10. Status of Executive Director Search (Chojnacki)
11. Awards

- 5:00 pm – Adjourn

- 5:30 pm – 7:30 pm CLC/PMC Reception at: Hyatt Place - National Mall, 400 E Street SW, Washington, DC 20024, Potomac Room 4 and 5

Wednesday, March 5, 2025

- 8:30 am - Joint Project Management Committee/Commodity Liaison Committee, continued

12. Management Reports
    a. Administrative Advisors (Buhler, et.al)
    b. NIFA Report and other topics (Philips)
    c. Regional/ARS Reports (Zebelo, Hausbeck, Gu, Hengel, and Simmons)
    d. HQ Report
    e. Grant Processing (Chojnacki)
13. Program/Platform Reports
    a. Food Program
        i. Residue Research
            1. Field Program and Submissions
            2. Laboratory Analysis
                a. Alternatives to storage stability
            3. QA, including EPA Audits
        ii. Product Performance Research
        iii. Integrated Solutions Platform
        iv. Biopesticide Regulatory Support (Barney)

- Noon – Lunch

- 1:00 pm - Joint Project Management Committee/Commodity Liaison Committee, continued

    b. Environmental Horticulture
    c. Communications (Ross)
    d. Education and Training (Dineen)
        i. National SOPs
    e. Path Forward 2.0
        i. Training Modules (Welker)
        ii. Technology Team (Byrtus)
        iii. Network Expansion Taskforce (Patel)

14. E-FDB
    a. Electronic signatures
15. Coordination of meeting coverage
16. Upcoming Meetings (Chojnacki)
    a. Summer PMC meeting: July 8-10, Virtual
    b. 2025 Food Program Workshop: September 9-11, Denver CO
    c. 2025 EH Workshop: October 7-8, Kansas City, MO
    d. Fall PMC meeting: October 9-10, Kansas City, MO
    e. NRPM: October 28-29, Raleigh, NC
    f. National Education Conference: February 3-5, Charleston, SC
    g. 2026 Joint CLC/PMC meeting: March 3-5, Washington DC
17. Other topics/Adjourn

- 5:00 pm – 7:00 pm Reception in House Agriculture Committee Hearing Room, 1300 Longworth Building

Thursday, March 6, 2025

- 8:30 am - Executive Session
- 11:30 am - Adjourn & lunch on your own

Approval of Minutes, New Agenda Items

Presenter: Matt Hengel

MINUTES
Project Management Committee
Fall 2024 Meeting
July 9-11, 2024
Hybrid Meeting

MOTIONS AND ACTION ITEMS

Motions/Consensus Items:

1. A motion to approve the 2024 Summer PMC meeting minutes was made by Alvin Simmons, seconded by Liwei Gu; **unanimously approved.**
2. A motion to approve adding Laura Shumow from the American Spice Trade Association as a member of the Commodity Liaison Committee was made by Todd Scholz, seconded by Jerry Baron; **unanimously approved.**
3. A motion was made to maintain the Biopesticide Support Program made by Jerry Baron; seconded by Todd Scholz; **unanimously approved.**
4. A motion was made to approve the Process to Assess a New Request for Biopesticide Regulatory Assistance document, as proposed, was made by Todd Scholz, seconded by Matt Hengel; **unanimously approved.**
5. **Consensus:** Take the 12 project prioritized during the 2024 Food Use Workshop and develop protocols over the next 18 months and the projects would start in 2026, and resume reaching out with possible cooperators to discuss the project.
6. **Consensus:** Approval to remove the paper field databook from the website, if a copy is needed it will need to be presented to Dr. Debbie Carpenter.
7. A motion was made to adjourn the meeting at 11:26 am by Alvin Simons seconded by Todd Scholz; **unanimously approved.**

Action Items:

1. **Action Item:** (Chojnacki) Take back to management team to assign areas of responsibility to update the National Directory and bring forth at the NRPM the list each year for the RFCs to access; keep under secure system for internal use only.
2. **Action Item:** (Byrtus) Send out an email survey inquiring about priority setting workshop, tour and other aspects if people would want to attend the tour.
3. **Action Item:** (Dineen) The PMC empowers the SOP and Advisory committees to move forward with moving the advisories as presented into National SOPs.

Members:

Jerry Baron; IR-4 Executive Director
Liwei Gu; Regional Director-SOR
Mary Hausbeck; Regional Director - NCR
Matt Hengel; PMC Chair; Regional Director-WR
Joe Munyaneza; ARS AA
Christopher Philips, USDA NIFA
Todd Scholz; CLC Chair
Alvin Simmons; USDA-ARS
Simon Zebelo; Regional Director - NER

Presenters:

Alice Axtell, IR-4 HQ
Philip Moore; IR-4 HQ

Bill Barney; IR-4 HQ
David Beaudreau; DCLRS
Jimmy Byrtus, IR-4 HQ
Debbie Carpenter; IR-4 HQ
Krystal Chojnacki; IR-4 HQ
Christina Dineen; IR-4 HQ
Anna Gore; MUF
Cristina Marconi; IR-4 HQ
Johanna Mazlo; IR-4 HQ
Jaimin Patel; IR-4 HQ
Thomas Pike; IR-4 HQ
Hannah Ross; IR-4 HQ
Amy Upton; CLC
Robert Welker; IR-4 HQ

Wednesday October 23, 2024 3:00 pm to 4:30 pm ET

Matt Hengel called the meeting to order at 3:00 pm.–

1. Welcome and Introductions.
   - M. Hengel welcomed the group to the All Hands Meeting.

2. Program Successes (PowerPoint)
   - J. Baron reported: why the work of IR-4 matters; internal and external challenges to our work and that IR-4 is technology neutral; reviewed the work we do to assist the producers with pest management needs; accomplishments by-the-numbers; deliverables in the residue and integrated solutions platforms; and thanked the group for their work to bring forth these successes.

3. Introduction of new Environmental Horticulture Program Manager
   - J. Baron reported that unfortunately the hire fell through and the position would be reposted

4. eField Databook (Handout)
   - P. Moore reported:
     - That it has been a year since the full implementation of the eFDB; thanked the group for their efforts to adopt the eFDB and attend trainings;
     - Moving forward into 2025, paper field data notebooks will not be allowed and that change will be reflected in the new protocol with a few exceptions for retiring FRDs until 2026; PMC formal approval of changes will be requested;
     - We are testing a new system for facility files in 2025;
     - There are updated forms based on users requests to resolve issues;
     - New features are being reviewed including voice to test and adobe certificate;
     - Some additional changes that were discussed being made are being deferred for this year due to high cost and late implementation timeline;
     - Discussions on removing some data prompts that may not be necessary; and
     - The limits on license has been met with 100 users and how to manage that moving forward.
   - A discussion was held regarding how a retiring FRD will be defined; implementation communication efforts; new eFDB SOPs and handling the SOPs in Canada; whether the license limit was per user name or varied on access level; that we are not discouraging new FRDs; and in the future, reaching out to RFCs to review their list of users.

5. Technology Team (Handout)

- J. Byrtus reported: that the technology team has been meeting monthly; currently exploring eQA updates and testing; working to identify database options; and reviewed several database provider options and pros and cons of each system.
- A discussion was held regarding no/low code options; timelines for potential implementation; and the opportunity to build and integrate an app.

6. New Protocol Template (Handout)
    - C. Dineen reported that a finalized new residue template will be available for 2025 research; training is scheduled to review the template and the focus will be the field section; that the template is still long; and asked for feedback to resolve any issues as soon as possible.

7. IS Listening Session (Slides)
    - A. Axtell reported that the PMC charged HQ to engage in listening sessions on the IS program; a survey went out and 14 responses were received; and reviewed the feedback received from both the survey and a listening session that took place at the 2024 Food Use Workshop.

8. Research Symposium Update
    - A. Axtell reported that the 2024 Research Symposium will be deferred until 2025 and will be examined if this is the best way to distribute the information.

9. Communications Update (Handout)
    - H. Ross reported:
        - Branding updates and refreshing of outreach materials;
        - Developing crop-specific handouts for regions;
        - A new outreach toolkit in a shared drive with materials that will be available in the intranet in the future;
        - A new PUP instructional video completed and tracking of video viewership;
        - Digital updates including news stories, social media posts, and newsletter; and
        - The status of the intranet build-out; and reviewed IR-4 Awards.

10. Educational and Training Committee Update/Preliminary Plans for the 2026 NEC (Handout)
    - C. Dineen reported:
        - NEC date and location is set for February 3-5, 2026 in Charleston, SC;
        - The E&TC will be working to develop content and the agenda in the coming months;
        - A survey would be distributed early 2025 to submit ideas for training topics;
        - The NEC will include an optional field tour; and
        - E&TC are reviewing upcoming training opportunities that are being offered.

11. Reestablishment of National Directory on Website
    - K. Chojnacki reported that the national directory was taken down for a 6-month period to assess how many folks made inquiries requesting contact information and the result was minimal. K. Chojnacki further reported that this agenda item was to discuss the necessity of keeping the contact listing or not and if so, a process for keeping updated lists.
    - A discussion was held regarding personnel who have noticed that it is gone; whether this should be on the intranet and not public facing; ownership of each section needs to be established; reaching out to people to update that list in a consolidated effort for one year; and updating the FRD list near protocol development.

- **Action Item:** (Chojnacki) Take back to management team to assign areas of responsibility to update the National Directory and bring forth at the NRPM the list each year for the RFCs to access; keep under secure system for internal use only.
- The FRD list would need to be sent out for review prior to the NRPM by a week.

12. Closing remarks
    - Jerry thanked everyone from the regions and field offices for their many contributions.

The meeting recessed for the evening at 4:53 pm.

<u>Thursday October 24, 2024 8:00 am to 5:00 pm ET</u>
Matt Hengel reconvened the meeting at 8:00 am. --

13. Approval of minutes & new agenda items (Handout)
    - M. Hengel initiated introductions around the room and on zoom.
    - **A motion to approve the 2024 Summer PMC meeting minutes was made by Alvin Simmons, seconded by Liwei Gu; unanimously approved.**

14. Grant Items & CLC Update (Handouts)
    - K. Chojnacki reported that all of the 2024 subawards and NC State researchers segments have been completed; reminded that the current grant's end date for subawards will be April 31, 2026 to ensure all funds have been spent; and reviewed components of the new forthcoming grant.
    - A discussion was held regarding setting up meetings to discuss subaward language; whether or not the new award will be non-competitive or not.
    - D. Beaudreau reported election results will impact what happens with the federal budget and/or continuing resolution beyond December; possibility for small omnibus package with small increase for IR-4; Farm Bill is still in play but it is not likely to get completed by the end of the year; outreach is underway to ask for increased funding as well as maintaining ARS funding; after election, the majority will control the meeting rooms for us to make requests for utilizing space for the reception; and meeting with the White House OMB to highlight the program in January and funding needs (NIFA/ARS).
    - A discussion was held regarding election results for the House and Senate, potential advocates for IR-4 among those elected, and potential changes to the Secretary of Agriculture.
    - T. Scholz provided an update on a new CLC member Laura Shumow, Executive Director of the American Spice Trade Association.
    - **A motion to approve adding Laura Shumow from the American Spice Trade Association as a member of the Commodity Liaison Committee was made by Todd Scholz, seconded by Jerry Baron; unanimously approved.**

15. Management Reports
    - Administrative Advisers
        - NCR: D. Buhler (written report submitted) reported that: the NRSP-4 renewal draft prepared by Jerry has been sent to the AA's and a set of stakeholders for review; he currently has five returned reviews and hope to get a couple more before he completes the review package and provide it to Jerry for incorporation into the final renewal request; that there is still time for additional input as my report to Jerry is due by December 1; that Jerry then has until January 15 to revise, prepare a response

to the reviews, and submit the final to the NRSP review committee chair; and that the reviews so far have been positive so I don't expect you will be looking at major revisions.

- NIFA Update
  - C. Phillips reported that he is working with Jesse Ostrander to gather information on grant options and that Drs. Samuel-Foo and Goswami both received promotions and this has resulted in staff shortage.
  - A discussion was held regarding past issues with RFA's and amendments.
- ARS Update
  - A. Simmons shared comments on behalf of J. Munyaneza: the national program for crop protection and quarantine, that includes IR-4 expires next year; and a review of the national program to renew it for an additional five years (excluding the IR-4 component which undertakes an internal review).
  - A discussion was held regarding the ARS budget cuts, programmatic impacts, and the positive impacts of advocacy for the IR-4 Program.
- Regional Updates
  - NER (Handout): S. Zebelo reported: that they are approving no cost extensions for researchers and extending subawards; UMES is changing electronic financial system on November 15; changing from Gmail to Outlook; the IR-4 greenhouse has been completed and trials are underway; USDA administrators visited the new greenhouse; and 2023 trials are almost complete and most reports are submitted.
  - NCR: M. Hausbeck reported: the submission of an extension article to recap the Food Use Workshop that will be widely distributed; worked on getting SLRs established in the region; working on the planning for the earlier grant deadline end date and issues with issuing PO's and subawards; new hires and researchers are more pesticide adverse; and new researcher's needing funding upfront to start the research.
    - A discussion was held regarding 50% funding to start but it still comes in after the research has started; funding comes in late and so often they pay 100% up front; issues with funding levels are too low for the research; and considerations of taking on less projects to adequately fund research.
  - SOR (Handout): L. Gu reported: the President of the University has resigned; there were 26 applications for the RFC position and the committee selected Kristen Seater-Jones for the permanent position; field program is progressing well; the field site in Homestead is not up and running until a new research coordinator is hired; the lab has submitted 8 ASRs and more are underway; the new zero-day stability requirement is causing some delays; there are five projects under backlog; they hired a new Chemist; and the QA team has finished 70% of their yearly assignments.
    - A discussion was held regarding the great job Kristen is doing as the Southern Region RFC and the zero day storage stability requirement.
  - WR: M. Hengel reported: they are still dealing with issues from the financial system update; reviewed retirements; field research is underway; Sherita retired and was hired at Headquarters; Laurel Hsieh has been hired as a QA auditor; lab has completed 8 ASRs with 4 being shipped to Headquarters; storage stability delays; the lab will shut down for a short time for seismic renovations; and reviewed retirements from the lab.
    - A discussion was held regarding the process for appointing a State Liaison Representative.
  - ARS: A. Simmons reported: the EHC program at ARS is doing excellent; current concerns about funding; reviewed staff vacancies and updates on filling those

vacancies; ARS's transition updates to the eFDB; the two recent hurricane's impact was minimal to operations; the ARS five cooperative agreement expires on July 31, 2025; and the current Undersecretary for REE visited Charleston and was invited to come to the 2026 National Education Conference in Charleston, SC.
        - A discussion was held regarding and ARS grant to the Western Region.
- Headquarters report
    - J. Baron reported: on senior leadership changes at NC State; on personnel changes at IR-4 Headquarters; a failed Environmental Horticulture Program Manager search and steps to move forward; the ARS 5 year agreement leaving; Jerry has rejoined the Minor Use Foundation Board; and Jerry was interviewed on a "I see Dead Plants" and "World of Blueberries" podcasts

Break at 10:10 am. The meeting reconvened at 10:25 am.—

16. Program Reports
    - Food Program
        - Field Residue Studies (Handout)
            - C. Marconi reported: on the residue program by the numbers for 2023-2025; reviewed outstanding field data notebooks overall and by region; there are about sixty studies in final report processing; there are more than 100 studies held up for submission for various reasons;
            - C. Marconi and T. Pike reported on challenges including: the analytical backlog and delayed field data books; and the result being we miss a submission window and it can be delayed by years; the Endangered Species Act; registration statuses in Europe and impact on how active ingredients move forward; delays by registrants; and the need for pollinator data.
            - A discussion was held regarding the new pollinator data requirement; if any studies have been made to repeat the analytical testing of residues; in Europe established MRLs are being reduced; and outstanding field data books.
        - Submissions (Handout)
            - T. Pike reported: there have been 7 tolerance actions to date this year with 930 new uses; there have been 6 submission to date; and crop group updates including revisions waiting to be published.
        - Laboratory activities (Handout)
            - D. Carpenter reported: that there has been discussion of the status of each analytical laboratory and its backlogged studies; concerns of viability of samples; issues with the Wapato lab, corrective measures taken and that there will be no future assignments right now; and reviewed plans for moving forward with each lab on their backlogged studies.
        - Quality Assurance (Slides)
            - J. Mazlo provided updates: that Dan Myers is the new EPA OECD representative; Del Monte research site decommissioning; recent inspections; audit and inspection data for 2022-2024; new QA staff; efforts to support lab and field research directors; moving to a new version of eQA; efforts in the roll-out of the eFDB; and participation in various headquarter initiatives.
        - Results of Food Use Workshop& NRPM (Handout)
            - A. Axtell reported: that there were 13 residue projects, 24 residue and performance component projects prioritized at the Food Use Workshop; there were 11 H+ performance projects prioritized; 8 priority upgrade proposals/regional upgrades were prioritized; there were 13 integrated

solutions projects prioritized by using combined funding from NIFA, CDFA, and a third part funder; and that Integrated Solutions trial assignments have been halted until PMC discussion.

- Integrated Solutions Platform (Handout)
  - A. Axtell provided an overview of the 2023-2024 Integrated Solutions activities, successes, and challenges including: carryover trials, identifying researchers, protocol timelines, CDFA funding, programs operating in siloes, and a current review of the program underway.
  - A discussion was held regarding: tracking deliverables from researchers (papers/presentation) at the time the report is submitted; including extension deliverables; merging Integrated Solutions and Biopesticide Platforms, and issues with that.

- Biopesticide Regulatory Support Platform (Handout)
  - B. Barney reviewed: projects submitted to EPA and that they generally take 2 years to go through approval; submission packages in development; recent regulatory requests.
  - J. Baron reported: he reached out to several biopesticide stakeholders to gather comments as to whether to maintain the platform and the response was positive; on the new assessment protocol for Biopesticide Regulatory Assistance; feedback from stakeholder on secondary vetting points assigned and changes made as a result; and asked two questions for consideration of the PMC: Should IR-4 maintain a Biopesticide Regulatory Support Platform? and Should we accept the proposed screening process.
  - **A motion was made to maintain the Biopesticide Support Program made by Jerry Baron; seconded by Todd Scholz; unanimously approved.**
  - A discussion was held regarding merging the Integrated Solutions and Biopesticide programs; the biologist's workload and missing expertise with regulatory; merging the Biopesticide program with the residue program; using the Integrates Solutions Platform for efficacy of registered Biopesticide products; how many submissions we get each year for the Biopesticide program (1-3); and considering the quality of the proposal.
  - **A motion was made to approve the *Process to Assess a New Request for Biopesticide Regulatory Assistance* document, as proposed, was made by Todd Scholz, seconded by Matt Hengel; unanimously approved.**

Break at 12:15 pm. The meeting reconvened at 1:00 pm.—

- Environmental Horticulture
  - J. Baron reported: that headquarters is maintaining the forward progression of the Environmental Horticulture (EHC) program; continuing to receive reports and working to navigate the database; and at end of November a portal will be opened for researchers to sign up to perform 2025 research.
  - A discussion was held regarding: putting out a positive update to current researchers on where we are at in the process; the 2025 Environmental Horticulture Priority setting session being held virtually versus in-person; if in person Charlotte may be too far for travel for western region; enlisting scientists to help facilitate sessions; teaching schedules preventing stakeholders from attending (How important is the tour to you – scale); and determining if we need to have a tour.
  - **Action Item**: (Byrtus) Send out an email survey inquiring about priority setting workshop, tour and other aspects if people would want to attend the tour.

17. International/ Minor Use Foundation (Slides)
    - A. Gore reported: on the status of Archive Studies with 13 studies (17 trials); new award from USDA FAS ASCE, that IR-4 will be a collaborator and what a collaboration could look like; and that they will be holding their global priority setting process in January 2025.
    - A discussion was held regarding IR-4's role in the grant, the scope of work for several other ASCE funded projects, generating an MOU for future collaborative work, and if there was a need for efficacy/crop safety work.

18. Sponsored Research Policy (Handout)
    - J. Baron reported: that IR-4 has had a sponsored research program since 1992; that an updated version has been created to share with the PMC;
    - A discussion was held regarding cost accounting, IDC rates, funding required upfront, and unrestricted donations to NC State. A further discussion was held regarding the need for such a policy and it was determined that the group would provide feedback but no formal adoption was necessary as this was an informal process unique to each institution.

19. IS Program Changes (Handout)
    - J. Baron reported on the original Integrated Solutions (IS) goals; the definition of success for the program; the idea of decoupling the IS workshop from the food workshop; Staging "fast track" or " Normal Track" IS projects; guardrails for the program that allows our input into the work; cost recovery for analytical lab work; while there is a lot of interest in IS, there is not adequate funding for the projects; shared a proposed plan for moving forward this year; potential cooperation with Western Growers Platform 10 or the Canadian Pest Management Centre; and presented pressing questions about the IS reboot.

Break at 3:01 pm. The meeting reconvened at 3:10 pm. –

Discussion continued on item #19.

- An in-depth discussion was held regarding: considerations to our backlog in making IS decisions; that mission creep is being talked about for projects that don't proceed to registrations; that IS is a space for research and development for IR-4; each IS project is a small applied research project that before would have been funded by USDA (but not longer) so IR-4 is the only current funder; how to measure the success rate and to ensure a rigorous selection process; protocols could also be more rigorous and involve companies (regulatory groups and biology groups); the simple form is advantageous because we received requests from not just researchers but also growers and commodity groups; two tracks could address this with a vetted proposal by a researcher and normal track for ideas that require more information; OK to put CDFA projects on normal track; and that IS projects should resubmit each year rather than carrying them over.
- A further discussion as held to delay the 2025 IS projects, bank the funding until 2026.
- **Consensus:** Take the 12 project prioritized during the 2024 Food Use Workshop and develop protocols over the next 18 months and the projects would start in 2026, and resume reaching out with possible cooperators to discuss the project.

20. National SOPs (Handout)
    - C. Dineen reported on: four national SOPs currently in progress; once SOPs are completed there will be a webinar, along with QA to discuss them and the implementation of them and retiring their old SOPs; two advisories that are currently being updated; there is a

potential to move advisories to National SOPs and the pros of doing that; and asked if the PMC would be supportive of moving identified advisories to National SOPs.

- A discussion was held regarding the age of the advisories, the ease of transferring those to National SOPs in the eQA system, if we would require CRO's to adopt the National SOPs, and if the SOP and Advisory committee's need to come back to the PMC for review of these items each time they produce one or could it be delegated to Testing Facility Management.
- **Action Item**: (Dineen) The PMC empowers the SOP and Advisory committees to move forward with moving the advisories as presented into National SOPs.

21. New Employee orientation module(s) (Handout)
    - R. Welker reported: that the outline of training topics has been completed; training presentation draft will be available for review mid-February 2025; the training committee will review the presentation; and that it will be broken up into several modules.

22. Network Expansion Project (Handout)
    - J. Patel reported: on monthly meetings underway; a recent publication submission; resources developed for engaging new researchers; an upcoming Small Farmers conference at UMES; and presentations that have been made by the IR-4 Biology team.
    - A discussion was held regarding how to join the Network Expansion Team.

23. Ways of working – Update (Slides)
    - J. Baron reported: on challenges presented by registrants; timeline constraints on workload for study directors, RFCs and biologists; limitations on research by the registrants; incomplete directions for use; growing complexity of getting test and reference substances; and improvements to simultaneously submitting protocols with residue and performance work to registrants.
    - A discussion was held regarding jointly sending over residue and performance protocol drafts and final versions.

24. eField Databook (Handout)
    - P. Moore reported: on eField Databook (eFDB) usage by the numbers; reviewed current status and the future plans for eFDB 2.0; in 2025 IR-4 will move to full eFDB implementation (no more paper); plans to remove the old paper FDB from the website in 2025; and that we at the limit for users on the license.
    - A discussion was held regarding the availability of HQ staff for training and support, if the drench application can be included (yes), the high number of Canadian users, the data loss event, ways to back-up data, and if HQ will continue to QC.
    - **Consensus:** Approval to remove the paper field databook from the website, if a copy is needed it will need to be presented to Dr. Debbie Carpenter.

25. Future Meetings
    - M. Hengel reminded members to add these dates to their calendars.
        - Spring PMC/CLC Meeting: March 4-6
        - Summer 2025 PMC Meeting: July 8-10 (Canada)
        - Food Use Workshop: Sept. 9-11
        - Environmental Horticulture Workshop: October 7-9
        - NRPM/Fall 2025 PMC Meeting: October 20-24
        - 2026 National Education Conference: Feb. 3-5

The meeting recessed for the evening at 5:38 pm.

Friday October 25, 2024 8:00 am to 12:00 noon ET

Matt Hengel reconvened the meeting at 8:00 am. --

26. Executive Session I
    - The Members convened to executive session at 8:00am.

Break at 9:45 am. The meeting reconvened at 10:00 am into general session. –

27. Environmental Horticulture Program Review (Slides)
    - A. Upton shared slides reporting: the last EH Program assessment was performed in 2008; conducted listening sessions across the country as well as developed a survey; and review committee will be in-person at the next EHC Priority setting workshop with a final report being submitted to the PMC at the March 2026 meeting.
    - A discussion was held regarding feedback received about the IR-4 EH program from other events, holding an in-person or virtual workshop in 2025, and potentially changing the review panel in-person discussion to an earlier time.

28. Executive Session II
    - The Members reconvened to executive session at 10:21.

The members reconvened into regular session at 3:09 pm with no reportable actions.

29. Adjourn

A motion was made to adjourn the meeting at 11:26 am by Alvin Simons seconded by Todd Scholz; unanimously approved.

MINUTES
Project Management Committee
Special Meeting
February 6, 2025
Virtual

MOTIONS AND ACTION ITEMS
None.

Members:
Jerry Baron; IR-4 Executive Director
Doug Buhler; Administrative Advisor - NCR
Matt Hengel; Regional Director-WR/PMC Chair
Mary Hausbeck; Regional Director – NCR
Marcel Holyoak; Administrative Advisor – WR
Moses Kairo; Administrative Advisor - NER
Joseph Munyaneza; Administrative Advisor - ARS
Alvin Simmons; USDA-ARS
Simon Zebelo; Regional Director – NER

Staff:
Deborah Carpenter; IR-4 HQ
Krystal Chojnacki; IR-4 HQ

Thursday, February 6, 2025 11:30 am EST to 12:30 pm EST

-- Dr. Matt Hengel called the meeting to order at 11:30 am --

1) Executive Session

- The Members convened to executive session at 11:30 am.

The meeting reconvened at 12:30 pm into general session with no reportable actions.

The meeting adjourned at 12:31 pm.

2024 Year End Summary

Presenter: Dr. Jerry Baron

IR-4 Project

IR-4 Project

Pest management solutions for specialty crops and specialty uses

2024 YEAR-END SUMMARY

Prepared by IR-4 Headquarters

Dear friends,

Reflecting on IR-4's recent accomplishments, 2024 featured an unwavering dedication to our core mission: ensuring growers' toolboxes are well-equipped to grow healthy specialty crops (from food to ornamentals). Our team implemented new ways of working and made progress towards innovative goals, even as the world of crop protection product registration work grew increasingly complex. IR-4 continues to deliver meaningful results and successfully navigate hurdles.

The IR-4 team conducted vital research in 2024, guided by needs voiced by growers. For example:

- The Food Program conducted residue trials for effective products to manage coffee rust, onion thrips in onion, red rice in rice, and herbicides to manage glyphosate-resistant weeds.
- The Environmental Horticulture Program assessed boxwood foliar disease product efficacy.
- The IS Platform evaluated several chemistries for rice root aphids in greenhouse-grown hemp.

In 2024, IR-4 fully implemented electronic field data books (eFDBs) across the organization, following several years of customizing and testing the tailor-made software. We commend our team for coming together to make this possible. Our team also took steps to reboot the Integrated Solutions (IS) and Biopesticide Regulatory Support Platforms; this work will continue in 2025.

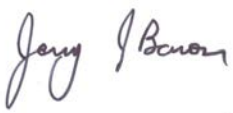
Two new committees were formed in 2024: the Networking Task Force to engage more researchers from minority-serving land-grant institutions and Cooperative Extension in IR-4's work, and the Technology Team to investigate possible tech improvements for the organization. Additionally, IR-4 updated its visual identity and created instructional videos to reach new stakeholders.

Many issues added complexity to our 2024 work, including the Endangered Species Act mitigations, pollinator protection, industry timelines, and global regulatory trends. As an intermediary between stakeholders and the regulatory process, IR-4 is in a unique position. Our team remains highly productive; submitting to the U.S. EPA and getting tools to growers is simply slower and more complicated. Nonetheless, IR-4 remains poised to adapt, thanks to strong relationships with partners and deep internal expertise.

As new tools become necessary and the regulatory process grows more challenging, IR-4's stakeholder-driven work serving specialty crop growers is critical. Our collaborators will continue to rely on the expertise of IR-4 to push solutions forward and help communicate shifting regulatory requirements. Our team proudly serves as advocates, supporters, subject matter experts, and problem-solvers.

We look forward to continuing this purpose-driven work in 2025 and beyond.

Sincerely,



Jerry Baron

Jerry Baron
Executive Director
The IR-4 Project

IR-4 2024 Summary

FOOD CROP PROGRAM

Successes

- **52** new tolerances for **8** active ingredients were established by U.S. Environmental Protection Agency (EPA) resulting in **1024** potential new product uses on food crops.

Regulatory Actions

- **9** tolerance petitions were submitted to EPA and **1** Final Reports to the registrant for Label Expansion or Conditional Registration. These covered **48** unique requests for assistance and crop group tolerance updates.
- **3** biopesticide submissions were made, with two addressing citrus greening and the third addressing cucumber green mottle mosaic virus.

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

ENVIRONMENTAL HORTICULTURE PROGRAM

Successes

- At this time IR-4 does not have an accurate assessment of new registrations achieved in 2024. This information will be obtained during the second quarter 2025 with responses to inquiries from cooperating 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

WORKFLOW ENHANCEMENTS

- We fully implemented electronic field data books (**eFDBs**) across the organization.
- Our team made significant strides in **reducing the backlog** at our analytical laboratories.
- We created **4 new instructional videos** on the IR-4 research process to aid expanded outreach efforts. Find them at **ir4project.org/industry-resources**.

The Year End Summary is a synopsis of our Annual Report. Scan to find the full report on ir4project.org.

Contact the IR-4 Project

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NC STATE

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IR4project.org

USDA

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2022-79111-38469 with substantial cooperation and support from the State Agricultural Experiment Stations, USDA-ARS and USDA-FAS. In accordance with Federal Law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age or disability.

Debrief from 2024 Priority Setting Workshop

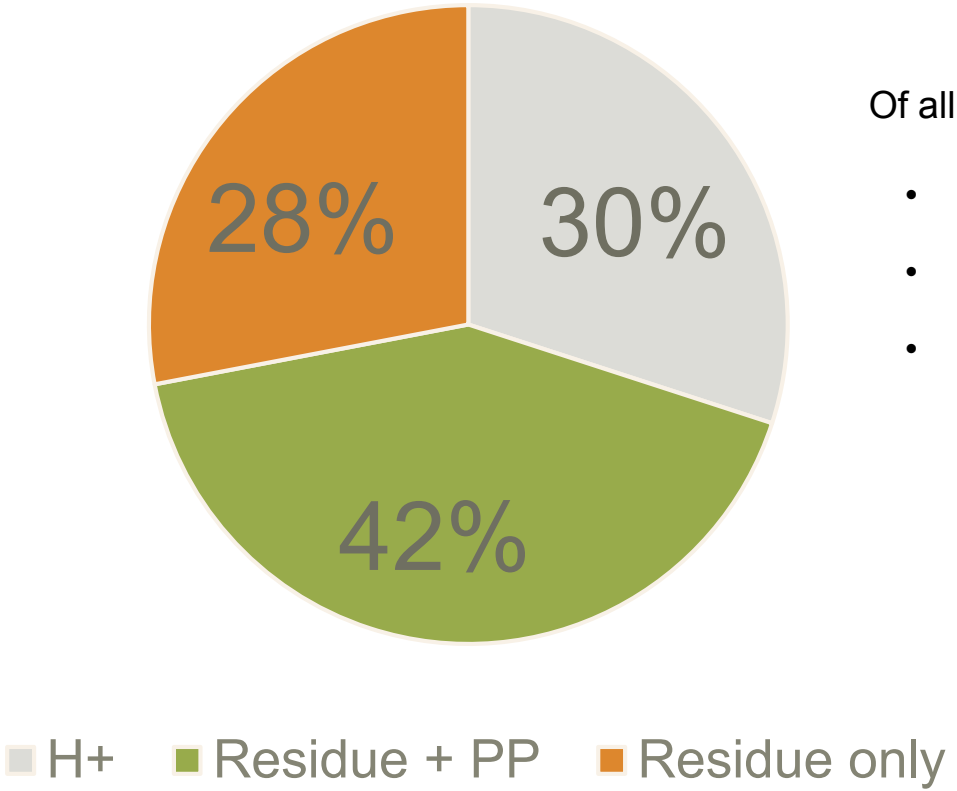
Presenter: Dr. Alice Axtell

Debrief from 2024 Priority Setting Workshop

A. Axtell

FUW Debrief

Performance & Residue: New Priority Ratios



Of all new 2025 research priorities (48 + 6 PUPs/RUs):

- 28% requires **Residue data ONLY**
- 42% requires **Residue & PP** data
- 30% requires **Efficacy data ONLY**

IR-4 Project

Product Performance (PP)

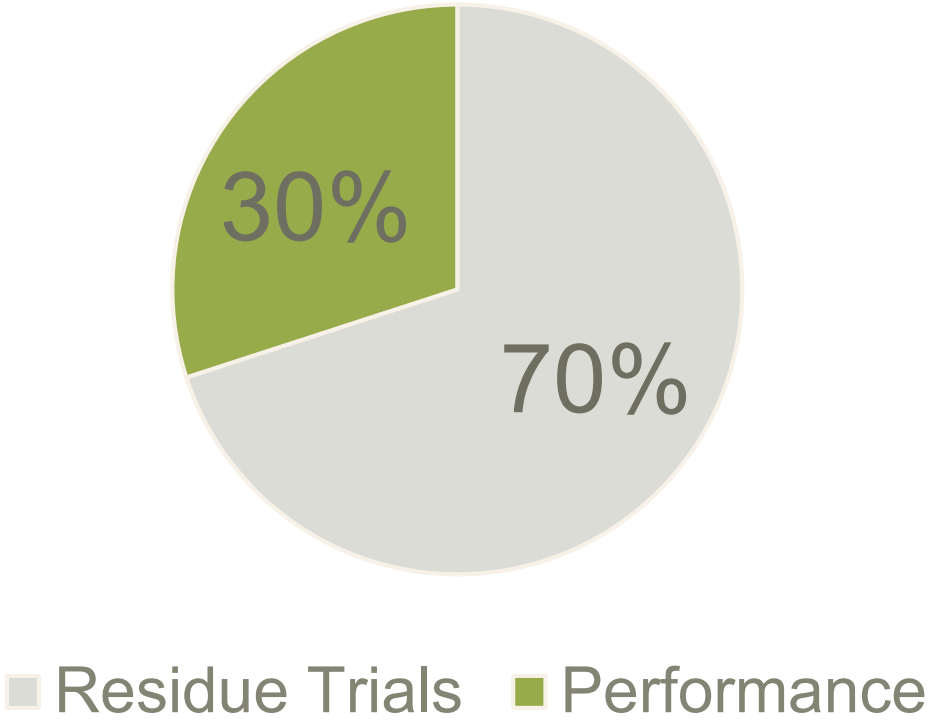
Total Number of PP Studies

	[1]NEW "H+"	[2]NEW "A"	Carryovers	TOTAL
[3]Studies	16	22	40	78
Trials	46	48	54	148

[1]Includes 1 Priority Upgrade Proposal (PUP) and 3 Regional Upgrades (RUs)
[2]Includes 1 PUP
[3]FUW outcomes: 11 H+ priorities & 37 "A" priorities

IR-4 Project

Performance & Residue: Trial Ratio

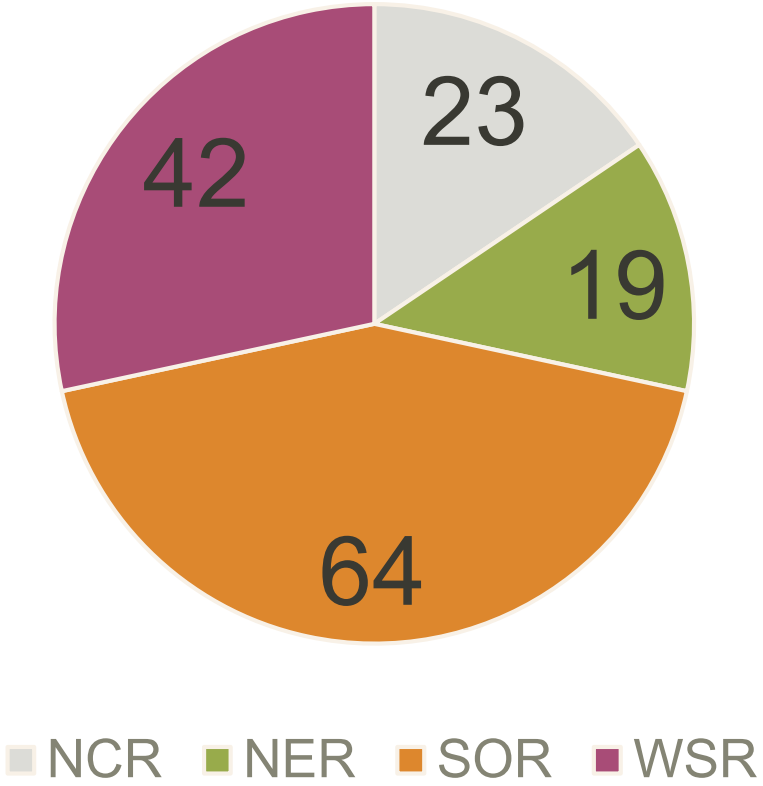


Among a total of 500 trials in 2025:

- 30% is **Performance** trials
- 70% is **Residue** trials

IR-4 Project

PP Trial Distribution by Region

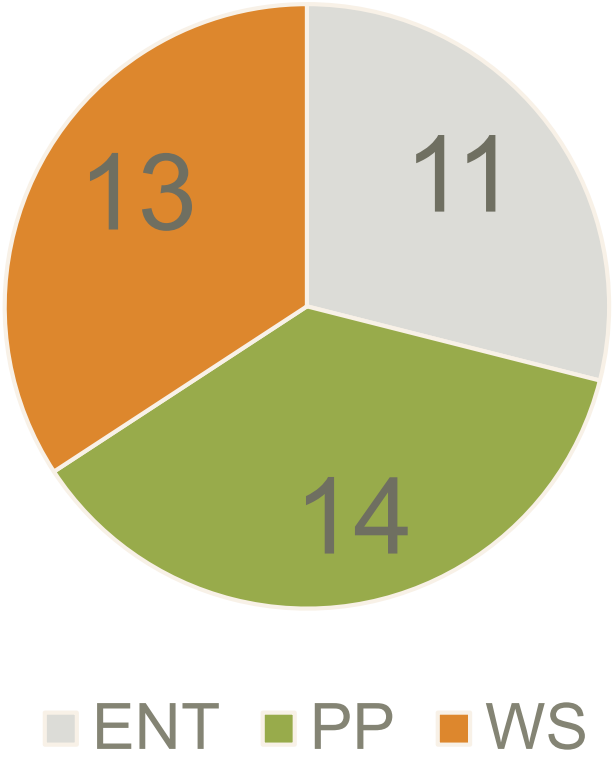


Of 148 product performance trials:

- 62 will be conducted in **WSR**
- 42 will be conducted in **SOR**
- 23 will be conducted in **NCR**
- 19 will be conducted in **NER**

IR-4 Project

Priority Distribution by Discipline



Of 38 new product performance priorities:

- 11 are **Entomology** projects
- 14 are **Plant pathology** projects
- 13 are **Weed Science** projects

IR-4 Project

Resource Allocation

Total 2024 NIFA allocated budget (w/ IDC[1]): $1,200,000

- **NIFA** (w/IDC) spent: $1,195,555 ($4,445 left to allocate)
- **CDFA** (w/IDC): $ 60,000 (PR# 13828: Olive / ACC)
- **Third Party** budget (w/IDC): $63,000 (BASF, TKI, Nuseed)
  - **TOTAL=** $1,318,555
  - **Average cost per trial** ~$9,000

[1]IDC= Indirect cost (11.111%)

Integrated Solutions

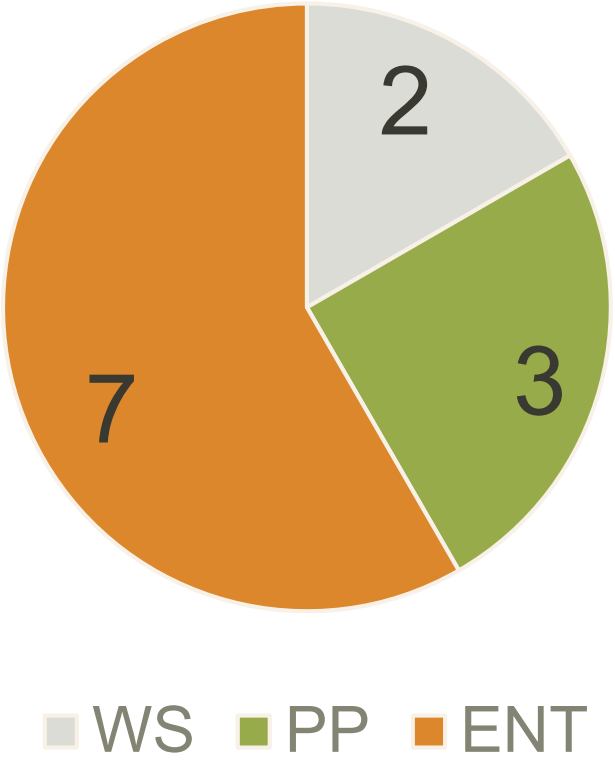
Total Number of IS Studies

	NEW "A"	Carryovers	TOTAL
Studies	12[1]	15	27
Trials	~36	18	~54

[1]Of the 12 priorities, 8 are covered by NIFA and 4 are funded by CDFA

IR-4 Project

Priority Distribution by Discipline



Of 12 new IS priorities:

- 7 are **Entomology** projects
- 3 are **Plant pathology** projects
- 2 are **Weed Science** projects

IR-4 Project

Resource Allocation

Total 2025 NIFA allocated budget (w/ IDC[1]): $600,000

- **NIFA** (w/IDC) spent on carryovers: $98,000
  - $502,000 left to allocate to new priorities
- **CDFA** (w/IDC): $ 82,222 (on carryovers)
- **Third Party** budget (w/IDC): N/A

[1]IDC= Indirect cost (11.111%)

Thank you!

Key Dates Associated with 2025 Priority Setting

Presenter: Dr. Alice Axtell

IR-4 Project

2025 Important Deadlines & FUW Details

A. Axtell, PhD

Industry Technology Session

17 Presenters

337 Registered

IR-4 Project

Thank You, IR-4 Event Sponsors!

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2025

IR-4 Project

Important Deadlines

- **Late April - July:** Annual company meetings (~20)
- **NEW! July 1: Deadline to submit new project requests (Food Use Program)**
- **July 7:** Project requests are given to the EPA for stoplight analysis
- **Aug 8 (TENTATIVE):** EPA stoplight analysis is due
- **Aug 15-25:** Project requests are eligible for nomination online
- **Sept 2:** Nominated project requests are made available to RFCs and HQs for review
- **Sept 5:** The list of nominated project requests is posted on the public website
- **Sep 9-11:** Food Use Workshop

IR-4 Project

FUW

Venue

SAVE THE DATE

2025 IR-4 Project
Food Use Workshop

September 9-11, 2025
Denver, Colorado

IR-4 Project

Draft Agenda

Day 1 (Sept 9)- Tuesday Morning

- Introduction (TBD)
- Kick-off (Jerry Baron)
- Guest Speakers (TBD)
- CLC Update (Todd Schulz)

Day 1 (Sept 9) – Tuesday Afternoon

- In-person participant introduction
- EPA Update
- Weed Sc. priority setting
- Reception

Day 2 (Sept 10)- Wednesday Morning

- Plant path. priority setting
- Ent. priority setting

Day 2 (sept 10) - Wednesday Afternoon

- Ent. Priority setting

Day 3 (Sept 11)- Thursday Morning

- Finalize priorities
- Adjourn- Noon

IR-4 Project

Thank you!

Reboot of Integrated Solutions Platform

Presenter: Dr. Alice Axtell

IR-4 Project

IS Reboot - Proposal

A. Axtell

Goals & Deliverables

IS contributes to the pest management systems in organic & conventional specialty crop production

1. Filling pest management **voids**
2. Addressing the development of **pest resistance**
3. Finding solutions to navigate **MRL requirements**.

IR-4 Project

Deliverables deriving from IS research outcomes:

- New use registrations or label changes
- Submission of new PCRs under the R&PP or contributing to Biopesticides Reg. Support decisions
- Support use commercialization for pending registrations
- Educate the agricultural community on research outcomes

IR-4 Project

Technologies

Any technology that has direct pest control activity or that can enhance the efficacy of one:

- **Conventional Pesticides**
- **Biopesticides**
- **PGRs**
- **FIFRA Exempt**
- **Semiochemicals**
- **Application Devices**
- **SAR enhancers**

These can be explored ONLY IF used **as complementary** pest control tools to the primary technologies:

- Biostimulants
- Biocontrols
- Established resistant cultivars
- Mechanical & physical tools
- Cultural practices and habitat manipulation

IR-4 Project

Technology requirements for inclusion in IS studies:

- Company commitment
- U.S. Registration status
- Formulation development status

IR-4 Project

Deferring Research Trials

Priorities will be set at the Food Use Workshop but the project start may be deferred

- Robust research protocols
- Timely allocation of funds
- Exceptions will be considered

IR-4 Project

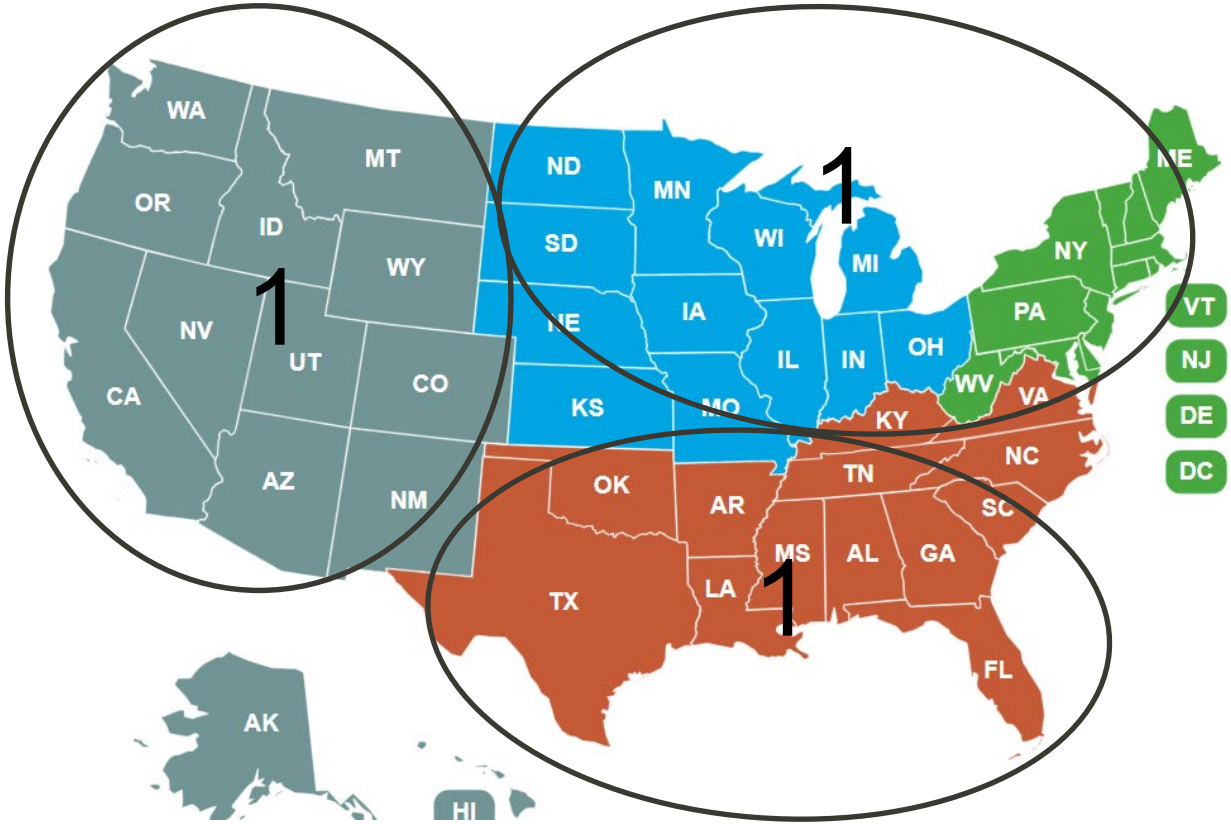
Capping the No. of Annual Priorities

Anticipating a flat budget

- Maximum **10** new IS priorities per year
  - 7 NIFA-funded priorities selected at the FUW
  - 1 PUP/RU
  - Up to two Sponsored projects

National vs Regional Priorities

Allocating 3 priorities to regional/local needs



IR-4 Project

Centralizing IS Regional Priority Settings

Hosting national discipline-related IS calls

- Project requests are becoming increasingly more complex
- Calls would permit discussing details and addressing questions
- Establish a maximum number of selections per discipline to pave the way for the FUW
- Permit submission of proposals to give projects a second chance if they don’t make the cut

Forming Working Groups

Bringing experts in to build comprehensive & robust research protocols

Working groups should include willing individuals capable of making meaningful contributions to addressing the identified needs. Examples include key experts such as:

- Commodity group representatives & growers
- State and Federal researchers,
- Extension specialists & County agents,
- Technical experts from involved companies

Enhancing Outreach

Addressing gaps in outreach and stakeholder awareness of IS research outcomes by:

- Developing research summaries at project conclusion
- Targeting local, regional, and national grower-focused media outlets
- Presenting at conferences and events
- Replacing the annual Food Use Research Symposium with targeted webinars
- Collaborating with other IPM key players when feasible

Thank you

Executive Director Search

Presenter: Dr. Krystal Chojnacki

IR-4 Project

IR-4 Project

HIRING SOON

Position opening early 2025

EXECUTIVE DIRECTOR

IR4PROJECT.ORG/CAREERS

IR-4 Headquarters at North Carolina State University will soon be hiring a new Executive Director. We are seeking the next visionary leader driven by dedication to specialty crop stakeholders to lead IR-4 into the future while remaining rooted in our mission. This position will be posted in the NC State jobs portal and on the IR-4 Careers page in early 2025. Scan below to join our newsletter for updates on this position (and more). Thank you for helping spread the word!

NC STATE

Northeast Region Report

Presenters: Dr. Simon Zebelo

NORTHEAST REGION | IR-4 Project

2024 Annual Report

Contributors: Marylee Ross, Megan James Hickman, Simon Zebelo, Jane Forder

Table of Contents

Sponsor Acknowledgements

Recognizing The IR-4 Project's primary sponsor:

United States Department of Agriculture
National Institute of Food and Agriculture

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award numbers 2022-79111-38469 with substantial cooperation and support from the State Agricultural Experiment Stations, USDA-ARS, USDA-APHIS, and USDA-FAS. In accordance with Federal Law and US Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age or disability.

Special thanks to our land grant universities for their partnership with IR-4:

HBCU 1886
UNIVERSITY OF MARYLAND EASTERN SHORE

COLLEGE OF AGRICULTURE & NATURAL RESOURCES

MAES
Agricultural Experiment Station
University *of* Maryland

The Personnel section outlines further involvement and contributions made by land grant institutions and cooperators.

Program Summary

2024 Trials At-A-Glance

Food Use MOR Trials	2023	2024	2025
Trials Placed	31	26	29
Canceled Trials	3	1	0
Completed Trials	28	25	0
FDB's Received at RFC Office	28	16	0
Completed QC Reviews	28	14	0

Food Use Performance Trials	2023	2024	2025
# of Trials	20	18	20
Completed Trials	18	15	0
Reports Submitted	14	6	0

Env. Horticulture – Efficacy	2023	2024	2025
# of Protocols	4	5	TBD
Projects Placed	4	5	TBD
Canceled Projects	0	0	0
Reports Submitted	2	0	0

Env. Horticulture – Crop Safety	2023	2024	2025
# of Protocols	4	3	TBD
Trials Placed	31	19	TBD
Canceled Trials	0	0	0
Reports Submitted	12	0	0

Integrated Solutions Trials	2023	2024	2025
# of Trials	7	7	2
Completed Trials	7	7	0
Reports Submitted	6	4	0

Overview of the Northeast Region

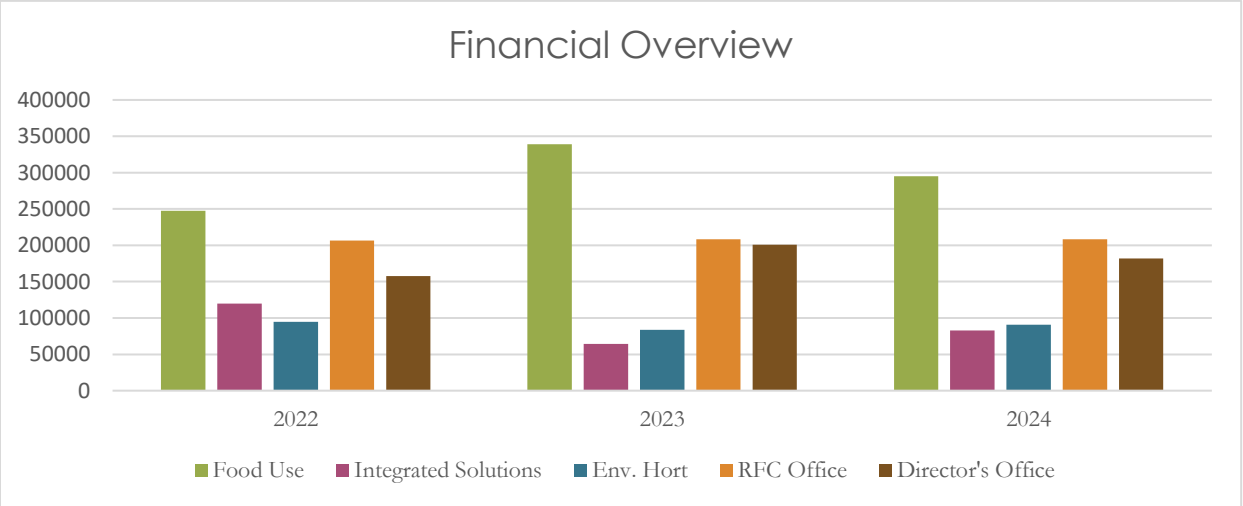
The Northeast Region of the IR-4 Project is a collaboration between the University of Maryland College Park (UMCP/UMD), University of Maryland Eastern Shore (UMES), and North Carolina State University (NC State).

The Regional Field Coordinator's (RFC) office is at the University of Maryland's Lower Eastern Shore Research and Education Center (LESREC) in Salisbury, MD. The Regional Director's office is located at UMES in Princess Anne, MD. The IR-4 Project Headquarters (HQ) is located at NC State in Raleigh, NC. Following is a summary of Northeast Region (NER) activities from January 1, 2024 through December 31, 2024.

Budget

In 2024, Food Use allocated $295,000, Environmental Horticulture allocated $90,900 and Integrated Solutions allocated $83,000 to field trials. The Regional Director's office received $181,742 to support the administration of the region. The RFC office received $208,139 to support operations and outreach. All of these figures do not include indirect cost.

Depicted below is an overview of the Northeast Region's financial infrastructure and a comparison of funds specific to our region throughout the past three years.



Update from the Regional Director's Office

The details of NER 2023-2024 (Year 3) and 2024-2025 (Year 4) sub-sub award contract processing are presented in the following table.

Activities	2023-2024 (Year 3)	2024-2025 (Year 4)
Subawards completed	26	21
Number of Sub awards Signed	24	8
PR completed	19 (plus 5 for UMD)*	N/A*
PO processed	19 (plus 5 for UMD)*	N/A*
Invoices received	19	1
Checks issued	12	0
NCE Requested	10	1

* The University of Maryland's budget has been transferred internally through our financial system. Purchase Requisitions (PR), Purchase Order (PO), No Cost Extension (NCE). N/A*:PR and PO not done in the new Financial System

Ten researchers requested a no-cost extension (NCE) for the 2023-2024 FY budget, and UMES approved the NCE requests. The 2024-2025 FY (Year 4) sub-subaward processing and releasing funds are progressing slowly due to the UMES/UMD transition to the new financial system (Workday). For those serving as FRDs and SLRs, we are processing the subaward and SLR travel budget together. Researchers from Rutgers, Thierry Besancon, and Andrew Wyenandt have not signed year 3 subawards. Thierry has completed the work and submitted reports. However, the sponsored research office at Rutgers failed to process the year 3 subaward. We are working to expedite the process in collaboration with Marylee Ross and the researcher.

UMES received and signed USDA-ARS funding documents from NC-state to implement Environmental Horticulture (EH), crop safety, and efficacy trials. The hoop house with a cooling and heating system dedicated to IR-4 crop safety and efficacy trials has been completed and used to run 12 trials using two protocols. The trials are completed, and the reports are being prepared.

UMES purchased and distributed residue bags and boxes to all regional offices, USDA-ARS, and Canada. Moreover, we have stocked our residue bags inventory at UMES in case any region needs urgent sample bags.

We represented the IR-4 Project at the UMES Small Farm Conference in November 2024, and Marylee Ross presented the IR-4 Project activities and services to over 32 stakeholders who attended the IPM session. I had a chance to discuss the updated SOPs with Marylee and Megan. They did an outstanding job improving the SOPs for RFC and the magnitude of residue studies.

In 2024, I attended several IR-4 related virtual and in-person meetings, such as PMC meetings, Food Use Workshop, Priority Setting meetings, National Expanding Force meetings, SLR update meetings, ESA National and Branch meetings…etc. We recently published an article in the American Entomologist Journal on the Involvement of Minority-Serving Institutions in the IR-4 project.

The IR-4 NER team had several regular virtual meetings. Thanks to the hard-working colleagues Marylee, Megan, Jane, John, Josh (UMES research office), SLRs, and the researchers, things are progressing well in the NER.

Regards,

Simon Zebelo

Update from the Regional Field Coordinator's Office

Greetings from the Northeast,

It's time again for an annual update. The year's activities would be too voluminous for this brief note so here are some of the notable events.

Throughout the year all who are involved in GLP research spent many hours in training on the eFDB. In March, Phillip Moore visited our research farm in Salisbury, MD. All of our FRDs were in attendance for 2 days of hands-on eFDB training. It was beneficial from all perspectives. There has been extensive virtual training as well. The amount of information has been huge and some changes have occurred since the training began. Glitches with iAdvantage were identified and most were rectified. There are still some "work arounds", but the NER FRDs are doing an outstanding job adapting to this new system and, most importantly, maintaining GLP compliance. I've said it before and I'll say it again; I am extremely proud of our FRDs.

RFCs have been sharing responsibility for developing and presenting quarterly GLP Training Webinars. In the past, the Western Region created the webinars with some input from other regions. We now work together on all of them with the bulk of the task on one region at a time. Christina Dineen did a phenomenal job kickstarting this method of training development.

I was involved with planning the annual EPA/USDA Specialty Crop tour. On June 26th the group boarded a UMD motor coach for an all-day tour. Van Starner was tickled to showcase the fabulous farming community where he grew up. This tour meant a lot to him and it was a great day for all.

In April, we held our annual meeting where we heard from our SLRs about the most pressing problems being experienced by our growers. It was a productive meeting and set the stage for our priority setting meetings held in July.

Also, in April Megan visited her alma mater, Delaware Valley University to offer a presentation to the IPM Class about IR-4 and its impact over 60 years.

I was able to visit several of our research sites in NJ and NY. It is important to show support and witness first hand their operations and capabilities.

In September, our Food Use Workshop was held in Milwaukee, WI. Our regional participation was both in person and virtual. We successfully established a majority of our region's priorities.

November was a busy month. I gave an IR-4 presentation at the Small Farm Conference at UMES. I attended the Entomological Society's Conference in Phoenix, AZ where I saw many of our esteemed entomologists. Megan attended the Mid-Atlantic Crop Management School. This is an excellent resource for information and networking.

Megan and I both attended numerous meetings. The majority of them are listed in a table later in this report. As well, we frequently have team meetings with Simon Zebelo. Simon is a fantastic Regional Director and we appreciate him very much!

On a note of cheer, I am pleased that Mark VanGessel was a recipient of a SOAR Award that was so richly deserved. Mark was surprised and appreciative of this award. The ability to facilitate recognition of excellence is a true highlight of my career. We have so many brilliant and dedicated

partners in this whole objective to serve our specialty crop growers. I will take advantage of this opportunity to express my sincere gratitude for everyone who is part of this outstanding team effort across our region, our country and the world.

marylee

Notable Meetings

The RFC office participated in approximately 150 hours of virtual meetings throughout 2024. The list below represents some notable meetings that the RFC Office actively participated in and captures the highlights of in person and virtual meetings.

- Eastern Shore Vegetable Growers Meeting, February 20, 2024 in Hurlock, MD
- IR-4 RFC/HQ Meeting, February 29, 2024 via Zoom
- IR-4 Town Hall Meeting, March 13, 2024 via Zoom
- NER eFDB Training, March 26-28, 2024 at LESREC in Salisbury, MD
- IR-4 NER Annual SLR Meeting, April 16, 2024 via Zoom
- IPM Guest Lecture at Delaware Valley University, April 19, 2024 in Doylestown, PA
- IR-4 Quarterly Online Training, May 21, 2024 via Zoom
- IR-4 RFC/HQ Meeting, June 20, 2024 via Zoom
- Specialty Crop Tour with IR-4/EPA/USDA, June 26, 2024 in Frederick County, MD & Adams County, PA
- New Jersey Site Visits to Jennifer Fisher & Wesley Bouchelle, July 16-17, 2024 in Pittstown, NJ & Bridgeton, NJ
- IR-4 Industry Technology Session, July 18, 2024 via Zoom
- IR-4 NER Weed Science Priority Setting Call, July 22, 2024 via Zoom
- IR-4 NER Entomology Priority Setting Call, July 23, 2024 via Zoom
- IR-4 NER Pathology Priority Setting Call, July 23, 2024 via Zoom
- IR-4 Town Hall Meeting, July 24, 2024 via Zoom
- LESREC Twilight Tour, August 6, 2024 in Salisbury, MD
- Maryland Agriculture Experiment Station Faculty and Staff Lunch & Tour, August 13, 2024 in Wye Mills, MD
- Carvel Vegetable Research Twilight Tour, August 13, 2024 in Georgetown, DE
- Vollmer Vegetable Research Twilight Tour, August 20, 2024 in Wye Mills, MD
- Site Visit Lange Research Inc., August 21-23, 2024 in North Rose, NY
- IR-4 Food Use Workshop, September 10-12, 2024 in Milwaukee, WI
- IR-4 National Research Planning Meeting, October 21-23, 2024 in Raleigh, NC
- IR-4 Town Hall Meeting, October 30, 2024 via Zoom

- "Serving Growers in the Northeast" Talk UMES Small Farm Conference, November 1-2, 2024 in Princess Anne, MD
- Entomological Society Meeting, November 12-15, 2024 in Phoenix, AZ
- Mid-Atlantic Crop School, November 19-21, 2024 in Ocean City, MD

Program Report

Food Use Program

Magnitude of the Residue

In 2024, twenty-six magnitude of residue (MOR) trials were conducted in the Northeast Region. Of the Food Use funding in the Northeast Region, $182,000 went to residue work. Activities involved 15 chemical/crop combinations.

MOR field trials were conducted in four locations, including:

- Lower Eastern Shore Research and Education Center, Salisbury, MD (University of Maryland)
- Rutgers Snyder Research and Extension Farm, Pittstown, NJ (Rutgers University)
- Philip E. Marucci Center for Blueberry & Cranberry Research, Chatsworth, NJ (Rutgers University)
- Lange Research and Consulting Inc. (North Rose Facility) North Rose, NY (Contract Research Facility)

Overall, only one trial was cancelled. This was due to negative weather impacts on a blueberry crop that was out of the Field Research Director's control at Lange Research. It was not deemed necessary to redo this trial as the Study Director believed there was enough data from other trials to satisfy study needs.

All samples from the completed trials have been shipped. Sixteen electronic Field Data Books (eFDBs) have been completed and notification provided to the RFC Office. Fourteen Quality Control (QC) reviews have been completed and data transferred to Quality Assurance (QA).

Quality Assurance (QA)

During the period of this report, I [Jane Forder] performed 4 facility inspections, 2 in the Northeast Region and 2 in the Northcentral Region. I conducted 27 field in-life inspections, 13 in the Northeast Region and 14 in the Northcentral Region. I audited 32 field data books (23 paper and 9 eFDB), 8 final reports and performed a second review on 6 final reports. I did 6 closing checks, and wrote up one QA Statement. I attended numerous e FDB training sessions.

Performance

In 2024, eighteen performance trials were conducted in the Northeast Region. Of the Food Use funding in the Northeast Region, $113,000 went to performance work. The Efficacy and Crop Safety trials were conducted at seven locations.

Efficacy and Crop Safety trials were conducted at:

- Carvel Research and Education Center, Georgetown, DE (University of Delaware)
- The New York State Agricultural Experiment Station, Geneva, NY (Cornell University)
- Philip E. Marucci Center for Blueberry & Cranberry Research, Chatsworth, NJ (Rutgers University)
- Wye Research and Education Center, Wye Mills, MD (University of Maryland)
- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University)
- UMD Research and Education Centers, College Park, MD (University of Maryland)
- Connecticut Agricultural Experiment Station, New Haven, CT (University of Connecticut)

Fifteen of the trials are complete and six reports have been submitted.

Environmental Horticulture

In 2024, the Environmental Horticulture program funded $90,900 of research in the Northeast Region. There were five efficacy protocols and three crop safety protocols. Under these protocols, we placed five efficacy projects and nineteen crop safety trials. This work was done by four different researchers at three locations.

The five efficacy projects were conducted at:

- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University)
- WVU Plant Diagnostics Clinic, Morgantown, WV (West Virginia University)

The nineteen crop safety trials were conducted at:

- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University)
- University of Maryland College Park, College Park, MD (University of Maryland)

No reports have been submitted yet.

Integrated Solutions

In 2024, the Integrated Solutions program funded $83,000 of research with seven trials placed in the Northeast Region.

The trials are being conducted at six locations, including:

- The New York State Agricultural Experiment Station, Geneva, NY (Cornell University)
- Carvel Research & Education Center, Georgetown, DE (University of Delaware)
- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University)
- Philip E. Marucci Center for Blueberry & Cranberry Research, Chatsworth, NJ (Rutgers University)
- UMD Research and Education Centers, College Park, MD (University of Maryland)
- UMass Extension, Amherst, MA (University of Massachusetts)

Seven trials were completed and four reports have been submitted.

Personnel

Administration

	Title	Location	Email
Simon Zebelo	Regional Director	University of Maryland Eastern Shore	sazebelo@umes.edu
Marylee Ross	Regional Field Coordinator	University of Maryland	mross@umd.edu
John Ellis	Program Coordinator	University of Maryland Eastern Shore	jellis@umes.edu
Jane Forder	Regional Quality Assurance	North Carolina State University	jforder@ncsu.edu
Megan James Hickman	Assistant Regional Field Coordinator	University of Maryland	mjames14@umd.edu

Field Personnel by State

Connecticut	Title	Location	Email	Area of Involvement
Srikanth Kodati	FRD & SLR	University of Connecticut	Srikanth.kodati@uconn.edu	Food Use

DELAWARE	Title	Location	Email	Area of Involvement
David Owens	FRD & SLR	University of Delaware	owensd@udel.edu	Food Use & Integrated Solutions
Mark VanGessel	FRD	University of Delaware	mjv@udel.edu	Food Use & Integrated Solutions

MARYLAND	Title	Location	Email	Area of Involvement
Diana Cochran	FRD	University of Maryland College Park	cochrand@umd.edu	Environmental Hort
Megan James Hickman	FRD	University of Maryland – LESREC	mjames14@umd.edu	Food Use
Mengjun Hu	FRD	University of Maryland College Park	mjhu@umd.edu	Food Use & Integrated Solutions
Marylee Ross	FRD & RFC	University of Maryland-LESREC	mross@umd.edu	Food Use
Kurt Vollmer	FRD	University of Maryland College Park	kvollmer@umd.edu	Food Use

MASSACHUSETTS	Title	Location	Email	Area of Involvement
Susan Scheufele	FRD & SLR	UMass – Amherst	sscheufele@umass.edu	Integrated Solutions

NEW JERSEY	Title	Location	Email	Area of Involvement
Thierry Besancon	FRD & SLR	Rutgers – Marucci	thierry.besancon@rutgers.edu	Food Use & Integrated Solutions
Wesley Bouchelle	FRD	Rutgers – Marucci	wmb59@njaes.rutgers.edu	Food Use
Jennifer Fisher	FRD	Rutgers – Snyder R&E Farm	jlf229@njaes.rutgers.edu	Food Use

NEW YORK	Title	Location	Email	Area of Involvement
Nora Catlin	FRD	Cornell – Suffolk County	njc23@cornell.edu	Environmental Hort
Daniel Gilrein	FRD	Cornell – Suffolk County	dog1@cornell.edu	Food Use, Integrated Solutions & Environmental Hort
Keagan Handley	FRD	Lange Research & Consultants Inc.	keagan@langerc.com	Food Use
Brian Nault	FRD	Cornell	ban6@cornell.edu	Food Use
Lynn Sosnoskie	FRD & SLR	Cornell	lms438@cornell.edu	Food Use & Integrated Solutions

WEST VIRGINIA	Title	Location	Email	Area of Involvement
Mahfuz Rahman	FRD	West Virginia University	mm.rahman@mail.wvu.edu	Environmental Hort

State Liaison Representatives (SLRs)

Name	State	Email
Srikanth Kodati	CT	srikanth.kodati@uconn.edu
David Owens	DE	owensd@udel.edu
Susan Scheufele	MA	sscheufele@umext.umass.edu
Andrew Kness	MD	akness@umd.edu
Lily Calderwood	ME	lily.calderwood@maine.edu
Vacant	NH	
Thierry Besancon	NJ	thierry.besancon@rutgers.edu
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Vacant	RI	
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Carlos Quesada	WV	carlos.quesada@mail.wvu.edu

North Central Region Report

Presenters: Dr. Mary Hausbeck and
Dr. Douglas Buhler

IR-4 Project

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)

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 & Phytopythium 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
Phytophthora capsici/ 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)

MICHIGAN	**OHIO**	**WISCONSIN**	**INDIANA**	**SOUTH DAKOTA**	**NORTH DAKOTA**
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			**Minnesota**	
M. Quintanilla	A. Robinson	**MISSOURI**	**NEBRASKA**	M. Bernards	**ILLINOIS**
N. Rothwell	C. Taylor	I. Valmorbida*	N. Lawrence*		M. Babadoost*
D. Saha	**KANSAS**			**IOWA**	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

Southern Region Report

Presenter: Dr. Liwei Gu and Dr. John Mark Davis

IR-4 Project

Institute of Food and Agricultural Sciences
Food Science and Human Nutrition Department
Food and Environmental Toxicology Lab
IR-4 Southern Region

1642 SW 23rd Drive
Gainesville, FL 32608
352-294-3730

Southern Region Report for CLC and PMC

Liwei Gu, Kristen Searer-Jones, Gail Mahnken, and Kathleen Knight

February 23, 2024

1. Field program and QC

QC of FDBs: Approximately 36 paper field data books were QC-ed by Kristen Searer-Jones in 2024. Phillip Moore QC-ed five electronic field data books from 2023 and 2024. The southern region has 43 field data books outstanding. Six paper field data books will be QC-ed by Kristen Searer-Jones once received. Thirty-seven 2024 electronic field data books will likely be QC-ed by contract QC in 2025.

SOP review: The SOP review was conducted in 2024, and revisions were submitted and approved as needed. All sites are in the process of updating SOPs to reflect and include electronic data entry, which will be reviewed and approved for the 2025 field season.

2024 GLP assignments: Eighty-three residue trials were assigned at the beginning of the year. Five trials were terminated throughout the year, with three being replaced at the same field site. Additionally, 3 sesame trials were canceled due to phytotoxicity. Nine tropical trials were terminated and removed from the Tropical Research and Education Center in Homestead, Florida after the assigned FRD left the position. Some of these trials have been replaced at other field sites; others did not need replacements to move forward.

Food Crop Product Performance Trials: Fifty-one performance trials were assigned in 2024. Twenty-seven reports have been received thus far.

Integrated Solutions (IS) trials: Twenty-one integrated solutions trials were assigned in 2024, and 9 reports have been received.

Environmental Horticulture Trials: Thirty-seven environmental horticulture trials were assigned in 2024, and 21 reports have been received. Twenty-one environmental horticulture researchers signed up for 2025 research projects.

2024 SOR Priority Setting: Three discipline-specific calls were held June 11-13, 2024, with a final priority setting call on August 14, 2024. All calls were well attended, and a good showing of southern region researchers attended the Food Use Workshop in Milwaukee, Wisconsin.

2025 Trial Assignments: Sixty-four residue trials have been assigned to the southern region for 2025; an additional five are pending placement. Thirty-eight performance trials have been assigned, along with five integrated solutions carryover projects to be conducted in 2025.

Training: All FRDs attended continuous eFDB training throughout 2024. Dr. German Vargus has filled the open FRD position at the Tropical Research and Education Center in Homestead, FL. He is shadowing established researchers at the Center, attending eFDB trainings, and will visit southern region GLP sites for hands-on training in the spring.

Extension and outreach activities:

- Attended talks at the Southeast Regional Fruit & Vegetable Conference in Savannah, GA January 11-13, 2024.
- Hosted in-person eFDB training for southern region FRDs with Phillip Moore February 20-22, 2024.
- Hosted UF IFAS + IR-4 Special Seminar with Southern Region team & Alice Axtell from HQ to educate UF researchers on IR-4 collaboration opportunities on April 4, 2024.
- Attended a Field Critical Point Inspection in Uvalde, TX for the harvest of trial bifenthrin/onion with Headquarters QA, May 16, 2024.
- Attended Hops Field Day at UF Gulf Coast Research & Education Center in Wimauma, FL, June 5, 2024.
- Hosted virtual southern region priority setting meetings June 11-13, 2024 and August 14, 2024.
- Virtually attended Southeast Vegetable Extension Workshop July 16-17, 2024.
- Attended passionfruit field day in Citra, FL, August 1, 2024.
- Attended Food Use Workshop Milwaukee, Wisconsin, September 10-12, 2024.
- Virtually attended Vascular Streak Dieback meeting October 1-2, 2024.
- Attended Southeast Regional Fruit & Vegetable Conference January 9-11, 2025.
- The March 2025 edition of Specialty Crop Grower magazine will feature a column about IR-4 and southern region work, put together by Jerry Baron, Hannah Ross & Kristen Searer-Jones.
- Attending Florida Fruit & Vegetable Association Spring Regulatory Tour in South FL March 10-14, 2025.

2. Analytical Lab

Personnel:

Dr. Isil Gazioglu was hired as a chemist in August 2024. She has a doctoral degree in Analytical Chemistry. Elisha Mitchell was employed as a lab technician/sample control officer in September 2024 after Jason Coulthart left the lab for another position. Lab personnel have been attending the inter-lab training sessions, which started in September.

Projects and reports completed:

Nine analytical summary reports (ASR) were submitted in 2024. Four of the projects were backlogged at the time of submission. Eight of the nine projects were 2022 projects. One project was from 2023.

Ongoing Projects and Goals:

Twenty projects are currently in progress. Twelve of the projects are considered backlogged. Due to data analysis issues requiring re-validation of methods and re-analysis of field and storage stability samples, the backlogged Fluazaindolizine/Radish project will not be delivered before 2027, and Fluazaindolizine/mint will not be delivered before 2028.

We aim to complete 18 ASRs in 2025, including nine currently backlogged projects.

The status of the ongoing projects is as follows:
One is in ASR writing.
Seven are pending final storage stability interval analysis; field trial analysis completed.
Seven are being analyzed after the method development and validation
Three are in method development
Two are in method re-evaluation (Fluazaindolizine/mint, 2,4-D/strawberry).

Samples have been received from 9 projects and will be queued for analysis. Samples from the Fluazaindolizine/pineapple project have not been received.

3. Quality Assurance Unit

The 2024 year is 100% complete. The average dwell time for Field Data Book audits was 14.3 days. The dwell time for Analytical Summary Report/Raw Laboratory Data audits and Final Report audits was 15 days and 10 days, respectively. The QAU audited 61 additional Field Data Books in cooperation with other regional and Headquarters QA staff. Of the FDBs audited, 19 were rushed for EPA audits. Three Field Critical Point Audits were terminated or canceled, and one was pushed to 2025.

QA items	Assigned Or planned	Completed	Completion %
Final Petition Audits	11	2	18%
Field Data Book Audits	100	159	159%
Field Critical Point Audits	19	16	84%
Lab Critical Point Audits	30	23	77%
Field Facility Inspections	2	2	100%
EPA Audits	0	1	100%
Analytical Summary Report Audits	17	12	71%
Contributing Scientist's Report Audits	0	0	NA

Western Region Report

Presenter: Dr. Matt Hengel and Dr. Marcel Holyoak

IR-4 Project

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Western Region IR-4 Report
March 2025 PMC Meeting
January – December 2024
Matt Hengel – Regional Director & Laboratory Research Director
Kari Arnold – Regional Field Coordinator
Martin Beran – Quality Assurance Coordinator
Marcel Holyoak – Administrative Adviser

Extension, Outreach, Needs (Priority) Assessments, and Network Development

- Kari Arnold
  - Stanislaus County Master Gardeners Training
    - Modesto, CA, February 28, 2024
  - State Liaison Representative/Commodity Liaison Committee Meeting
    - Honolulu, HI, April 16/17, 2024
  - Global Minor Use Summit IV
    - Madrid, Spain, February 5-9, 2024
  - Industrial Hemp Advisory Board member
  - CA Specialty Crop Council Member
  - CA Pomology Advisory Committee Meeting (PAC)
    - Davis, CA, January 9, 2024
  - CA Pomology Cross-Commodity Discussion
    - April 30, 2024
  - CA Pesticide Registration and Evaluation Committee Member
  - Food Use Workshop, Sept 10-12, 2024
  - University of Idaho/Utah State University Visit
    - July 15-19, 2024
    - Tart cherries, mint, stone fruit and other commodities
  - Western Region Priority setting calls
    - July 7, 2024, Sept 4, 2024
  - IR-4 Tour, California Farm Bureau, August 8, 2024
  - Biostimulants Congress
    - Miami, FL, November 11-16, 2024
  - Pear Field Day, Lake/Mendocino Counties, October 29, 2024
  - Rodent management, living with wildlife training, November 6, 2024
  - Individual networking meetings throughout 2024, via zoom, phone, in person
  - Western Growers Committee IR-4 Introduction
    - October 4, 2024
  - Oregon State university Visit, Sept. 16-20
    - Tour facility, hazelnut production, meet administration

Training Development

- Kari Arnold, Mika Tolson, GLP/Field training development committee members
    - Develop and facilitate GLP and field training for FRDs quarterly with RFCs and HQ
    - eFDB virtual training development and attendance
    - eFDB in person training
        - Pasco, WA, March 6, 2024
        - Honolulu, HI, April 18, 2024

Field Program – Food Use Residue Program

- In 2024, 139 field trials were initiated in the Western Region.
- The Western Region utilized CFDA funding to co-fund some performance, residue, environmental horticulture and integrated solutions studies in 2024.
- Current status of field trial data is summarized in the following table:

Year	Field trial data not yet received	WR Field Trial Data waiting to be QCed	WR Field trial data under QC review	Data sent to QA/HQ	Total Number of Field Trials
2021	0	0	0	127	127
2022	0	0	0	108	108
2023	5	0	13	96	119
2024	64	28	0*	41	139
Total	**69**	**28**	**13**	**372**	**493**

***2024 books ready for QC are waiting for QC to be trained in the eFDB, this training is occurring now. QC will continue after training is completed.**

Field Program – Performance (Crop Safety and Efficacy)

- In 2024, 57 new WR field trials were conducted
    - 28 researchers in 5 western states CA (13), OR(7), WA(1), ID(1), HI(2), MT(0), AZ(3) are conducting the trials

Year	Trial reports not yet received	Trial reports sent to HQ	Total Number of Crop Safety / Efficacy Trials
2022	0	34	34
2023	5	52	57
2024	45	12	57
Total	**50**	**98**	**148**

Field Program – Environmental Horticulture

- The 2023 and 2024 WR Environmental Horticulture work consisted of fungicide, insecticide, and herbicide projects.
- In 2024 we added two new researchers in Oregon, one who is a new weed scientist at OSU Extension Service. We also have a new regional project at UC Davis on the impacts of thrips insecticides on beneficial insects. In 2024 we collaborated with the USFS personnel on putting a publication into Tree Planter's Notes on how IR-4 can be a tool for nursery growers.

Due to grant fund disbursement challenges at UC Davis and 2023 funds delayed until beginning of 2024 many new researchers were unable to cover costs with other funds which delayed initiation of trials.

Year	Trial reports not yet received	Trial reports sent to HQ	Total Number of Environmental Horticulture Trials
2023	133	19	152
2024	114	14	129
Total	**247**	**30**	**281**

Integrated Solutions Program

- In 2024, there were 21 Integrated Solutions projects initiated with funds from USDA NIFA grant and the CDFA grant

Year	Reports to HQ	Total Number of Integrated Solutions Projects
2022	6	7
2023	29	33
2024	9	21
Total	**47**	**69**

Lab Program

The lab continues to operate at nearly full capacity and no projects were backlogged during this time period.

Lab Summary (1/2024 -12/2024)

Project Year	ASRs Completed	Work in Progress	ASR Preparation	ASR in QA
2020	1	1	0	0
2021	2	0	1	0
2022	5	1	2	3
2023	3	6	0	1
2024	0	3	0	1
Total	**11**	**11**	**3**	**5**

Laboratory Staff Outreach and Collaborative Activities

- During the Spring Quarter (April-June), the LRD lectured and taught laboratory experiments for the core analytical course in the Department of Environmental Toxicology entitled “Quantitative Analysis of Environmental Toxicants” (ETX-102B) to ~35 students.
- LRD collaborated with Alyson Mitchell (Prof. of Food Science, UC Davis) to plan Memorial Symposium for Proj. Jim Seiber for upcoming Spring ACS meeting in San Diego.
- LRD participated in FUW and NRPM.
- LRD attended Pest Management Advisory Committee of the California Department of Pesticide Regulation meetings.
- Laboratory underwent an EPA inspection in February. No findings
- Regional personnel hosted a group from CDFA for an IR-4 overview presentation with field and laboratory tours.
- Regional personnel hosted Todd Wixson (USDA-ARS, Wapato).
- LRD and Lab personnel successfully submitted two manuscripts for publication:
    - Zuno-Floriano, Fabiola G., Reyes-Punongbayan, Riza L., and Hengel, Matt J. Improved Analytical Methods for Determination of Residues of Nitrapyrin and 6-Chloropicolinic Acid in

Different Crop Matrices by Liquid Chromatography-Tandem Mass Spectrometry. Journal of Agricultural Chemistry and Environment. 13, 263-281. 2024. https://doi.org/10.4236/jacen.2024.133018
    - McFall, Alexander S., Reyes-Punongbayan, Riza L. and Hengel, Matt J. Analysis of Flutianil and OC56635 Residues in Hemp Cannabis Matrices by LC-MS/MS. J. Agric. Food Chem 2024 https://doi.org/10.1021/acs.jafc.4c05103
    -
- Laboratory personnel attended online laboratory training.
    - Bronson Hung and Jeff Eichler presented during the first couple of sessions.
- Lab move (part II, the remix)
    - Campus has determined that Sprocket Building will need seismic renovations which necessitates a move back to Meyer Hall in 2024.
        - Latest updates have the move starting in the spring, 2025. Wet lab operation will move to Meyer Hall, instrumentation will remain in Sprocket and remain in operation.
- Wrapping up remaining MSU projects:
    - Flonicamid/Sugar Beet: Awaiting long-term storage stability (3/2026)
    - Sulfosulfuron/Tomato: Awaiting long-term storage stability (puree & paste, 11/2025)

Quality Assurance Program

We conduct study-based in-life inspections (field, laboratory, and processing activities), paper-based audits (field, laboratory, and study data and reports), and facility-based inspections (field, laboratory, and processing sites). Another of our jobs is to assist our field and lab researchers with EPA inspections.

The role of the Quality Assurance Unit is to identify GLP compliance issues within studies and facilities, and if any are found, report them promptly to the study director and management. QA also plays a key role in assisting researchers in addressing compliance concerns. It is management's responsibility to ensure that corrective actions are taken and documented.

During the January through December period of 2024 the WSR QAU received only 2 Final Reports for audit. Also, during this same period the WSR QAU received 93 Field Databooks. During the January through December period our office received 9 lab reports (ASR) for audit.

We had two EPA inspections in the Western Region in 2024. At the end of February, EPA performed an inspection at the UC Davis Leader Lab and with Seth Watkins' field test site. There were no findings (observations) at either of these inspections. A single IR-4 study was also chosen for inspection at Turner Ag Research, a contract field facility, in early June. QA was not asked to attend this inspection as this involved other sponsor's studies. There were also no findings associated with the IR-4 study selected at Blaine Turner's facility.

Sherita has given two presentations to the larger QA unit regarding helpful hints when auditing ASRs and a back to basics refresher. This is an effort to capture some of what she has learned auditing raw data in the 14 years with IR4 and in 22 years in industry. It is also to make sure GLP concerns, particularly in regards to lab raw data, will not be overlooked by the QAs who have recently joined IR4. Before she left, she audited five of Todd Wixson's ASR.

Laurel Hsieh replaced Sherita Normington as Assistant QA Coordinator when she left in June. In the past eight months, Laurel has shown proficiency in auditing Field Databooks, Final Reports, and performing field and lab in-life inspections. Her training involved tandem field visits and data audits and introduction to facility inspections and drawing up QA statements. Martin will continue to train her on ASR/raw data audits. Laurel has had introductory meetings with most of Headquarters' staff to better understand their role within IR4. Several HQ QA have also trained her on the finer aspects of eQA, eDOCs, and the eFDB. She attended the California crop tour in early August.

Meetings and Training

Martin served on the National SOP Committee, Zoom meetings are twice monthly. We have finalized SOPs on the eFDB, which are available in eQA. Martin attended an eFDB training course in Gainesville, FL in February. Martin also shot and edited a video about how the Western Region Leader Lab processes field samples. That video is part of a series of training sessions revolving around sample handling and instrumentation that will continue into 2025. The QAU began meeting monthly in April over Zoom to address issues regarding the eFDB and electronic facility records. We also assembled via Zoom in February to select our annual target field trials for the year.

Presentations

Martin gave two lectures to the ETX 102B class in early April. One on the history of the GLPs and another on the Regulations. I conducted two GLP training sessions with new IR4 personnel, one in January and the other in February. The Western Region hosted visitors from Californians for Smart Pesticide Policy in early August. The group took a tour of UC Davis' IR-4 lab and field facilities. I spoke at various stops about the purpose of compliance assurance in field applications and lab analysis.

Audits & Inspections

The status of audits, inspections, and reports within the region for the period 1/1/24 – 12/31/24 follows:

Critical Phase Inspections completed		Facility Inspections completed	
Field	58	Field	1
Lab	27	Lab	0
Processing	4	Processing	0
Total	89	Total	1

Raw Data Audits completed

Field Databooks	80
Analytical Smry. Rpts.	10
Study Final Reports	2
Total	92

Total Inspections and Audits in 2024: 182

Headquarters Report

Presenter: Dr. Jerry Baron

IR-4 Project

IR-4 Project

Pest management solutions for specialty crops and specialty uses

2024 ANNUAL REPORT

Prepared by IR-4 Headquarters

ANNUAL REPORT OF THE IR-4 PROJECT
January 1, 2024 - December 31, 2024

1. Introduction

The IR-4 Project was established in 1963 by the U.S. Congress with the mission to assist specialty crop farmers by giving them legal access to needed crop protection products to manage insect, disease, weed, and other pests in production. Specifically, the IR-4 Project facilitates the registration of chemical and bio-based pesticides as well as emerging pest management technologies on fruits, vegetables, nuts, herbs, trees, shrubs, flowers, and other specialty crops, as well as minor uses on major crops (corn, cotton, soybeans, wheat, etc.). IR-4 remains relevant because specialty crops and minor uses often lack the economic return on investment for the private sector to justify spending research and development resources on these registrations. The IR-4 Project fills such voids by developing the necessary data and cooperating with many government and non-government organizations to accomplish its mission and leverage its resources (see Attachment 1: Participants in the Process). IR-4's research projects/activities include:

- Conducting U.S. Environmental Protection Agency (EPA) guideline "Magnitude of the Residue Studies." This gives EPA an accurate exposure estimate that they use to perform dietary risk assessments associated with potential product registrations.
- Product performance testing (efficacy/crop safety projects) on food and non-food ornamental crops. This provides assurances that the use of a crop protection product is safe and effective.
- Submitting proposals to EPA and other regulatory authorities to expand crop groups/subgroups that allow data from a few representative crops to cover many crops.
- Performing Integrated Solutions research projects, which utilize all available crop protection tools (chemical pesticides, biopesticides and emerging technologies) in order to identify solutions for hard-to-manage pests, prevent or better manage pest resistance to pesticides, and mitigate pesticide residues in the final food product. Integrated Solutions projects also address management of pests in organic crop production systems.
- Assisting with the registration of biopesticide and other emerging technologies discovered/developed by public sector scientists.
- Facilitating harmonization of global pesticide regulations to assist domestic specialty crop growers' ability to export fruits, vegetables and other specialty crops to international markets.

2. Successes in 2024

Food Crop Program:
EPA publication of actions that established **52** new tolerances for **8** active ingredients. These tolerances support **1024** potential new uses on food crops (Attachment 2).

Environmental Horticulture Program:
At this time, IR-4 does not have an accurate assessment of new registrations achieved in 2024. This information will be obtained during the second quarter 2025 with responses to inquiries from cooperating industry registrants.

3. Registration Support Actions in 2024

Food Crop Program:
- IR-4 submitted to EPA **9** tolerance petitions and **1** Final Report to the registrant for Label Expansion or Conditional Registration - these covered **48** unique requests (PR #s) for assistance and crop group tolerance updates (Attachment 3).
- **10** data packages were completed but not submitted.

- **27** draft final reports were submitted to IR-4's Quality Assurance Unit for Good Laboratory Practice compliance auditing.
- **51** Product Performance Reports and **27** Integrated Solutions Reports were posted and provided to cooperating companies.
- Biopesticide regulatory support actions and activities included:

    - Biopesticide submissions were made for (1) Citrus tristeza virus Expressing Spinach Defensin Protein SoD 2 in Citrus Fruits for resistance or tolerance to citrus greening, also known as Huanglongbing (HLB); (2) an attenuated Cucumber Green Mottle Mosaic Virus Strain ON-BM3 vaccine and (3) CarriCea T1 Citrus Rootstock with resistance or tolerance to citrus greening.

    - Responded to a 75-day EPA letter for the *Helicoverpa zea* nudivirus 2 submission

    - Submitted the final printed label for FourSure

    - Biochemical classification was completed for EPA for alum with classification as a biochemical like biopesticide.

Environmental Horticulture Program:

Eleven research summaries were written and/or updated to support new or existing registrations, provided to registrants, and posted on the IR-4 website (see summaries in Attachment 6); **3,296** field and greenhouse trials contributed to these summaries; trials came from the following IR-4 Units:
- North Central Region: 314 trials
- Northeast Region: 564 trials
- Southern Region: 994 trials
- Western Region: 711 trials
- ARS cooperative sites: 713 trials

4. Research in 2024

Food Crop Program - Summary of Research Studies / Projects
- **53** new Magnitude of the Residue Studies (Attachment 4); **394** total field trials (362 New/32 Carryover)
- **74** Product Performance projects (Attachment 5) involving **148** efficacy/crop safety trials
- **62** field trials that contributed to **35** Integrated Solutions projects
- IR-4 Quality Assurance Unit performed activities to help ensure that IR-4 remained compliant with EPA's Good Laboratory Practice Regulations; activities include:
    - 1 Protocol audits
    - 11 Facility audits
    - 127 In-life Inspections of field sites
    - 54 In-life Inspections of analytical laboratories
    - 314 Field Databook audits
    - 28 Analytical Summary Report audits
    - 27 Final Report audits
    - 2 Amended Report audit
- IR-4 also successfully completed 9 inspections by EPA, and QA audited 3 contributing scientist reports.

Environmental Horticulture Program - Summary of Research Studies / Projects
- The Environmental Horticulture Program conducted **671** field and greenhouse trials (246 efficacy, 429 crop safety) that contributed to **56** projects (see research trial details in Attachment 7).

Comprehensive Summary - 2024 Research Trial Distribution

Cooperating Region	Food Use Residue Trials[1]	Food Use Product Performance Trials	Integrated Solutions Trials	Environ. Hort. Product Performance Trials
North Central Region	65 (8)	21	8	118
Northeast Region	26 (0)	18	10	58
Southern Region	84 (10)	52	20	262
Western Region	149 (13)	57	24	136
ARS Sites	52 (1)	0	0	97
Canadian Sites	18 (0)	0	0	0
TOTAL	**394 (32)**	**148**	**62**	**671**

Analytical Laboratory Status

	Awaiting Analysis	Analysis in Progress	Waiting on Storage Stability	Analysis Complete Preparing Report
Southern Region Lab	17	6	7	0
Western Region Lab	22	5	7	9
ARS Tifton Lab	10	2	1	3
ARS Wapato Lab	7	0	0	5
Other Labs	8	5	0	15
TOTAL	**64**	**18**	**15**	**32**

5. Impacts of IR-4 Activities

The IR-4 Project continues to provide tangible deliverables to growers of food and non-food specialty crops through the facilitation of registrations of safe and effective crop protection products. IR-4 is the only publicly-funded program in the United States that develops data required for registrations. IR-4's work generates many positive impacts, including:

- Based on EPA actions, IR-4 data supported 1024 potential new registrations on food crops in 2024. These new registrations help producers grow high-quality food and ornamental crops while respecting the environment. This also has significant economic benefits—helping farmers remain profitable and boosting

[1] Data presented as total number of trials with number in parenthesis being the number of carryover trials

rural economies. Food processors and food retailers benefit from having a consistent supply of high-quality produce and/or raw materials to meet consumer demand and keep their processing facilities open and operational. The public benefits from having an abundant choice of healthy vegetables, fruits, nuts and other foods available at reasonable prices, as well as having ornamental horticulture plants to enhance the environment and contribute to our well-being. IR-4's actions also prevent food waste throughout the supply chain from the farm to the consumer.

- The IR-4 Project has been a major contributor to the advancement of Integrated Pest Management (IPM) tactics through the approval of crop protection tools that give producers suitable options to manage destructive pests that disrupt advanced IPM systems.
- IR-4's Integrated Solutions initiative couples bio-based products with conventional products in a defined system whose objectives are to reduce chemical residues in food, provide a means to break up pest resistance to pesticides, and, in some cases, develop a lower-risk solution to the most difficult-to-manage pests.
- IR-4 continues to work with EPA to expand and enhance US crop grouping regulations. Crop groups allow collection of residue data on a small number of representative crops, and extend the use of the exposure values to a much larger number of similar crops in the crop group or subgroup. There are huge cost savings, as crop-grouping extrapolation allows IR-4 and others in the regulated community to use resources in a smart and efficient manner. In 2024, no new Final Rules for US crop grouping updates were approved, although efforts are underway for the next phase of revisions. IR-4 has completed its efforts with the Codex Committee on Pesticide Residues (CCPR) to revise and expand the Codex Classification of Food and Animal Feeds.
- The Environmental Horticulture Program continues to support an industry valued at nearly $19.2 billion in annual sales (Horticulture Census, 2019, NASS). This industry is quite complex because growers cover diverse markets including flowers, bulbs, houseplants, perennials, trees, shrubs and more. These plants are grown and maintained in greenhouses, nurseries, commercial/residential landscapes, interiorscapes, Christmas tree farms and sod farms—all of which have unique pest management needs.

6. Congressional Appropriations and Other Funding

Summary of IR-4 Funding ($20.0 million)

Source	Amount	Administration	Activities covered
USDA-Minor Crop Pest Management (IR4) grant	$15.0 million	Competitive four-year grant to NC State	All core IR-4 research program and activities
USDA-ARS	$3.1 million	Contribute to and supports IR-4 research priorities	Funding of USDA-ARS scientists and activities
National Research Support Program (NRSP-4)	$0.5 million	Competitive five-year grant awarded to NC State	Salaries and research coordination activities of IR-4 Headquarters
Various industry contributions	$1.3 million	Unrestricted donations to IR-4 Project	All IR-4 Project activities and expenses
Minor Use Foundation	$0.1 million	Funds to NC State	Used to support IR-4 activities of global harmonization of pesticide regulations

In-Kind Contributions Estimates ($22,689,800)

Estimate	Source
$2,774,800	SAES/land grant universities by hosting IR-4 field research centers, analytical laboratories and management offices throughout the United States
$2,557,409	EPA Pesticide Registration Improvement Act fee waivers
$15,000,000	Crop protection industry
$500,000	The government of Canada via joint research projects

Expenditures supported by USDA-Minor Crop Pest Management (IR4) funds[2]

Amount	Use
$5,249,627	Distributed to the four IR-4 Regional offices and Headquarters for non-laboratory personnel, supplies, equipment and other core expenses
$2,664,160	Distributed to the analytical laboratories for personnel, supplies, equipment and other expenses associated with laboratory analysis.
$2,387,539	Allocated to field trials for residue studies
$1,123,990	Allocated to field trials for product performance research
$535,560	Allocated for field trials that develop data in IR-4 Integrated Solutions research
$654,488	Allocated for field trials that develop product performance data in ornamental crops
$1,125,600	Kept by NIFA to help fund their operations

Additional Expenditures Supported by Industry Contributions

Amount	Use
$282,942	Salary and Fringe
$139,582	Travel
$71,778	Meetings
$127,467	Additional Research
$410,487	Indirect/fees to cover NC State operations

[2] All values include 11.1 % indirect costs that are shared with the various institutions involved with IR-4.

7. New Requests for Assistance / Plans for the Future

Food Crop Program

- New Requests
    - 124 new requests were entered into the IR-4 food use database, of which 113 were new stakeholder requests and 11 were created by HQ for crop group tolerance revisions, referencing old PR#s, etc. The comprehensive total at the end of 2024 was 13,831.
    - The IS program received 24 new requests.
- Priority Setting
    - IR-4 stakeholders prioritized "researchable" Requests for Assistance at the 2024 Food Use Workshop and identified 52 Magnitude of the Residue Studies. Almost 65% of these studies also require efficacy and crop safety data. The stakeholders also identified 11 product performance-only projects and 12 Integrated Solution projects as the highest priority for research in 2025.
    - Biopesticide Regulatory Support - A new biopesticide regulatory support project, *Streptomyces noursei*, for the control of a number of plant viruses, was approved utilizing the new biopesticide vetting process.
- Future Research
    - In the 2025 Food Crop Program, IR-4 will be focusing on the new research priorities, as well as some carryover projects (352 Magnitude of the Residue trials, 149 Product Performance trials, and an estimated 57 Integrated Solutions trials).
    - IR-4 has made a strategic decision to defer research on new Integrated Solutions priorities until late 2025/early 2026. The reasoning behind this decision is to allow IR-4 adequate time to develop draft research protocols and give stakeholders time to review and suggest additional options.

Environmental Horticulture Program

- IR-4 will conduct the planned second year of data development for priorities from the 2023 Environmental Horticulture Workshop which were tested in 2024. These research projects will be the focus of 2025:
    - Beneficials for Western Flower Thrips and Chemistry Lab Assay
    - NER Regional Root Aphid/Aphid Efficacy
    - New Pest Products Crop Safety - FoliarNew Pest Products Crop Safety - Soil
    - Scale Efficacy
    - Thrips Efficacy
    - WSR Regional Lygus Efficacy
    - Boxwood Foliar Disease Efficacy
    - NCR/WSR Regional Botrytis Efficacy
    - NER Regional Nematode Efficacy
    - New Disease Products Crop Safety - Foliar
    - New Disease Products Crop Safety - Soil
    - Phytophthora Efficacy
    - Pythium & Phytopythium Efficacy
    - SOR Regional Vascular Streak Dieback Efficacy
    - NCR Regional Equisetum Efficacy
    - Post-emergent Herbicide Crop Safety
    - Pre-emergent Herbicide Crop Safety for Container Production
    - Pre-emergent Herbicide Crop Safety for Field Production
    - SOR Regional Pollinator Plant Herbicide Crop Safety
    - In addition, resources are available to add three new projects:
        - European Corn Borer Efficacy
        - Nantucket Pine Tip Moth Efficacy
        - Cylindrocarpon on Conifers Efficacy

Summary of Planned 2025 Food Program Research Trial Distribution:

Cooperating Region	Food Use Residue Trials[3]	Food Use Product Performance Trials	Carryover Integrated Solutions Trials[4]	2025 Environmental Horticulture Product Performance (Crop Safety/Efficacy)
North Central Region	65 (1)	23	3	48/4
Northeast Region	30 (1)	19	2	43/2
Southern Region	72 (10)	42	3	160/8
Western Region	125 (19)	65	10	103/3
ARS Sites	45 (1)	0	0	61/1
Canadian Sites	15 (0)	0	0	0/0
TOTAL	352 (32)	149	18	420/18

PRESENTATIONS/POSTERS

Axtell, A. 2024. Integrated Solutions Deep Dive. University of Florida, Gainesville March 6, 2024 (Presentation)

Axtell, A. 2024. The IR-4 Project. University of Wyoming, October 1st, 2024 (Virtual presentation)

Batts, R.B., J. Patel, A. Axtell, J. Baron, D. Carpenter, and H. Ross. 2024. IR-4 Project: Success and Benefits to Specialty Crop Growers. 2024 Southeast Regional Fruit and Vegetable Conference, Savannah, GA. Jan. 11-14, 2024 (Poster)

Batts, R.B. 2024. IR-4: Weed Science Update - Food Crops. Annual meeting of the Weed Science Society of America's E-10 committee (Weed Control for Specialty Crops). Jan. 12, 2024. (Presentation-virtual)

Batts, R.B. 2024. IR-4: Weed Science Update - Food Crops. Proceedings of the Weed Science Society of America and Southern Weed Science Society joint meeting, San Antonio, TX. Abstract # 477. (Presentation)

Batts, R.B., J. Patel, A. Axtell, J. Baron, D. Carpenter, and H. Ross. 2024. IR-4 Project: Success and Benefits to Specialty Crop Growers. Proceedings of the Weed Science Society of America and Southern Weed Science Society joint meeting, San Antonio, TX. Abstract # 135. (Poster)

Batts, Roger B. 2024. Registration Support for Pest Management Tools in Specialty Crops, The IR-4 Project: Purpose, Process, and Productivity. Southwest Ag Summit, Yuma, AZ, Feb. 22, 2024. (Presentation)

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[3] Data presented as total number of trials and the number of carryover trials in parenthesis

[4]IR-4 is deferring starting new Integrated Solutution projects (priorities from 2024 Food Program Workshop) until late 2025/early 2026

Batts, Roger B. 2024. Registration Support for Pest Management Tools in Specialty Crops, The IR-4 Project: Purpose, Process, and Productivity. Center of Excellence for Regulatory Science in Agriculture, Raleigh, NC. April 22, 2024. (Lecture-virtual)

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Patel, J., Batts, R., Axtell, A., Ross, H., and Baron, J. 2024. Serving the specialty crop community with pest management solutions. Annual Phytopathological Society meeting, Memphis, Tennessee. (Poster)

Patel, J. The IR-4 Project: Pest Management Solutions for Specialty Crops and Specialty Uses. 2024. Association of Research Directors Fall Business Meeting, Raleigh, NC. (Presentation)

Patel J. The IR-4 Project: Pest Management Solutions for Specialty Crops and Specialty Uses. 2024. North Carolina Association of County Agricultural Agents Meeting, Wrightsville Beach, NC. (Presentation)

Patel, J., Batts, Roger, Axtell, A., Baron, J. The IR-4 Project: Pest Management Solutions for Specialty Crops and Specialty Uses. 2024. International Carrot Conference, Raleigh, NC (Presentation)

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A. Szczepaniec, A. Lathrop-Melting, T. Janecek, P. Nachappa, W. Cranshaw, G. Alnajjar, A. Axtell. 2024. Suppression of hemp russet mite, *Aculops cannabicola* (Acari: Eriophyidae), in industrial hemp in greenhouse and field, *Environmental Entomology*, Volume 53, Issue 1, Pages 18–25, https://doi.org/10.1093/ee/nvad052

L.M. Sosnoskie, R.B. Batts, Thierry Besançon, 2024 An Evaluation of Targeted Spraying for Reducing Herbicide Use, Enhancing Crop Safety, and Improving Weed Control in Highbush Blueberry, *HortTechnology*, Volume xx, Pages https://doi.org/

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[IR-4 HQ]. (2024, April 1). *IS00437: Control of Citrus Flat Mite in Pomegranate* [Video]. IR-4 Project. https://youtu.be/P3ktl8AIgkU

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[IR-4 HQ]. (2024, April 8). *IS00436: Management of Cercospora leaf spot in sugarbeet* [Video]. IR-4 Project. https://youtu.be/E0c8P_-RwGQ

[IR-4 HQ]. (2024, April 8). *IS00332 Control of Botrytis in Caneberries* [Video]. IR-4 Project. https://youtu.be/jMI_sqJubCQ

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[IR-4 HQ]. (2024, April 8). *PR13493 Performance of Fluxapyroxad + Pyraclostrobin* [Video]. IR-4 Project. https://youtu.be/jBeS7g6JTsc

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[IR-4 HQ]. (2024, August 19). *The IR-4 Priority Upgrade Proposal* [Video]. IR-4 Project. https://youtu.be/yQBPGcdAuws

[IR-4 HQ]. (2024, September 23). *Submitting a Project Clearance Request* [Video]. IR-4 Project. https://youtu.be/3BO23su4ocM

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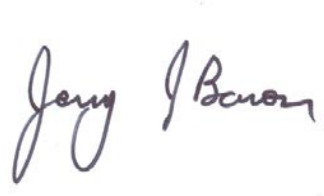
December 31, 2024

Approved by:



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Michigan State University

ATTACHMENT 1 – Participants in the Process

A. **Commodity Liaison Committee (CLC)** - This advisory group provides input to the IR-4 Project Management Committee on overall operations and program direction. Members include:

Michael Aerts, Florida Fruit and Vegetable Association
Zack Bagley, California Tomato Research Institute
Michael Bledsoe, Village Farms, L.P.
John Walt Boatright, American Farm Bureau Federation
Jennifer Clarke, California Leafy Greens Research Program
James R. Cranney, California Citrus Quality Council
Maggie Elliot, Hops Growers of America
William Frantz, The Cranberry Institute
Michele Grainger, NC SweetPotato Commission
Bob Jones, The Chef's Garden
Bob Kaldunski, Ginseng Board of Wisconsin
Kevin Kudsk, National Onion Association
Michael Martin, Horticulture Research Institute
Armando Monterroso, Brooks Tropicals, LLC
Pete Nelson, Cherry Marketing Institute
Keith Pitts, Bioceres Crop Solutions
Kam Quarles, National Potato Council
Amy Plato Roberts, Lallemand Plant Care
Rachel Roberts, American Mushroom Institute
Steven Salisbury, Mint Industry Research Council
Todd Scholz, USA Dry Pea & Lentil Council and CLC Chair
Jonathan Sarager, Western Growers
Alan Schreiber, Agriculture Development Group, Inc.
Laura Shumow, American Spice Trade Association
Michelle Starke, CoverCress, Inc.
Berry Tanner, National Watermelon Association (alternate)
Amy Upton, Michigan Nursery & Landscape Association
Lee Van Wychen, Weed Science Society of America
Herman Waguespack, American Sugar Cane League
Ryan Wysocki, Michigan Blueberry Commission

B. **Cooperating Government Departments and Agencies**

- U.S. Department of Agriculture: National Institute of Food and Agriculture (NIFA); Agricultural Research Service (ARS); Foreign Agriculture Service (FAS);
- U.S. Environmental Protection Agency (EPA)
- State of California Department of Pesticide Regulation (DPR)
- agInnovation (State Agricultural Experiment Stations/Land Grant Universities)
- Agriculture and Agri Food Canada-Pest Management Centre (Canada-PMC)
- Health Canada-Pest Management Regulatory Authority (PMRA)

C. **Crop Protection Industry** – Companies with products involved in IR-4's research in 2024 include:

Company	Food Residue Study	Food Crop Product Performance	Integrated Solutions	Environmental Horticulture
Adama	X	X	X	
Active Cross		X	X	

Company	Food Residue Study	Food Crop Product Performance	Integrated Solutions	Environmental Horticulture
Agbiome			X	
AgBitech			X	
Agrospheres			X	
AgroVentures			X	
Albaugh	X	X	X	
Ascribe BioScience				X
AMVAC	X		X	
BASF Corporation	X	X	X	X
Bayer Crop Science	X	X	X	
Belchim Crop Protection		X		
Biosafe Systems			X	X
Bioworks			X	X
BlackSmith BioScience INC			X	
Certis USA			X	
Corteva Agrisciences	X	X	X	X
DSM			X	
ENVU	X			X
FMC Corporation	X	X	X	X
Gowan Company	X	X	X	X
Helena Agri-Enterprises			X	
Huma			X	
ICL Specialty Fertilizers				X
ISK Biosciences	X	X	X	X
Jet Harvest				
KI-Chemical	X	X	X	

Company	Food Residue Study	Food Crop Product Performance	Integrated Solutions	Environmental Horticulture
Kemin Crop Technologies			X	X
Koppert			X	
Lallemand			X	
Landis International	X			X
MustGrow Biologicals			X	
NanoCrops			X	
Nichino America	X	X	X	
Nisso			X	X
NuFarm America			X	X
OAT Agrio	X			
OHP				X
Oro Agri			X	
Plant Health Care		X	X	
PreZero			X	
Profarm			X	X
Rainbow Treecare Scientific				X
SAN Agrow			X	
SAS			X	
SePRO Corporation			X	X
Sipcam Agro			X	
Stepan				X
Summit Agro			X	
SymAgro			X	
Syngenta Crop Protection	X	X	X	X
TDA				X

Company	Food Residue Study	Food Crop Product Performance	Integrated Solutions	Environmental Horticulture
Terramera			X	
Tidal Grow AgriScience			X	
Trece			X	
TKI Novasource	X	X	X	
TLC Products				X
UPL	X		X	
Valent Bioscience		X	X	
Valent USA, LLC	X	X	X	X

D. <u>Project Management Committee</u>

Dr. Jerry Baron*, IR-4 Project Headquarters – IR-4 Project Executive Director
Dr. Douglas Buhler, Michigan State University – Administrative Advisor, North Central Region
Dr. John Davis, University of Florida - Administrative Advisor, Southern Region
Dr. Liwei Gu*, University of Florida – Regional Director, Southern Region
Dr. Mary Hausbeck*, Michigan State University — Regional Director, North Central Region
Dr. Matt Hengel*, University of California, Davis - Regional Director, Western Region and PMC Chair
Dr. Marcel Holyoak, University of California, Davis – Administrative Advisor, Western Region
Dr. Moses Kairo, University of MD Eastern Shore - Administrative Adviser, Northeast Region
Dr. Steven Lommel, North Carolina State University –Advisor
Dr. Joseph Munyaneza, USDA-ARS - Administrative Advisor
Dr. Chris Philips, USDA-NIFA-National Program Leader for IR-4
Mr. Todd Scholz*, USA Dry Pea and Lentil-CLC Chair
Dr. Alvin Simmons*, USDA-ARS – Director Minor Use Program
Dr. Simon Zebelo*, University of MD, Eastern Shore - Regional Director, Northeast Region
*Voting member

E. <u>IR-4 Project Headquarters (HQ)</u>

Dr. Alice Axtell - Research Planning Manager and Integrated Solutions Platform Lead
Ms. Allison Ballantyne – Senior Operations Associate
Mr. Bill Barney – Biopesticide Regulatory Manager
Dr. Jerry Baron – Executive Director
Mr. Roger Batts - Principal Weed Scientist
Ms. Susan Bierbrunner – Data Administrator
Ms. Donna Bouffard - Program Operations Coordinator
Dr. Michael Braverman – Senior Manager Associate - Biopesticide Regulatory
Mr. Jimmy Byrtus – Study Director and Acting Environmental Horticulture Program Manager
Dr. Debbie Carpenter – Assoc. Director for Regulatory Sciences and National Laboratory Director
Dr. Krystal Chojnacki - National Chief of Staff
Ms. Christina Dineen – Chemist and Study Director
Ms. Jane Forder – Lead Quality Assurance Auditor - Northeast and North Central Region
Ms. Shiayi Huang - Data Applications Manager

Ms. Grace Lennon – Senior Regulatory Associate
Ms. Jessica Macari — Study Director
Ms. Cristina Marconi - Registration Manager and Senior Study Director
Dr. Johanna Mazlo - National Quality Assurance Unit Manager
Mr. Philip Moore - Lead Entomologist
Mr. Scott Muir - Lead Quality Assurance Auditor - Analytical Chemistry
Ms. Sherita Normington, Senior Quality Assurance Auditor
Dr. Jaimin Patel – Principal Plant Pathologist
Mr. Josh Peterson - Quality Assurance Auditor
Mr. Thomas Pike – Submission Manager and Senior Study Director
Ms. Hannah Ross – National Information and Communications Officer
Mr. David Schnatter - Research Assistant
Dr. Van Starner – Senior Management Associate
Ms. Juliet Thompson – Research and Audit Specialist, Quality Assurance
Mr. Robert Welker - Study Director

F. Regional/ARS Field Coordinators and Staff
Dr. Kari Arnold, Regional Field Coordinator - Western Region
Ms. Megan James Hickman, Assistant Regional Field Coordinator - Northeast Region
Ms. Mika Pringle Tolson, Assistant Regional Field Coordinator - Western Region
Ms. Marylee Ross, Regional Field Coordinator – Northeast Region
Ms. Kristen Searer-Jones, Regional Field Coordinator - Southern Region
Dr. Alvin Simmons, Regional Field Coordinator- USDA-ARS
Ms. Nicole Soldan, Regional Field Coordinator - North Central Region

G. Laboratory Coordinators (Regional and ARS)
Dr. Matt Hengel, University of California, Davis – Western Region
Dr. Gail Mahnken, University of Florida – Southern Region
Ms. Tamara Snipes, USDA-ARS – Tifton, GA
Mr. T. Todd Wixson, USDA-ARS – Wapato, WA

H. Quality Assurance Unit
Mr. Martin Beran, University of California, Davis
Ms. Jane Forder, North Carolina State University
Ms. Laurel Hsieh, University of California, Davis
Ms. Kathleen Knight, University of Florida
Dr. Johanna Mazlo, North Carolina State University
Mr. Scott Muir, North Carolina State University
Ms. Sherita Normington, North Carolina State University
Mr. Josh Peterson, North Carolina State University
Ms. Juliet Thompson, North Carolina State University
Dr. Yavuz Yagiz, University of Florida

I. IR-4 Researcher & State Liaison Representatives[5]

North Central Region

State	State Liaison Rep.	Research Area
IA	S. Slack	
IL	M. Babadoost	K. Gage (IS)
IN	S. Meyers	J. Beckerman (EH), S. Meyers (P) (IS)
KS	R. Cloyd	
MI	N. Soldan	M. Hausbeck (P) (IS) (EH), T. Miles (P), N. Rothwell (P), D. Saha (EH), N. Soldan (SLR) (R) (P), C. Wheeler (R), M. Quintanilla (EH)
MN	Vacant	M. Bernards (P)
MO	I. Valmorbida	
ND	B. Jenks	Q. Jia (R)
NE	N. Lawrence	
OH	A. Leach	L. Canas (IS) (EH), L. Horst* (R), A. Leach (IS), A. Robinson (R) (P), C. Taylor (IS), F. Hand (EH), M. Reding*(EH)
SD	G. Reicks	G. Reicks (IS)
WI	D. Heider	S. Chapman (R), D. Heider (R)

Northeast Region

State	State Liaison Rep.	Research Area
CT	S. Kodati	S. Kodati (P)
DE	D. Owens	D. Owens (P) (IS), M. VanGessel (P) (IS)
MA	S. Scheufele	S. Scheufele (IS)
MD	A. Kness	D. Cochran (EH), M. Hickman (R), M. Hu (P) (IS), M. Ross, (R), K. Vollmer (P)
ME	L. Calderwood	
NH	Vacant	
NJ	T. Besancon	T. Besancon (P) (IS), W. Bouchelle (R), J. Fisher (R)
NY	L. Sosnoskie	N. Catlin (EH), D. Gilrein (EH) (P) (IS), D. Heck (P), H. Keagan (R), B. Nault (P), L. Sosnoskie (P) (IS), Jared Dyer (EH) (P) (IS)

[5] R= Residue Field Trials/Food Program, P= Product Performance/Food Program, IS= Integrated Solutions, EHC= Environmental Horticulture Program, *= USDA - Agriculture Research Service Researcher

State	State Liaison Rep.	Research Area
PA	G. Krawczyk	
RI	Vacant	
VT	A. Hazelrigg	
WV	C. Quesada	M. Rahman (EH)

Southern Region

State	State Liaison Rep.	Research Area
AL	E. Vinson	D. Held (EH), O. Ajayi (P),
AR	H. Wright-Smith	A. Bowden(EH), N. Burgos (P), A. Cato (P), H. Wright-Smith (P),
FL	P. Dittmar	J. Beuzlin (P), N. Boyd (P), D. Carrillo (P), A. Dale (EH), J. Desaeger (P), P. Dittmar (P), R. Gazis (P) (IS), M. Haseeb (IS), R. Kanissery (P), O. Liburd (P) (IS), M. Long (R), C. Marble (EH), A. Meszaros (P), D. Norman (EH), L. Osbourne(EH), N. Peres (P) (IS), K. Stauderman (P), D. Sutherland (R), D. Thomas (R), G. Vallad (P), K. Xavier (P)
GA	S. Culpepper	B. Blaauw (IS), P. Brannen (IS), P. Brenneman (IS), S. Culpepper (P), B. Dutta (P), B. Fraelich* (R), (EH), S. Joseph (EH), J. Oliver (P), A. Sial (P), P. Yu (EH)
KY	R. Bessin	R. Villanueva (IS), C. Wilson(EH),
LA	T. Watson	D. Wright (R)
MS	A. Henn	T. Ayankojo (IS), P. Knight (EH)
NC	D. Monks	W. Cline (P), S. Frank (EH), A. Gorny (P), K. Jennings (P) (IS), R. Leon (P), L. Lopez (P) (IS), I. Meadows (EH), W. Mitchem (P), J. Neal (EH), L. Quesada (P), C. Smith (R) (P), S. Villani (IS), J. Walgenbach (IS)
OK	C. Luper	
PR	W. Robles Vazquez	E. Martinez (P), D. Rivera (EH), W. Robles Vazquez (R) (P)
SC	M. Cutulle	M. Cutulle (P), P. Wade* (R) (EH)
TN	M. Gireesh	F. Baysal-Gurel (EH) (P), A. Witcher (EH)
TX	M. Matocha	T. Baughman (P), K. Cochran (R), G. De la Fuente (P), J. Grichar (P), Y. Jo (IS), T. Jones (R), R. Khan (EH), K. Ong (EH),
VA	D. Frank	S. Acimoivic (IS), J. Derr (EH), D. Higgins (P) (IS), T. Kuhar (IS), D. Pfeiffer (IS)

Western Region

State	State Liaison Rep.	Research Area
AK	P. Kaspari	
AZ	A. Hu	B. Tickes (P), A. Hu (P), J. Pena (P)
CA	K. Arnold	J. Adaskaveg (P), M. Bolda (P), K. Blauer (P) (IS), S. Benson* (R), N. Clark (P), O. Daugovish (P), J. DelCastillo (P), D. Ennes (R), S. Fennimore (P), I. Grettenberger (P), B. Hanson (P), P. Lazicki (IS), N. Leach (R), P. Mauk (IS),, B. Michailides (P), C. Nansen (EH), J. Rijal (IS), J. Sidhu (P), K. Skiles (R), S. Stoddard (IS), T. Turini (IS),B. Uber (EH), A. Wang (P), S. Watkins (R), A. Westphal (P), H. Wilson (IS), S. Zukoff (P)
CO	B. Tonnessen	C. Oman (R), A. Szczepaniec (IS), B. Tonnessen (IS)
GU	R. Miller	
HI	J. Coughlin	Z. Cheng (EH), J. Coughlin (P) (Processing), J. Kam (R), (P), Z. Zhang (R) (P)
ID	R. Hirnyck	W. Meeks (P) (R) (IS), T. Salaiz (IS), P. Hutchison (IS)
MT	Z. Miller	
NM	C. Robbins	C. Robbins (EH) (R)
NV	Vacant	
OR	D. Lightle/A. Rasmussen	J. Felix (P), N. Kaur (P), D. Lightle (R), M. Mattsson (R), M. Moretti (EH) (P), S. Reitz (P) (IS), G. Shresta (P) (IS), J. Weiland* (EH), A. Becerra-Alvarez (EH), A. Rasmussen ®, M. Robinson (R),K. Buckland (P), D. Gent (P), T. Hoskins (EH)
UT	C. Ransom	
WA	D. Walsh	D. Larson* (R) (EH), R. Liu (P), W. Peng (R)
WY	C. Beiermann	

ATTACHMENT 2 – 2024 Tolerance Successes; Permanent Tolerances Published in the Federal Register

Pest Control Agent	Registrant	Type*	Date	Commodity or Crop Group	Note*	PR#	# of Uses	# of Tolerances
Triclopyr	ADAMA, CORTEVA, HELENA	H	02/28/2024	Sugarcane, cane		12084	1	1
Cyclaniliprole	ISK	I	04/23/2024	Vegetable, cucurbit, group 9	6	11893	1	1
				Greenhouse lettuce		12515	1	1
Cyflumetofen	BASF	I	05/10/2024	Berry, low growing, subgroup 13-07G	2	13527	8	1
				Fruit, small, vine climbing, except fuzzy kiwifruit, subgroup 13-07F	2	13526	5	1
				Vegetable, cucurbit, group 9		11786, 11787, 11788	14	1
				Pepper/Eggplant subgroup 8-10B		11790	10	0
Cyantraniliprole	FMC	I	05/15/2024	Edible podded bean subgroup 6-22A		13546	17	1
				Edible podded pea subgroup 6-22B		13547	3	1
				Forage and hay of legume vegetables (except soybeans) subgroup 7-22A		13552	0	1
				Herb fresh leaves subgroup 25A		12402, 12403	205	1
				Herb dried leaves subgroup 25B		12401, 12402, 12403	213	1
				Hops, dried cones		12346	1	1
				Papaya		11300	1	1
				Pulses, dried shelled bean, except soybean, subgroup 6-22E		13550	25	1
				Pulses, dried shelled pea subgroup 6-22F		13551	6	1
				Spices crop group 26		12401	205	1
				Succulent shelled bean subgroup 6-22C		13548	17	1
				Succulent shelled pea subgroup 6-22D		13549	2	1
				Greenhouse lettuce		10327	1	0
				Strawberry		10328	0	0
Indoxacarb	FMC	I	08/08/2024	Brassica, leafy greens, subgroup 4-16B		13581	13	1
				Celtuce	4	13583	0	1
				Chickpea, dry seed	4	13590	0	1
				Coffee, green bean		11467	1	1
				Cottonseed subgroup 20C		13575	0	1
				Fennel, florence, fresh leaves and stalk	4	13584	0	1

Pest Control Agent	Registrant	Type*	Date	Commodity or Crop Group	Note*	PR#	# of Uses	# of Tolerances
Indoxicarb (continued)				Field corn subgroup 15-22C		13588	1	1
				Fruit, pome, group 11-10, except pear		13576	5	1
				Fruit, stone, group 12-12		13577	11	1
				Kohlrabi	4	13585	0	1
				Leaf petiole vegetable subgroup 22B		13580	3	1
				Leafy greens subgroup 4-16A		13579	18	1
				Pear, asian		13592	0	1
				Strawberry		09055	1	1
				Sunflower subgroup 20B		11707 11569	14	1
				Sweet corn subgroup		13589	1	1
				Vegetable, brassica, head and stem, group		13582	0	1
				Vegetable, legume, bean, edible podded, subgroup		13591	17	1
				Vegetable, legume, bean, succulent shelled, subgroup 6-22C		13586	17	1
				Vegetable, legume, pulse, bean, dried shelled, except soybean, subgroup 6-22E		13587	25	1
				Vegetable, fruiting, group		13578	12	1
Indoxacarb	FMC	I	08/08/2024	Brassica, leafy greens, subgroup 4-16B		13581	13	1
Ethaboxam	VALENT	F	08/23/2024	Leaf petiole vegetable subgroup 22B		12075	7	1
Saflufenacil	BASF	H	09/09/2024	Fruit, citrus, group 10-10		13563	14	1
				Fruit, pome, group 11-10		13564	5	1
				Fruit, stone, group 12-12		13565	11	1
				Mint, dried leaves		11921	1	1
				Mint, fresh leaves		11921	0	1
				Nut, tree, group 14-12		13566	26	1
Cyazofamid	ISK	F	12/05/2024	Chick pea,	4	13616	0	2
				Edible podded bean subgroup 6-22A		13617	17	1
				Parsnip root		13018	1	1
				Pulses, dried shelled bean, except soybean, subgroup 6-22E		09533	50	1
				Succulent shelled bean subgroup 6-22C		13618	17	1
2024 Totals							**1015**	**52**

*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, N=nematicide, P=plant growth regulator	
** Note Code 1=Update of established tolerance on old crop group or subgroup 2=Conversion of established tolerance(s) on representative commodities to a crop group or subgroup tolerance 3=Conversion of established tolerance(s) on representative commodities to a crop group or subgroup tolerance ***and*** submission of new data to complete the requirements for a crop group or subgroup 4=Individual commodity tolerance established in response to crop group revision 5=Response to EPA request for Codex harmonization 6=Revised tolerance 7=Tolerance for indirect or inadvertent residues	

ATTACHMENT 3 – 2024 Submissions to EPA, unless otherwise noted as submitted to Registrants, Codex or State Departments of Agriculture

Pest Control Agent	Registrant	Type*	Date	Commodity, Subgroup, Crop Group	PR#
Fenhexamid	UPL NA	F	01/31/2024	Basil, fresh leaves Basil, dried leaves	12062 12062
Tolfenpyrad	NAI	I	04/26/2024	Edible podded bean subgroup 6-22A	11299
Potassium phosphite[6]	HELENA, LUXEM, VLSCI	F	04/17/2024	Peanut	12705
Saflufenacil	BASF	H	05/20/2024	Pennycress, seed	13522
Fluazinam	ISK, SYNGEN	F	07/17/2024	Grape Strawberry Vegetable, brassica, head and stem, group 5-16 Vegetable, legume, bean, edible podded, subgroup 6-22A Vegetable, legume, bean, succulent shelled, subgroup 6-22C Vegetable, legume, pea, edible podded, subgroup 6-22B Vegetable, legume, pea, succulent shelled, subgroup 6-22D Vegetable, legume, pulse, bean, dried shelled, except soybean, subgroup 6-22E Vegetable, legume, pulse, pea, dried shelled, subgroup 6-22F	12715 11920 07091 13834 13835 13836 13837 13838 13839 13840
Clopyralid	CORTEVA	H	07/30/2024	Hazelnut (filbert)	12720
Flumioxazin	VALENT	H	08/06/2024	Avocado Banana Berry, low growing, subgroup 13-07G, except cranberry Celtuce Cottonseed subgroup 20C Cranberry Fennel, florence, fresh leaves and stalk Fig Fig, dried Guava Leaf petiole vegetable subgroup 22B Lychee Pulses, dried shelled bean, except soybean, subgroup 6-22E Pulses, dried shelled pea subgroup 6-22F Stevia, fresh leaves Stevia, dried leaves Sugar apple Swiss chard	10253 11289 13878 13443 13444 11962 13445 11545 11545 10254 13446 11290 13876 13877 12542 12829 12542 12829 11292 13447 11132

[6] Submitted to Registrant

				Vegetable soybean, edible podded Vegetable soybean, succulent shelled Cabbage Broccoli Tomato Cucumber	11132 12927 12928 12929 12930
Flutianil	LANDIS, NAI, OATAGRIO	F	12/06/2024	Brassica leafy greens subgroup 4-16B Hop, dried cones Lettuce, head Lettuce, leaf Peach subgroup 12-12B Vegetable, fruiting, group 8-10 Greenhouse cucumber	09184, 09187 12655 09180, 12388, 12374 10220 12289, 12288, 12287 12511
Ethephon	ADAMA	P	12/19/2024	Fig	10115
Prometryn	ADAMA, SYNGEN	H	12/20/2024	Leek	12131

*F=fungicide, H=herbicide, I=insecticide/acaricide, M=molluscicide, N=nematicide, P=plant growth regulator

ATTACHMENT 4 – 2024 Food Use Research Projects, New Residue Studies

Chemical	Crop	PR #
Afidopyropen	Grapefruit	13761
Afidopyropen	Lemon	13760
Chlorantraniliprole	Hemp	13000
Clethodim	Fig	13740
Cyclaniliprole	Onion, bulb and green	13595
Difenoconazole + Azoxystrobin	Avocado	13771
Ethephon	Ginseng	12613
Ethofumesate	Swiss chard	12714
Fluazaindolizine	Hops	13093
Fluazaindolizine	Pineapple	13665
Fluazifop-p-butyl	Pepper (bell & nonbell)	13798
Fludioxonil + Pydiflumetofen	Guava	13776
Flumioxazin + Pyroxasulfone	Cantaloupe	12582
Flumioxazin + Pyroxasulfone	Cucumber	12580
Flumioxazin + Pyroxasulfone	Squash	12581
Fluopicolide	Cherry	13281
Fluopyram	Fig	13744
Flutianil	Mint (field & GH)	13783
Flutriafol	Blueberry	13706
Flutriafol	Pistachio	13664
GF-4031	Cucumber (GH)	13290
GF-4031	Pepper (GH)	13545
GF-4031	Tomato (GH)	13289
Indaziflam	Camas	13689
Indoxacarb	Clover (seed crop)	13718
Isocycloseram (ISM-555)	Cucumber (GH)	13404
Isofetamid	Strawberry (GH)	12609
Linuron	Mint	13732
Linuron	Onion (green)	13734

Chemical	Crop	PR #
Linuron	Stevia	13733
Mefentrifluconazole	Broccoli	13741
Mefentrifluconazole	Cabbage	13779
Mesotrione	Sesame	13750
Metribuzin	Potato	13027
NAA	Hazelnut (filbert)	13705
NAA	Plum	13668
Norflurazon	Clover (seed crop)	13092
Oxathiapiprolin	Peach	13633
Oxathiapiprolin	Plum	13632
Oxathiapiprolin + Mandipropamid	Cacao bean	13635
Propamocarb-HCL	Hops	13736
Pyridaben	Lychee	08266
Pyridaben	Pepper (bell & nonbell) (GH)	08037
Quinclorac	Grape	12611
S-Metolachlor/Metolachlor	Carinata (Brassica carinata)	13631
S-Metolachlor/Metolachlor	Field pennycress	12868
Tolpyralate	Blueberry	13682
Tolpyralate	Hazelnut (filbert)	13679
Tolpyralate	Sweet potato	13703
Trifloxystrobin + Fluopyram	Pomegranate	11693
Zeta-cypermethrin	Beet greens (garden)	13648
Zeta-cypermethrin	Dragon fruit (pitaya)	13305
Zeta-cypermethrin	Hemp	13011

ATTACHMENT 5 – 2024 Food Use Product Performance Research Program

Chemical	Crop	PR#	Research Trial location
1-Aminocyclopropane-1-carboxylic acid (ACC)	Cherry	13334	CA, CA, MI
AC203	Strawberry	13756	CA, FL, MD
Afidopyropen	Safflower	13459	CA
Azoxystrobin	Cabbage (GH transplants)	13112	CA, MI
Azoxystrobin	Lettuce (GH transplants)	13109	CA, MI, VA
Azoxystrobin	Mint (GH transplants)	13108	TN
Bifenthrin	Onion	13485	OR
Chlorantraniliprole	Hemp	13000	AL, OR
Cyazofamid	Parsnip	13018	OR
Cyclaniliprole	Onion	13595	NY, OR
Cyflumetofen	Caneberry	11808	AR, CA
Difenoconazole + Azoxystrobin	Avocado	13771	FL
Ethephon	Ginseng	12613	MI, MI
Ethofumesate	Swiss chard	12714	NY, OH
Flazasulfuron	Peach	13323	CA, CA, MI, NC, NC, WA
Flazasulfuron	Strawberry	13322	AL, NC
Florpyrauxifen-benzyl	Pomegranate	13331	CA
Fluazaindolizine	Banana	13222	PR
Fluazaindolizine	Onion (dry bulb)	12770	CA
Fluazaindolizine	Pineapple	13665	HI
Fluazinam	Avocado	08284	CA
Fludioxonil + Pydiflumetofen	Basil	13078	NC
Fludioxonil + Pydiflumetofen	GH cucumber	12673	VA
Fludioxonil + Pydiflumetofen	Guava	13766	FL
Flumioxazin + Pyroxasulfone	Strawberry	12579	AL, FL, MD
Fluopyram	Fig	13744	CA
Fluroxypyr	Blueberry	13709	IN, NJ, OR
Flutriafol	Blueberry	13706	GA, MI, NC

Chemical	Crop	PR#	Research Trial location
Flutriafol	Pistachio	13664	AZ
GF-4031	Pepper (GH)	13545	AZ, FL
GF-4031	Strawberry	13355	CA
GF-4031	Tomato (GH)	13289	KY, WV
Glufosinate	Asparagus	13499	CA
Glufosinate	Strawberry	13455	CA, WA
Indoxacarb	Clover (seed crop)	13718	OR, OR
Inpyrfluxam	Tomato	13511	CA, FL
Isocycloseram (ISM-555)	Bean (snap)	12800	DE, NY
Mefenoxam	Passionfruit	13046	FL
Mefenoxam	Strawberry (GH transplants)	13716	MI, MI
Mefentrifluconazole	Broccoli	13741	AZ, CA, VA
Mefentrifluconazole	Cabbage	13779	AZ, CA, GA
Mefentrifluconazole	Hops	13505	OR
Mesotrione	Sesame	13750	AR, TX, TX
Novaluron	Blueberry	13532	FL, GA
Novaluron	Caneberry	13502	CA, GA
Novaluron	Celery	13614	FL, FL
Oxathiapiprolin	Peach	13633	CA, FL
Oxathiapiprolin	Plum	13632	CA
Oxathiapiprolin + Mandipropamid	Cacao bean	13635	HI
Penthiopyrad	Avocado	13075	PR
Penthiopyrad	Pomegranate	13514	CA
PHC68949 (PHC)	Sweet potato	13755	FL, NC
Pyraflufen-ethyl	Onion (dry bulb)	13642	CA, OR, WA
Pyraziflumid	Lettuce (GH)	12975	CT, NY
Pyridaben	Lychee	08266	FL, HI
Pyridaben	Miracle fruit	12562	FL, FL
Pyridaben	Pepper (bell & nonbell) (GH)	08037	NC, NY
Pyridate	Pea (edible podded and succulent shelled)	05295	DE, MD, NJ, NY

Chemical	Crop	PR#	Research Trial location
Pyroxasulfone	Bean, lima (succulent & dried shelled)	13382	DE, IN, MD, OH
Pyroxasulfone	Carrot	13723	CA, NY
Pyroxasulfone	Sesame	11951	TX
Quinclorac	Strawberry	11611	AL, OR, SC
Saflufenacil	Field pennycress (oil seed)	13522	MN, MN, MO
S-metolachlor/metolachlor	Carinata (Brassica carinata)	13631	GA, NC
Sulfentrazone	Pepper (nonbell)	09025	FL, FL, FL
Terbacil	Caneberry	11128	AR, NC, OH, OH, OR
Tiafenacil	Cucumber	13498	CA, CA, FL, OH
Tiafenacil	Hops	13282	ID
Tiafenacil	Tomato	13500	AZ, AZ
Tolpyralate	Blueberry (highbush)	13682	NJ, OR
Tolpyralate	Hazelnut (filbert)	13679	OR, OR
Uniconazole-P	Mint (GH transplants)	13530	FL, MI
Zeta-cypermethrin	Beat greens (garden)	13648	CA
Zeta-cypermethrin	Dragon fruit (pitaya)	13305	FL, PR
		Total	**148**

Attachment 6 - 2024 Environmental Horticulture Program Research Summaries

Pendimethalin Crop Safety- Pendimethalin has been registered in the United States since 1994 for uses in and around environmental horticulture plants in production nurseries and in landscapes. Between 1981 and 2023, the IR-4 Project has conducted 559 trials using two granular formulations (Corral 2.68G and Pendulum 2G), three liquid formulations (Pendulum AquaCap, Pendulum 3.3EC and Prowl 4E) and a wettable dry granular formulation (Pendulum WDG). Between 2014 and 2018, Pendulum 2G was examined for use on ornamental grasses. During 2020 and 2021, Pendulum 2G was a part of a project to examine options for field in-ground cut flower growers. This summary contains data across all the reports available through IR-4 since screenings began in 1981. Two hundred twenty-four (224) genera or species have been screened with the six different pendimethalin formulations. Sixty-three plant species or genera exhibited no or minimal, transitory phytotoxicity to over the top applications of Corral 2.68G and Pendulum 2G formulations, eight plant species or genera exhibited no or minimal, transitory phytotoxicity to over the top applications of Pendulum AquaCap and Pendulum WDG formulations, and six species or genera exhibited no or minimal, transitory phytotoxicity to over the top applications of Pendulum 3.3 EC or Prowl 4E. This research has been beneficial for adding new crop to the Pendulum 2G and Pendulum WDG formulations.

S-Metolachlor Crop Safety- From 2004 to 2023, IR-4 completed 258 trials on Pennant Magnum (s-metolachlor). The data contained in this report was generated to register uses of s-metolachlor on and around environmental horticulture plants with over-the-top applications. The s-metolachlor rates in the testing program were 2.5, 5.0, and 10.0 pounds active ingredient per acre (lb ai per A) as the 1X, 2X and 4X rates with 4, 6, or 8 week intervals between applications. Pennant Magnum has been applied to 136 plant genera or species. Of these, 14 plant species exhibited no or minimal transient injury after application at all three rates. Thirteen (13) crops exhibited no phytotoxicity at 2.5 lb ai per acre but did have some injury at 5.0 and/or 10.0 lb ai per acre. Twenty-five (25) crops exhibited significant phytotoxicity at even the lowest rate. For 11 crops, the response among sites was variable, and 40 crops have less than three trials completed.

Flumioxazin Crop Safety- Flumioxazin has been registered in the United States since 2003 for uses in and around environmental horticulture plants in production nurseries and in landscapes. Between 2000 and 2023, the IR-4 Project has conducted 641 trials using three granular formulations (BroadStar 0.17G, BroadStar 0.25G and BroadStar 0.25G VC1604) and a wettable dry granular formulation (SureGuard 51WDG). During these trials, 168 crop species or genera were studied, although not all crops with all formulations: 149 with BroadStar formulations and 75 with SureGuard 51WDG). Sixty-seven plant species or genera exhibited no or minimal transitory phytotoxicity to applications of BroadStar G formulations. Twenty-five are not currently on the commercial BroadStar 0.25G registered label and can be added. For SureGuard 51WDG, seven plant species or genera exhibited no or minimal, transitory phytotoxicity to over-the-top applications; all these are already in the current label. Seven crops demonstrated significant phytotoxicity at all tested rates of SureGuard 51WDG with 3 or more trials. Twenty-four other crops exhibited significant injury in one or two trials. If a list of 'Sensitive Species' is added to the current label, these crops could be included.

Afidopyropen Crop Safety- Ventigra (afidopyropen) is an insecticide registered by BASF for the control of piercing and sucking insect pests such as aphids, whiteflies, psyllids, scales and leafhoppers. The IR-4 Project completed 120 crop safety trials on 46 environmental horticulture plant species or genera from 2015 through 2019. In these trials, 28 genera or species exhibited minimal or no injury after foliar applications in a minimum of 3 trials for each crop. Nineteen species or genera exhibited minimal or no injury in a limited number of trials (one or two) for each crop, and two crops exhibited variable responses (Aquilegia sp. and Dahlia sp.) so further screening for cultivar or species differences is necessary.

Mefentrifluconazole Crop Safety- Avelyo (mefentrifluconazole) is a fungicide developed by BASF that has been registered for use since May 2020. It is used for the control of diseases such as anthracnose, powdery mildew, leaf spot, scab, rust, and blight of environmental horticulture crops. The IR-4 Project has completed 111 crop safety trials on 27 environmental horticulture plant species or genera during 2019 to 2023. This summary contains data across all reports available through IR-4 since 2019, including efficacy experiments

where crop safety data were collected. Thirty-five species or genera exhibited no or minimal injury after drench or foliar treatments of Mefentrifluconazole. Twenty-five of the tested plants exhibited no injury across multiple trials, while the remaining ten plants showed the same with less than 3 trials. Crop species or genera not currently present on the label could be added based on this data, provided that BASF has similar results.

Fluopicolide Crop Safety- Fluopicolide was registered as Adorn 4SC in the United States in 2008 for control of Pythium, Phytophthora and downy mildew in environmental horticulture plants. State registrations in California and New York occurred in 2010 and 2011, respectively. Adorn 4SC may be applied on container, bench, or bed grown ornamentals in greenhouses, lathehouses, shadehouses or outdoor landscapes, and on conifers including Christmas trees in outdoor landscapes. The commercial label contains a list of 22 ornamental plants exhibiting no or minimal injury. During 2008 to 2011, the IR-4 Project completed 84 trials on 24 environmental horticulture plant species or genera examining phytotoxicity related to drench and foliar applications of Adorn 4F. In all trials except one, treated plants exhibited minimal or no injury to drench and foliar applications. Sufficient trials showed 16 species or genera exhibiting minimal or no injury. Of these, 5 are already on the Adorn label; Acer palmatum, Begonia sp., Calibrachoa sp., Juniperus sp., Petunia sp, Pinus sp., Quercus sp., Syringa sp, Taxus sp, Thuja sp, and Viburnum sp. are the 11 crops not yet listed. Based on this information, it is recommended that these be added to the list of tolerant plants on the Adorn 4F label.

Nematode Efficacy- Nematodes are typically known for the damage they cause when feeding on or residing inside roots. However, they also can impact foliage. The host range of foliar and soil dwelling nematodes is wide, affecting various environmental horticulture crops, and causing economic losses in greenhouses, nurseries, and residential and commercial landscapes. Soil dwelling nematodes feed on roots and depending on species can reduce root mass or cause root enlargement such as root knot nematodes. Foliar nematodes feed on mesophyll cells causing chlorosis which eventually turns into necrosis which is a serious problem. This summary and literature review is a compilation of experiments sponsored by IR-4 and published literature from 1999 through 2023. The only prospective nematicides for soil-dwelling nematodes with good to excellent efficacy in more than one IR-4 trial is Indemnify, but several show promise including Bountify, NemaFix, NMG-787, Reklemel, and Rootshield Plus. Products with good efficacy for foliar nematodes include: abamectin, acephate, clothianidin, dimethoate, insecticidal soap, isofenphos, methiocarb, neem oil, oregano oil, oxamyl and lambda-cyhalothrin. Active ingredients with excellent efficacy included: ammonia hydroxide, Burkholderia cepacia, chlofenapyr, cinnamon + clove + thyme oils (32% + 8% + 15%), diazinon, ethoprophos, grapefruit seed extract, imidacloprid, peroxyacetic acid, potassium permanganate, sodium dichloroisocyanurate, sodium hypochlorite, and trichlofon.

Bacterial Disease Efficacy- From 2008 to 2022, 83 products were tested through the IR-4 Environmental Horticulture Program as foliar or drench applications against bacterial pathogens. In addition to research collected through the IR-4 program, this summary includes a review of experiments conducted from 2005 to 2017, mainly on tree crops. Species tested included: Agrobacterium tumefaciens, Erwinia amylovora, E. chrysanthemi, Pseudomonas cichorii, P. marginalis, P. syringae, Pseudomonas sp., Xanthomonas axonopodis, Xanthomonas campestris, and Xanthomonas spp. In general, all products, including the standard copper containing bactericides (Camelot, CuPRO, Cuprofix, Cuprofix MZ, Junction, Kocide, MasterCop, Phyton 27, ReZist, etc.), mancozebs (Dithane, Penncozeb, Protect) and biologicals (Cease, Regalia, Rhapsody and Serenade), provided variable efficacy on these bacterial pathogens. Several new products that looked promising based on their efficacy relative to standards including, CG100, Citrex, HM-0736, Insimmo, Postiva, Proud 3, Stargus, Taegro, Tril-21 and ZeroTol. Further research is needed to obtain additional efficacy data to recommend actions to register or amend labels for these pests.

Mollusc Efficacy- Molluscs (slugs and snails) can cause significant feeding damage of environmental horticulture plants in production. Baits containg metaldehyde or iron phosphate are the primary means to manage molluscs. This project was initiated to examine the potential for active ingredients with less risky environmental and mammalian toxicity profiles to be effective molluscicides. To study options for managing snails, eleven (11) products with eight (8) different active ingredients were screened against the brown garden snail (Cyptomphalus apersus). Of these, two baits with metaldehyde (Deadline T&O and Metarex) provided

generally good management of the brown garden snail, although not strictly by causing mortality; in experiments where mortality was limited, plant damage was reduced to commercially acceptable levels. TC Powder provided variable efficacy, but further studies are warranted to determine how efficacy could be improved. SpinOut also provided inconsistent efficacy, but later studies demonstrated better plant protection than earlier experiments.

Fatty Acid Herbicide Efficacy- Fatty acid herbicides represent potential alternatives for managing glyphosate resistant weeds as well as an option for less environmental impacts for post emergent weed management. However, optimal use patterns have not been fully established. From 2020 to 2023, five different fatty acid herbicides were examined with and without adjuvants to determine optimal use patterns to manage grassy and broadleaf weeds as directed applications. The two different active ingredients screened were pelargonic acid (Axxe and Scythe) and the combination of caprylic acid + capric acid (FireWorxx, HomePlate, and Suppress). The weeds studied were annual bluegrass, (Poa annua), chickweed (Stellaria media), crabgrass (Digitaria sp.), smooth crabgrass (Digitaria ischaemum), field horsetail (Equisetum arense), redroot pigweed (Amaranthus retroflexus), and spotted/prostrate spurge (Chamaesyce maculata). Not all products were screened against all weeds, and no herbicide-weed combination was tested in three or more trials. Either solo or in combination with adjuvants, FireWorxx and Suppress provided excellent efficacy of smooth crabgrass, field horsetail, redroot pigweed and spotted spurge. Scythe provided great to excellent efficacy of these same weeds. HomePlate provided excellent efficacy for annual bluegrass and chickweed but variable efficacy for crabgrass. Axxe exhibited good to great efficacy for these same weeds.

Phytophthora Efficacy- Root rots caused by Phytophthora species are often not noticed until foliar symptoms of wilting and stunting are observed. Phytophthora root rots are difficult to manage there are multiple species with differential sensitivities to fungicides.Plus, they are classified as Oomycetes in the kingdom Chromista, commonly known as water molds, and can have a propensity to develop resistance to single site mode of action fungicides. Thus, Phytophthora diseases have been prioritized for research periodically at IR-4 workshops since 2003. From 2003 to 2015, 74 products representing 65 active ingredients were tested through the IR-4 Program as drench or foliar applications against eleven Phytophthora species causing root rots and stem/leaf blights in a total of 926 trials. Phytophthora species tested included: P. cactorum, P. cinnamomi, P. citricola, P. cryptogea, P. drechsleri, P. nicotianae/parasitica, P. palmivora, P. plurivora, P. ramorum, P. syringae, and P. tropicalis. For certain more prevalent and well-studied species, multiple products within several modes of action exhibited good to excellent management: P. cinnamomi, P. cryptogea, P. drechsleri, P. nicotianae, P. palmivora, P. ramorum, and P. tropicalis. For P. cactorum, none of the experiments provided separation among the treatments and controls. Control of P. cinnamomi root rot was achieved primarily with drench applications onto azaleas. When this pathogen was tested on rhododendrons, the data were either inconclusive or the products did not perform as well as on azaleas with the exception of Magellan and Fenamidone. For P. citricola, Adorn and the phosphorus acid generators provided good to great efficacy, but none of the typical oomycete fungicides were acceptable. For P. drechsleri root rot, the good to excellent efficacy was achieved with several products including BioPhos, Segway, Stature DM, and Terrazole. For P. nicotianae, consistent efficacy across crops was difficult to achieve, but the best performers included Adorn, Aliette, Alude, Biophos, Fenamidone, Insignia, Micora Segway, Stature DM, Subdue MAXX, and Vital. For P. ramorum blights, Subdue MAXX provided the most consistent control. Adorn, Fenamidone, Insignia, Segway, and Stature also provided good control. For P. plurivora, 7 products provided good to excellent activity, but only two experiments have been completed so far. For P. syringae, only the phosphorous acid generators provided acceptable reduction in disease in two experiments. For P. tropicalis, the best control was achieved with Adorn and Stature. Several products have good to excellent efficacy across multiple Phytophthora species: Adorn, Disarm, Fenstop, Micora, Orvego, Segway, Stature, and Subdue Maxx, plus certain phosphorous acid generating products.

Attachment 7 - 2024 Environmental Horticulture Program Research Activities

Discipline	Project	Researchers	Crops	Products	Trials
Entomology	Aphid Efficacy	2	1	12	21
	Beneficial Insect Chemistry Screen	1	N/A	3	6
	Borer & Beetle Efficacy	1	1	1	1
	Lygus Efficacy	1	1	5	5
	Scale Efficacy	5	6	12	46
	Thrips Efficacy	6	2	13	44
	BW400 Crop Safety	3	9	1	14
	Cyclaniliprole Crop Safety	3	3	1	6
	Horticulture/Mineral Oil Crop Safety	2	1	6	7
	ISM-555 Crop Safety	5	6	1	8
	Neem oil + Azadiractin Crop Safety	1	5	1	5
	NI02ES-1 Crop Safety	4	8	1	21
	Rosemary Oil Crop Safety	1	3	1	4
	V-10433 Crop Safety	3	3	1	3
	RM-1963K Crop Safety	5	14	1	21
Plant Pathology	Botrytis Efficacy	2	6	11	22
	Phytophora Efficacy	4	2	8	32
	Pythium Efficacy	2	2	7	14
	Vascualr Streak Dieback	1	1	12	12
	Nematode Efficacy	1	1	14	14
	Boxwood Blight, Decline and Volutella	4	1	8	29
	Fluazaindolizine Crop Safety	1	2	1	2
	TDA01 Crop Safety	3	6	1	8
	BAS 673 Crop Safety	6	10	1	21
	BW159 Crop Safety	5	8	1	14
	F6123 Crop Safety	1	2	1	4
	XDE-659 Crop Safety	4	4	1	4

	Flutianil Crop Safety	2	2	1	2
	Mandestrobin Crop Safety	3	5	1	5
	ND05AS-1 Crop Safety	3	6	1	8
	Picarbutrazox Crop Safety	4	5	2	12
	Pyriofenone Crop Safety	4	7	1	8
	SP2478 Crop Safety	2	4	1	4
	SP2700 Crop Safety	1	1	1	2
	Thyme Oil Crop Safety	3	4	1	8
Weed Science	Dimethenamid-p Crop Safety	6	13	1	16
	Dimethenamid-p + Pendimethalin Crop Safety	8	16	1	20
	Dithiopyr Crop Safety	2	5	1	5
	Flumioxazin + Prodiamine Crop Safety	1	3	1	3
	Flumioxazin + Pyroxasulfone Crop Safety	3	1	1	3
	Flumioxazin Crop Safety	1	1	1	1
	Imazapic Crop Safety	3	7	1	13
	Indaziflam Crop Safety	2	3	2	3
	Isoxaben + Dithiopyr Crop Safety	5	8	1	8
	Oxyfluofen + Pendimenthalin Crop Safety	3	5	1	5
	Oxyfluorfen + Prodiamine Crop Safety	4	7	1	8
	Pendimethalin Crop Safety	11	24	3	39
	Prodiamine + Isoxaben Crop Safety	4	5	1	5
	S-Metolachlor Crop Safety	9	18	1	37
	SP1182/SP1190 Crop Safety	6	27	1	34
	Tiafenacil Crop Safety	4	3	1	8
	Tolpyralate Crop Safety	4	2	1	6
	Topramazone Crop Safety	4	3	1	8
	Trifluralin + Isoxaben Crop Safety	4	8	1	10

For a detailed list of research activities visit https://www.ir4project.org/ehc/.

Grant Processing

Presenter: Dr. Krystal Chojnacki

IR-4 Project

Closing out NIFA grant

Krystal Chojnacki

Potential Delays

- Prime grant at NC State and subawards for are established on a reimbursement basis.
  - Most universities have to operate with cash on hand.
  - Indirect cost issues impacting this.
- Potential delays from NIFA that *may* be passed down.
- Business as usual for now.

2025 No Cost Extension

- We will need to issue our last No Cost Extension (NCE) Within 90 days of the end of the award.
- The goal will be to have it submitted end of April to NC State.
    - We cannot request it sooner if we want the grant to end 7/31/2026
- ***Reminder moving forward:*** if the grant is again processed as a continuation (4- 1 year increments) then we cannot request NCE except in the last year.

Researcher end date

- Researchers receive 2 years to expend funds.

- Majority of researchers at NC State have struggled to zero out their projects prior to the end date.
  - Many returned funds this past year form Year 1 and 2 that we had to spend down.
  - *Proposal:* Move their end dates up 3 months in the Y5 NCE period to allow IR-4 to expend the funds.
  - ***Researcher 2024 funds will end 4/30/2026***

- We do not want to return funds.

Subaward end dates

- The Year 5 (NCE year) will end July 31, 2026. All funding must be expended by this time by NC State.
- If a subaward returns funding, we need time to spend the amount returned prior to the grant closing date.
- *Subawards will end **April 30, 2025***

IR-4 Project

LEARN MORE

ir4project.org
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Program Update: Food Program Field Program & Submissions

Presenters: Thomas Pike and Cristina Marconi

IR-4 Project

Food Program
March, 2025

Thomas Pike, Cristina Marconi

Outline

New Uses - 2024
Submissions – 2024
Crop Group update
Residue Research Program (10-year history)
Outstanding Field Notebooks
Timeline Summary
Regulatory Challenges

2024 New Uses

8 Actions (new uses)

- Triclopyr (1)
- Cyclaniliprole (2)
- Cyflumetofen (37)
- Cyantraniliprole (696)
- Indoxacarb (139)
- Ethaboxam (7)
- Saflufenacil (57)
- Cyazofamid (85)

Total = 1024 new uses,
52 tolerances

IR-4 Project

2024 Submissions - 9

- Fenhexamid
- Tolfenpyrad
- Saflufenacil
- Fluazinam
- Clopyralid

- Flumioxazin
- Flutianil
- Ethephon
- Prometryn

- Provided to registrant
  - Potassium Phosphite/Peanut

2025 Submissions – 1 (as of 2/14/25)

- Acetamiprid

Crop Group Update

- **Crop Grouping Initiative**

- **All Commodity Classes have been approved by the Codex Alimentarus Commission.**

- **Remain to be published (IR-4 work is completed)**
  - **Phase VII: CG 17, Grass Forage, Fodder, and Hay Group; CG18, Nongrass Animal Feeds and CG9, Cucurbit Vegetables. Timing TBD.**
  - **CG1, Root and Tuber Vegetables and CG2, Leaves of Root and Tuber Vegetables expected early 2025**

- **Analysis for sweet sorghum/sugarcane and CG18 provided to EPA for purposes of harmonizing with Codex, CG9 to follow.**

IR-4 Project

Field Research

2024 Residue Program

- 54 New Studies
- 365 Residue Field trials
- 38 Carryover trials

2025 Residue Program

- 44 New Studies
- 352 Residue Field trials
- 32 Carryover trials

Field Research Program

Region	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
NER	39	27/11*	34	39	36	33	26	28	34	26	65
NCR	59	67/4	66	61	39	50	51	49	81	63	30
SOR	92	78/19	85	78	90	100	95	90	73	74	72
WSR	185	162/16	167	149	164	140	151	128	129	138	125
ARS	62	52/15	67	55	49	62	49	46	56	52	45
Canada	36	32/3	31	19	29	31	10	6	11	12	15
TOTAL	472	418	450	401	407	416	382	347	384	365	352

*indicates 2016 dropped trials, mostly due to study changes.
Other dropped trials not included in numbers reported

IR-4 Project

Field Data Notebooks, 3/25

Year	Total	FRD	RFC	QA	HQ
2022	347	1	2	0	344
2023	384	12	10	23	339
2024	365	160*	47	26	132

*Not included: 31 trials harvested in or after Nov/2024 and 37 delayed trials or trials without master schedule dates provided

IR-4 Project

Outstanding FDB, 3/25

Notebooks with FRD						
Year	ARS	WSR	NER	SOR	NCR	CAN
2022	0	0	0	1	0	0
2023	1	7	0	4	0	0
2024*	30	53	9	34	24	10
*Not included: trials harvested in or after Nov/2024, delayed trials for 2025 and trials without master schedule dates provided.						
Notebooks with RFC						
Year	ARS	WSR	NER	SOR	NCR	CAN
2022	0	0	0	2	0	0
2023	3	3	0	2	2	0
2024	7	15	9	4	11	1

IR-4 Project

Timeline Summary

Internal challenges

Completion of FDB is critical to meeting timelines.

- *2023 Field DataBooks: ~88% at HQ;*
- *2024 Field DataBooks: ~36% at HQ;*
- *RFCs are moving Field Data Books along once received, but there are still 8 books from 2022 and 22 books from 2023 with FRD/RFC. It is crucial to move these along.*
- *More critical as analytical backlog is addressed.*
- *One outstanding book holds up the whole study.*
- *Concern that if we miss a submission, it could be years before it can go in.*
- *eFDB may greatly help ease delayed field data books*

IR-4 Project

Regulatory Challenges

Internal challenges (continues)

Analytical backlog and quality

- *Delays submissions*
- *Costs lab, study directors and QA resources to address*

About sixty studies in final report processing (Writing/QA etc)

More than 100 studies are TBD for submission. Most are signed and ready to submit.

- *Many cannot be submitted as a safety finding cannot be made or registrant is holding submissions.*
- *1 of the 2 registrants shared submission plans for 2024 and 2025, so we are slowly moving forward with some IR-4 submissions.*

Regulatory Challenges

External issues

Impacts from Endangered species act still a concern

- *Concern about mitigation proposals and how they will impact stakeholders*
- *Once in compliance, will not want to be out of compliance*

Registration status in Europe and impact on support from companies for stakeholder requests.

Lack of submission documents for new submissions until previous labels have issued from EPA

Need for pollinator data before registration of new uses may be an obstacle to submissions until current cycle of registration review is completed.

At least three packages close to submission have been delayed as a result of missing pollinator data, likely more to come

Uncertainty over impact of federal government on operation of EPA

Some communication with EPA limited

IR-4 Project

Thank You!

IR-4 Project

Program Reports:
Laboratory Activites & Backlog

Presenter: Christina Dineen

Laboratory Update/Backlog March 2025

Christina Dineen

Outline

Backlog

Current status at each lab

Plans to address backlog

Use of contract labs

Summary

Other

IR-4 Project

Backlog Details - TIR

TIR							
PR	Chemical	Matrix	ASR Due Date	Initial EPA Target Sub.	Revised EPA Target Sub.	Note	Backlogged
13094	Difenoconazole + Azoxystrobin	Spinach	Mar-23	Oct-23	Apr-23	Sample analysis complete. Waiting only for SS (01/27). Difen only.	1
13353	Difenoconazole + Azoxystrobin	Mint	Oct-23	Apr-24	Apr-26	Only metabolite analysis still needed. Difen + triazoles only.	1
13218	Ethaboxam	Almond	Nov-23	Oct-24	Jun-25	Analysis complete. ASR prep ongoing.	1
11331	Difenoconazole + Azoxystrobin	Tomato	Mar-24	Apr-24	Apr-26	Only metabolite analysis still needed.	2
13219	Ethaboxam	Avocado	Mar-24	Oct-24	Jun-25	Analysis complete. ASR prep ongoing.	1
13256	Cymoxanil	Strawberry	Aug-24	Oct-25	Oct-25	Analysis ongoing. SS will go to 10/27.	1
13390	Fenpyroximate	Lychee	Sep-24	Oct-25	Oct-25		1
11473	Pyriofenone	Lettuce	Dec-24	Oct-25	Oct-25		1
13485	Bifenthrin	Onion	Jan-25	Oct-25	Apr-26	Method development.	1
						Total	**10**

Plans for Moving Forward - TIR

10 studies are backlogged:

- 1 is awaiting storage stability
- 2 are in ASR preparation (all samples analyzed)
- 2 require triazole analysis

- Concern about funding/personnel

IR-4 Project

Backlog Details - YAR

YAR							
PR	Chemical	Matrix	ASR Due Date	Initial EPA Target Sub.	Revised EPA Target Sub.	Note	Backlogged
12972	Fludioxonil + Pydiflumetofen	Peach	Oct-22	23-Oct	26-Apr	With QA	2
12817	S-Metolachlor/Metolachlor	Greens (Mustard)	Dec-22	22-Oct	25-Apr	With QA	1
12818	S-Metolachlor/Metolachlor	Turnip Greens	Dec-22	23-Oct	25-Apr	With QA	1
11997	Bicyclopyrone	Pineapple	Apr-23	23-Oct	26-Apr	Analysis complete.	1
13284	Ethaboxam	Lemon	Mar-24	24-Oct	26-Dec	Analysis started.	1
13110	Azoxystrobin	Spinach (GH Transplant)	Feb-25	23-Oct	26-Apr	Analysis complete.	1
13283	Ethaboxam	Grapefruit	Feb-25	24-Oct	26-Dec		1
						Total	**8**

IR-4 Project

Plans for Moving Forward - YAR

8 studies are backlogged

- Working through previously signed ASRs due to data quality concerns – ongoing efforts with Davis and HQ staff to assist.
- Potential to move some studies to CROs
- Concern about funding/personnel
- No 2025 studies were assigned to YAR, this will impact the rest of the program.

Backlog Details - CAR

CAR PR	Chemical	Matrix	ASR Due Date	Initial EPA Target Sub.	Revised EPA Target Sub.	Note	Backlogged
12634	Sulfosulfuron	Tomato	23-Sep	22-Oct	26-Apr	Waiting on SS (11/25). Transferred from another lab.*	*
13217	Fluopicolide	Almond	23-Oct	24-Oct	26-Jun	Awaiting SS (01/26).	1
13311	Spidoxamat	Hops	23-Oct	24-Apr	25-Apr	In QA	1
13007	Isofetamid	Hemp	24-Apr	23-Oct	25-Aug	ASR Preparation	1
13241	Fluopicolide	Avocado	24-May	24-Oct	26-Jun	ASR Preparation	1
13142	Fluroxypyr	Mint	24-Sep	25-Oct	25-Oct	Fresh mint complete. Dried mint in process.	1
13495	Quizalofop	Hops	24-Oct	25-Oct	25-Oct	In QA	1
13048	Abamectin	Hemp	24-Oct	24-Oct	25-Apr	Waiting on SS (10/25).	1
13158	Fenhexamid	Mint	24-Oct	24-Oct	25-Jun	In QA	1
11808	Cyflumetofen	Caneberry	24-Oct	25-Oct	25-Oct		1
13451	Clethodim	Olive	24-Dec	25-Oct	25-Oct	Waiting on SS (12/25).	1
13035	Cyclaniliprole	Hemp	24-Dec	25-Oct	25-Oct	Bud, fiber, seed validated. Bud analysis ongoing.	1
13450	Ethephon	Hazelnut	24-Dec	25-Oct	25-Oct	Validation complete. Awaiting new COA.	1
	*study is backlogged but transferred from MIR					**Total**	**12**

Plans for Moving Forward - CAR

12 studies are backlogged –

- 3 are awaiting storage stability
- 2 are in ASR preparation (all samples analyzed)
- 3 are with QA (ASR initial draft complete)
- 1 awaiting new COA

- CAR in the process of moving labs, lots of back and forth
- Hemp studies take much time, many crop fractions
- Will not be able to help other labs by taking on additional studies

IR-4 Project

Backlog Details - FLR

FLR							
PR	Chemical	Matrix	ASR Due Date	Initial EPA Target Sub.	Revised EPA Target Sub.	Note	Backlogged
12752	Fluazaindolizine	Mint	Nov-23	25-Oct	27-Aug	Waiting on SS (4/27).	1
11568	Thiophanate Methyl	Radish	Feb-24	24-Oct	TBD	Waiting on SS (5/25).	1
13169	Fluazaindolizine	Radish	Feb-24	24-Oct	27-Aug	Waiting on SS (4/27).	1
13360	Thiophanate Methyl	Carrot	Mar-24	24-Oct	TBD	Waiting on SS (5/25).	1
13498	Tiafenacil	Cucumber	Sep-24	25-Oct	25-Oct	Waiting on SS.	1
13500	Tiafenacil	Tomato	Oct-24	25-Oct	25-Oct	Waiting on SS.	1
07883	Pyridate	Corn (sweet)	Nov-24	25-Oct	26-Apr	ASR preparation.	1
13511	Inpyrfluxam	Tomato	Nov-24	25-Oct	25-Oct	Waiting on SS (2/25). ASR preparation.	1
13538	Isocycloseram	Sunflower	Dec-24	25-Oct	26-Apr		1
13078	Fludioxonil + Pydiflumetofen	Basil	Jan-25	25-Oct	26-Apr	Method validation	2
13304	2,4-D Choline	Strawberry	Jan-25	25-Oct	25-Oct	Method development; redo analysis based on method.	1
13504	Isocycloseram	Pomegranate	Jan-25	25-Oct	26-Apr		
						Total	**12**

Plans for Moving Forward - FLR

12 studies are backlogged –

- 7 are awaiting storage stability
- 2 is in ASR preparation (all samples analyzed)

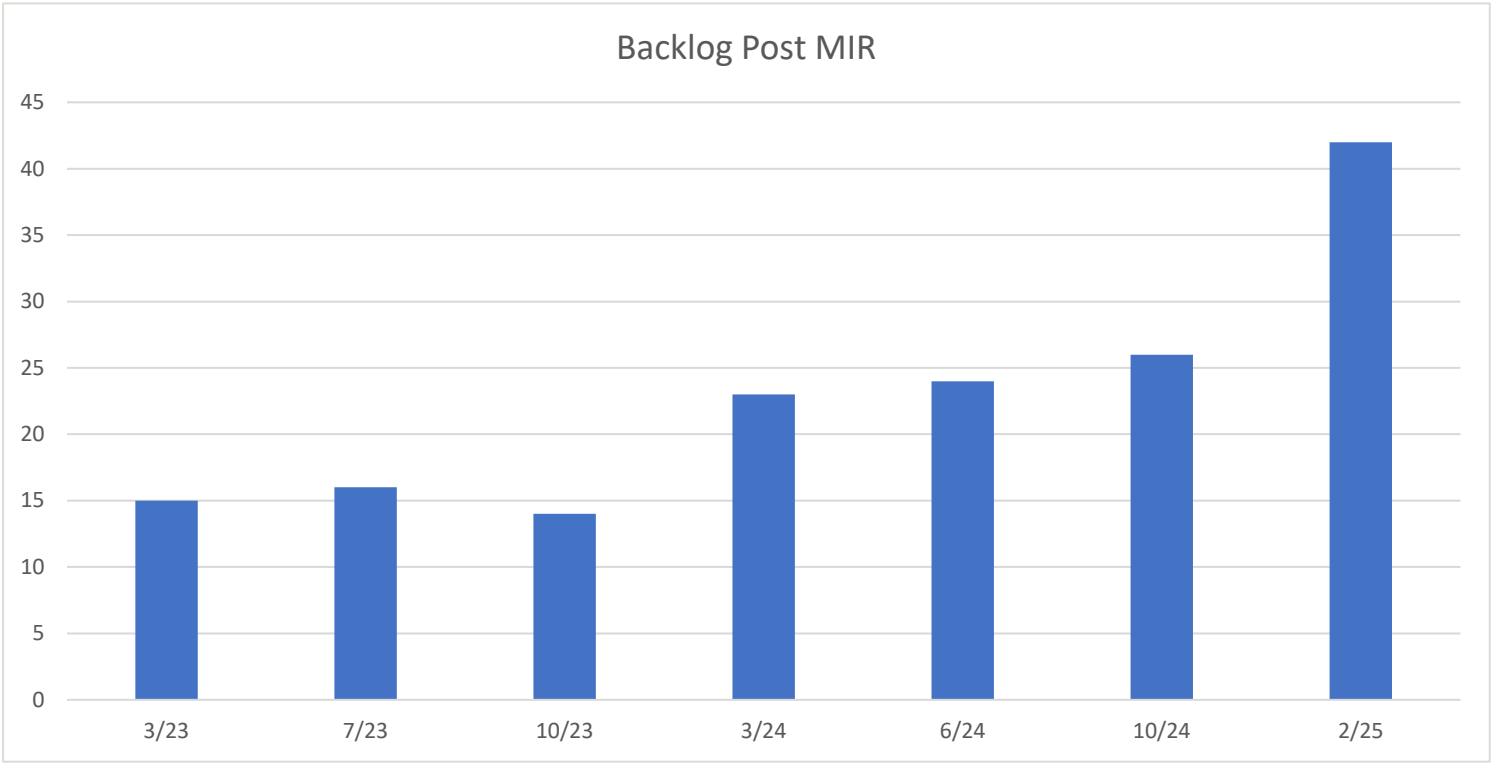
- Backlog should improve after storage stability completed

Studies at Outside Labs

CRO/Other

PR	Chemical	Matrix	Original Lab	ASR Due Date	Initial EPA Target Sub.	Revised EPA Target Sub.	Note
11824	Asulam	Clover (Seed Crop)	SYM/CAR (GPL)	Jun-21			Study being cancelled
12904	Flutolanil	Tomato	YAR (GPL)	Oct-21	22-Oct	TBD	Waiting on ASR but low priority since on hold.
12675	Emamectin Benzoate	Bean, lima (Succulent)	MIR (GPL)	Nov-21	22-Oct	26-Apr	Waiting on ASR.
11195	Flutolanil	Pepper (Bell & nonbell)	FLR (GPL)	Dec-21	22-Oct	TBD	Waiting on ASR but low priority since on hold.
12903	Flutolanil	Radish	YAR (GPL)	Feb-22	22-Oct	TBD	Waiting on ASR but low priority since on hold.
09520	Flutolanil	Beet (Garden)	MIR (GPL)	May-22	22-Oct	TBD	Waiting on ASR but low priority since on hold.
12757	Abamectin	Beet (Sugar)	MIR (GPL)	Jun-22	22-Oct	26-Apr	Waiting on SS (6/25).
12816	Linuron	Onion (Dry bulb)	GPL (Adpen)	Jun-22	22-Oct		Analysis ongoing.
12902	Flutolanil	Carrot	MIR (GPL)	Jun-22	22-Oct	TBD	Waiting on ASR but low priority since on hold.
11772	Linuron	Bean (edible podded & succulent shelled)	FLR (GPL)	Sep-22	22-Oct	TBD	Waiting on ASR but low priority since will be cancelled.
12564	Abamectin	Miracle Fruit	MIR (GPL)	Jul-23	Oct-22	Apr-26	Waiting for SS.
09102	Flutolanil	Strawberry	GPL	Oct-24	25-Oct	25-Oct	Waiting for ASR
11148	Glufosinate	Sesame	Adpen	Feb-25	24-Oct	25-Dec	ASR being reviewed by SD.
12714	Ethofumesate	Swiss Chard	GPL		26-Oct	26-Oct	Field trials ongoing.
13027	Metribuzin	Potato	Adpen		26-Oct	26-Oct	Field trials ongoing.
13092	Norflurazon	Clover (Seed Crop)	GPL		27-Oct	27-Oct	2025 Trials
13179	Benzovindiflupyr + Difenoconazole	Coffee	Adpen		25-Oct	26-Apr	Field trials ongoing.
13463	Glufosinate	Peanut	Adpen		25-Apr	25-Dec	Analysis ongoing.
13732	Linuron	Mint	Adpen		26-Oct	26-Oct	In queue for analysis.
13733	Linuron	Stevia	Adpen		26-Oct	26-Oct	In queue for analysis.
13734	Linuron	Onion (Green)	Adpen		26-Oct	26-Oct	In queue for analysis.
13741	Mefentrifluconazole	Broccoli	BASF		25-Sep	25-Sep	Transferring to Eurofins
13760	Afidopyropen	Lemon	BASF		25-Oct	25-Oct	Field trials ongoing.
13761	Afidopyropen	Grapefruit	BASF		25-Oct	25-Oct	Field trials ongoing.
13779	Mefentrifluconazole	Cabbage	BASF		25-Sep	25-Sep	Transferring to Eurofins

Backlog Graph Post MIR



Summary

Backlog (ASR not signed one year after last field sample arrived at the lab)

- **-Does not include studies sent to contract labs for completion**
- **-Total backlog = 42, much higher than October (26)**
- **-Many of these waiting on SS (11) or are in ASR prep/QA (12)**

Laboratory training is ongoing to bring analysts to same baseline level.

Resources still being used for MIR data (delays due to SS, assuring QA items have been adequately addressed) and for YAR reports (reviewing ASRs previously signed).

IR-4 Project

Thank You!

IR-4 Project

Program Update:
Quality Assurance

Presenter: Dr. Johanna Mazlo

IR-4 Project

QA Update

March 2025 PMC Meeting

Overview

- EPA Compliance Monitoring Update
- QA Update
- QA and Electronic notebook Update
- QA Audit\Inspection data
- eQA and eDocs Update

IR-4 Project

EPA Compliance Monitoring

- 4 of 11 the EPA inspections involved 2 inspectors
- IR-4 was part of the in-person training that led to credentials for:
  - Henry Armstead III
  - Christine Phebus
- Decommissioned sites
  - Del Monte – Sept 2024
  - S. Dakota State University Field Site
    - coming in 2025

2024/2025 EPA Inspections

Year of Inspection	Location
2024	University of California – Davis Lab University of California – Davis Field Dragon Run Ag (VA) Turner Ag Research (CA) NC State University - Field Pest Management Enterprises, Inc (LA) SD State University Field Michigan State University –Trevor Nichols Field University of Florida – Citra Field
2025	Oregon State University – Field Texas A&M, Weslaco, TX – Field (desktop audit)

IR-4 Project

QA Update

- QA functions as a National Team
  - Working across regions to complete tasks
  - Working to test new eQA version in the sandbox
  - Meet regularly
  - QA shared drive

- Laurel Hsieh
  - Continuing to onboard
  - Field notebooks, in-life inspections, Analytical raw data/summary report, facility inspections, etc.
  - Assisted in an EPA inspection

IR-4 Project

QA Update - Participation on Committees

Committee	QA participants	Comments
2025 Protocol	S. Muir	QA team reviewed/provided feedback on draft versions
National SOP	M. Beran	QA team reviewed/provided feedback on draft versions Provided verbiage on specific SOPs
IR-4 Advisory Committee	J. Mazlo	Reviewed Advisories to be moved to National SOPs

QA Update - Participation on Committees

Committee	QA participants	Comments
HQ SOP	J. Mazlo J. Thompson S. Muir	QA team reviewed/provided feedback on draft versions
Technology	J. Peterson	QA subcommittee working with TMS on an eQA update
Education Training Committee	S. Muir J. Mazlo	Provide ideas and topics for the national meeting

IR-4 Project

QA Update - Additional QA Efforts

- **Wapato Lab**
  Sherita Normington has taken the lead on reviewing 12 raw data/Analytical Summary Reports
  - **2 were submitted**
  - **5 had signed final reports**
  - **2 had final reports under review**
  - **1 partial review**
  - **2 had signed analytical reports**

QA Update - Additional QA Efforts

- ARS
  - Perform Wapato lab in-life inspections & analytical audits
  - Perform ARS field in-life & facility inspections
  - Perform GLP training
  - Assist Tifton lab with SOPs, GLP questions, audits, etc.

- IR-4 QA works closely with LRDs/FRDs
  - i.e. Tifton Lab, Uvalde Texas, NCSU field, etc.
  - Answer GLP questions about eFDBs, SOPs, etc.

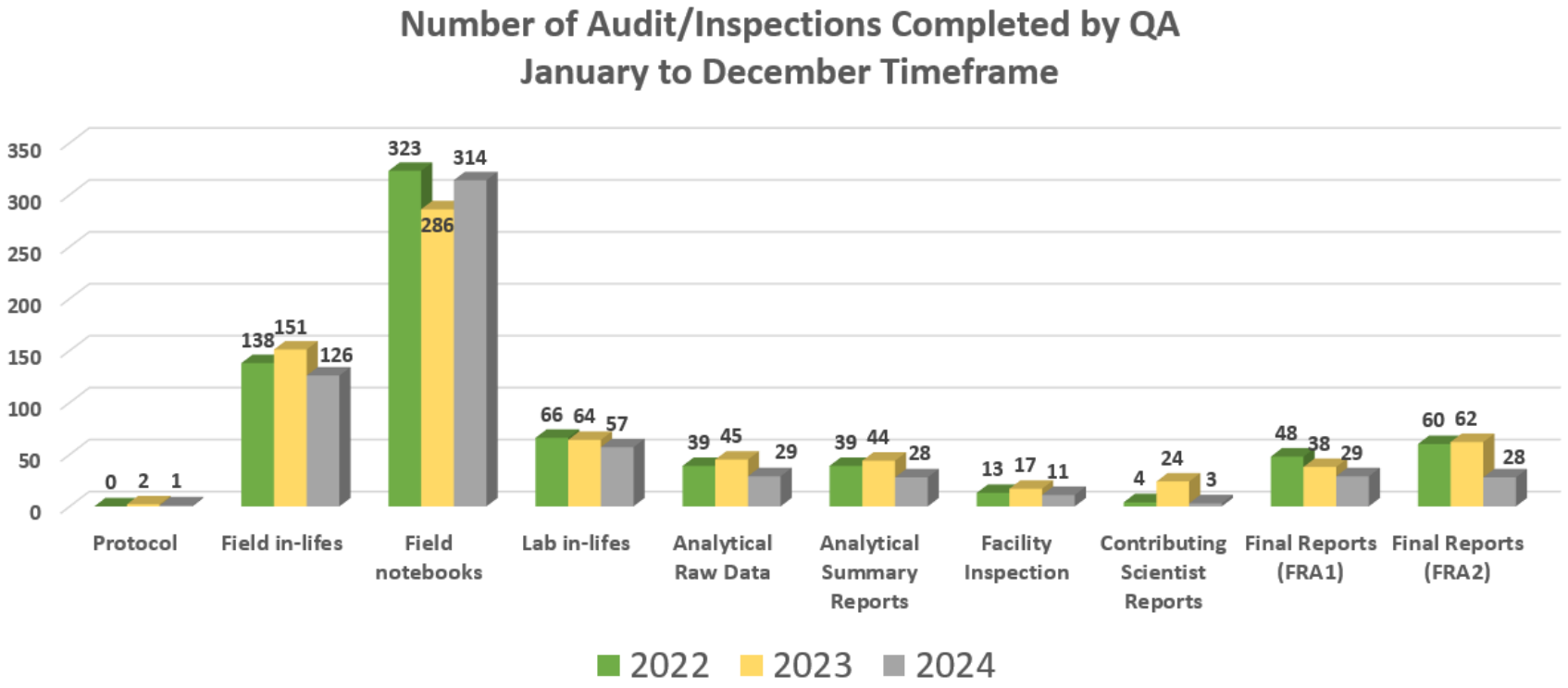
IR-4 Project

QA and Electronic Field Notebook

- QA has been actively engaging with the electronic notebook
  - Audited validation reports
  - Attending the face-to-face training
  - Regular meetings with QC and P. Moore\J. Byrtus
  - Working proactively to anticipate GLP issues
  - Assisting FRDs with questions
  - Reviewed National SOP

IR-4 Project

Comparison of Audit/Inpsection Data from 2022-2024



Field Notebooks Audited in 2024

Trial Year	2021	2022	2023	2024
Number of Notebooks Audited in 2024	2	32	249	31

eQA and eDoc Update

- eQA
  - Trained 4 people in 2024
  - 698 audits added in 2024
  - 17,093 total audits
- eDocs
  - 6712 total documents
  - Analytical methods 388
  - Working methods 58
  - Certificates of Analysis 189
  - National SOPs 2

IR-4 Project

IR-4 Project

Thank you

Program Reports:
Product Performance & IS Update

Presenter: Dr. Alice Axtell

IR-4 Project

2024 Report:
Product Performance & Integrated Solutions

A. Axtell

Product Performance (PP)

No. of final reports received

As of January 31, 2025:

- 51 final reports were received out of 148 product performance trials conducted for 74 priorities in 2024

Integrated Solutions

No. of final reports received

As of January 31, 2025:

- 12 priorities completed (includes studies started in 2023)
- 27 final reports were received out of 62 IS trials conducted for 35 priorities in 2024

Deliverables from recent IS studies (2)

- **IS00458 (corn earworm / sweet corn):** IS data were used to support the submission of one PCR for AgBitech's product Magnet under the Biopesticide Reg. Support Platform
- **IS00437 (flat mites / pomegranate):** 2 PCRs were submitted for pomegranate under R&PP
- **IS00445 (canker / dragon fruit):** Results encouraged ISK to change the status of P13639 (Dragonfruit/ Fluazinam) from "potential" to "Researchable".
- **IS00383 (weeds / sweet potato):** Results led to PCR submission for tolpyralate (13703), which was prioritized for 2025 residue study.
- **IS00370 (weeds / hemp):** Results led to PCR submission for pyroxasulfone under R&PP (P#13803).

Deliverables from recent IS studies (2)

- **IS00390 (weeds / bushberry):** Edible honeysuckle is now on the Matrix (rimsulfuron) master label, but not yet on the marketing label.
- **IS00402 (weeds / rice):** Results led to Corteva's commitment to generate 24c labels in CA for Clincher CA (cyhalofop) and Hulk (florpyrauxifen). Results also led to PCR submission for propanil (13881).
- **IS00420 (fruit thinning / stone fruits):** Results helped lead to adding apricot to the Accede label in Dec 2023. Results also are helping with upcoming pear label, due within the next two years, perValent.
- **IS00422 (weeds / hops):** Results led to removal of glufosinate from the DO NOT APPLY list sent annually from hops merchants to their growers. Beginning in 2024, glufosinate is on the annual 'DO NOT SPRAY AFTER SPECIFIED DATES' list.

Publications

S. T. Massie, B. J. Richardson, J. S. Patel, and D. H. Gent, 2025. **Evaluation of fungicides for hop powdery mildew,** Toppenish, Washington, 2024. *Plant Health Progress* (In Press).

G. Shresta, A. Merkle, S. Pandey, A. Axtell, 2025**. Evaluation of Biological and Synthetic Insecticides for Control of Lepidopteran Caterpillar Complex in CBD Hemp**, *Arthropod Management Tests (In Press)*

L.M. Sosnoskie, R.B. Batts, Thierry Besançon, 2024. **An Evaluation of Targeted Spraying for Reducing Herbicide Use, Enhancing Crop Safety, and Improving Weed Control in Highbush Blueberry**, *HortTechnology*, Volume xx, Pages https://doi.org/

A. Szczepaniec, A. Lathrop-Melting, T. Janecek, P. Nachappa, W. Cranshaw, G. Alnajjar, A. Axtell. 2024. **Suppression of hemp russet mite, *Aculops cannabicola* (Acari: Eriophyidae), in industrial hemp in greenhouse and field**, *Environmental Entomology*, Volume 53, Issue 1, Pages 18–25, https://doi.org/10.1093/ee/nvad052

Outreach

Making a presence at relevant regional & national events

- 2024 Southeast Regional Fruit and Vegetable Conference, Savannah, GA.
- Weed Science Society of America and Southern Weed Science Society joint meeting, San Antonio, TX
- Southwest Ag Summit, Yuma, AZ
- NCSU sweetpotato field day, Clinton, NC
- Annual Phytopathological Society meeting, Memphis, TN
- Association of Research Directors Fall Business Meeting, Raleigh, NC
- North Carolina Association of County Agricultural Agents Meeting, Wrightsville Beach, NC
- International Carrot Conference, Raleigh, NC
- Annual Entomological Society of America, Phoenix, AR

IR-4 Project

Thank you!

Biopesticide Regulatory Support

Presenter: Bill Barney

The IR-4 Project, Biopesticide Regulatory Support, Update

Pest management solutions for specialty crops and specialty uses

Biopesticide Regulatory, Submitted / Pending EPA Review

- 1071B, American chestnut, on hold at EPA; registrant updating changes with USDA and FDA [Chestnut blight]
- 1072B, Nudivirus, sterile moths, additional documentation submitted to EPA [*Helicoverpa zea*]
- 1081B, Cucumber green mottle mosaic virus vaccine, re-submitted application to remove references to human studies
- 1084B, Citrus tristeza virus, expressing spinach defensin proteins, re-submitted as requested in separate submissions for the three defensin variants CTV-SoD2, SoD2-1, CTV-SoD2* as separate active ingredients [Citrus greening]
- 1087B, Citrus CRISPR HLB resistant rootstock, submitted [Citrus greening]

IR-4 Project

Biopesticide Regulatory, Other Actions

- 1077B, Alum, Biochemical classification, after many follow-up submissions, classified as a biochemical-like active ingredient and eligible for review with a reduced data set in BPPD. The Committee recommended that non-target plant data requirements are fulfilled with guideline studies rather than waiver requests or rationales [Fireblight]
- Sucrose octanoate esters, submitted alternate product name label
- FourSure (*Aspergillus flavus* TC16F, TC35C, TC38B and TC46G), submitted final printed label
- *Aspergillus flavus* AF36 Prevail and Prime, rationale has been developed for expansion to all crops and all states

IR-4 Project

Biopesticide Regulatory, Submission packages in development:

- 1070B, Bacteriophages, pre-submission meetings held [Varroa mite of honeybees]
- 1075B, Pseudomonas soli, pre-submission meetings held [Fireblight, Citrus canker, Citrus greening]
- 1082B, Walnut rootstock [Crown gall]
- 1086B, *Pseudomonas fluorescens* M18, pre-submission meeting held [fungal and viral diseases]
- T-DNA transformation of citrus with AtNPR1 gene [citrus greening, U FL]
- *Verticillium nonalfalfae* [Tree of heaven]

IR-4 Project

Biopesticide Regulatory – New Vetting Process

- ***Streptomyces nourseii* var. *xichangensis*: received a score of 79/100 in the new vetting process [EPA Pre-submission meeting requested]**
- ***Pseudomonas fluorescens* strain 14og [insects, registrant still interested, but scaling production and conducting field testing]**

No response after notification of new vetting process:

- **Phytogenesis – novel technology from U of KY [fruits and vegetables]**
- **Plasma activated water [on-farm fungicide]**
- **Terra Vera – Varroa mite product**

IR-4 Project

Biopesticide Regulatory Recent Requests

- **Magnet [food grade plant volatiles to be used as attract and kill for *Helicoverpa zea* in sweet corn, need letter of support prior to vetting]**
- **Arino (*Burkholderia rinojensis* strain and spent media, ProFarm product) [Olive fruit fly, note already included on draft label in a registrant submission]**
- **Oxalic acid + glycerin [Varroa mite of honeybees, Zoom meeting held, request expected]**

IR-4 Project

Program Updates: Environmental Horticulture

Presenter: Dr. Jerry Baron and Jimmy Byrtus

IR-4 Project

Environmental Horticulture Update

March 2025

Where We Are Currently?

- **3 new projects assigned this year**
  - Nantucket Pine Tip Moth Efficacy
  - Cylindrocarpon in Conifers Efficacy
  - European Corn Borer prevention for imported plants to California Efficacy

- **Trials Assigned**
  - **NCR:** 98
  - **NER:** 88
  - **SOR:** 217
  - **WSR:** 163
  - **USDA:** 71

- **Recent Highlights**
  - Canadian data provided to manufacturer for potential label change for control of coneworms in conifer seed orchards.

IR-4 Project

IR-4 Communications Update

Presenter: Hannah Ross

Communications Update

Hannah Ross | Spring 2025

Print, Digital + Identity Updates

Updated resources continually available for the team reflecting our refreshed visual identity and new data as it becomes available.

2024 ANNUAL REPORT + YES

The 2024 Annual Report and Year-End Summary are now available online.

Find the digital Annual Report included in your PMC meeting handouts. We will have print YES documents available at the meeting. Scan to view the Annual Report web page.

Brand refresh continues

Updated event signage for 2025

RECENT STORIES

The "Swiss Watch" of Crops: How IR-4 Supports Mushroom Production

Learn how IR-4 supports mushroom growers in this story by Robin Siktberg.

People of IR-4: Luis E. Almodóvar

Learn more about Luis in the latest story by Raven E. Baez.

2024 IR-4 Holiday Message and Jerry Baron's Retirement Announcement

Celebrating 2024 achievements and announcing Dr. Baron's retirement.

2024 IR-4 SOAR Award Recipients (Part 1)

Join us in honoring Rich Bonanno and Julie Coughlin.

2024 IR-4 Special Recognition Awards

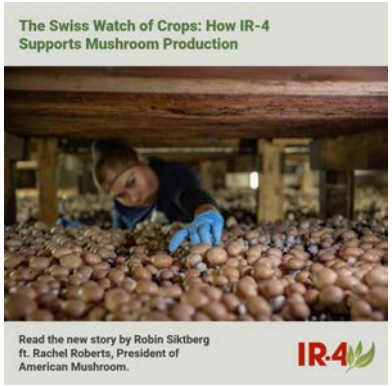
Join us in celebrating the legacies of two outstanding collaborators.

Supporting a "Special" Specialty Crop: How IR-4 Helps Cranberry Growers Succeed

Learn how IR-4 supports cranberry growers in this story by Robin Siktberg.

Read these stories at ir4project.org > About IR-4 > News

SOCIAL MEDIA



*Recently began using **Hootsuite** to better streamline posting to social accounts & accessing analytics.*

NEWSLETTER

- Increased open rate from 30-35% over past 90 days *(healthy rate = 20-40%)*
- Over 2,100 total contacts
- Newsletter is key comms channel for us. Best way to encourage new folks to connect and stay in the loop is to have them subscribe.
- To subscribe: visit ir4project.org; scroll to the bottom of the page; select “Sign Up for Announcements”

JOB PROMOTION

EVENT PROMOTION

Visit **ir4project.org** & select Events & Training to view 2025 event web pages.

Registration & more info coming soon for both events!

AWARD UPDATES

Recent & Upcoming IR-4 Awards

IR-4 AWARDS

2024 SOAR AWARDS

- 4 SOAR Award recipients selected for 2024
- Presented at FUW: JULIE COUGHLIN
- Presented at NRPM/PMC reception: RICH BONANNO
- Presented in January at regional meeting: MARK VANGESSEL
- Final to be presented at this meeting!

2024 HALL OF FAME INDUCTEE

- To be presented at this meeting!

MERITORIOUS & TECHNICAL SERVICE AWARDS

- To be presented at 2026 NEC
- We'll begin inviting regions to name their award recipients in 2025

2025 SOAR AWARDS

- We'll invite nominations beginning in June and present awards in the Fall

Introducing the IR-4 Intranet

A library of resources to support the IR-4 team in our daily work.

The creation of the intranet is a step towards an improved digital presence for IR-4 (internally and externally).

By migrating internal documents from ir4project.org to the intranet, we can reduce clutter and make materials easier to access. The intranet is geared towards employees, committee members and collaborators. This allows us to start moving towards a cleaner, simpler public-facing site.
This goal emerged from the Path Forward 2.0.

The intranet has been built with our whole team in mind.

IR-4 experts in field, lab and QA work have pitched in to help shape this site. It's designed to be easy to navigate and find the materials we need on a daily basis.

I'll be giving a tour shortly! A glance at where we're headed…

IR-4 Project INTRANET

General | Food Program | EH Program | Lab | QA | Training | VISIT IR4PROJECT.ORG →

Welcome, IR-4 team!

The intranet is a library of resources designed to support your daily work.

Search Resources

EVENTS AND DEADLINES

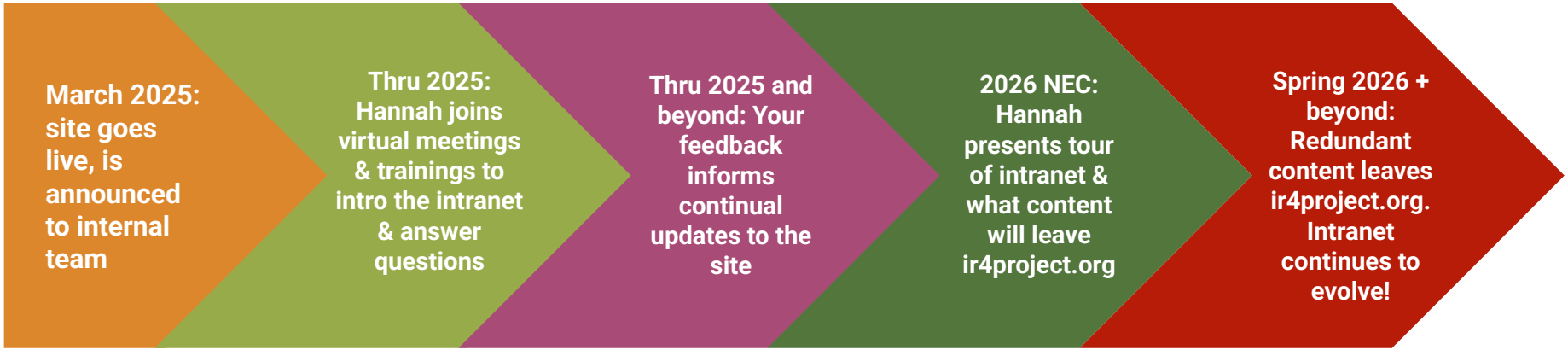
All Events

FEB 20 — Thursday | 11:30 AM — **2025 Industry Technology Session**

MAR 04 — Tuesday — **2025 Joint CLC/PMC Meeting**

JUL 01 — Tuesday — **Project Clearance Request Deadline**

2025-2026 Intranet Launch Timeline



As soon as the domain is ready and pushed live through NC state, we will announce the intranet and provide the link through our internal email list. I'll be providing intro's and announcements (live, recorded + via email) throughout this year to make sure everyone knows about the intranet, where to find it, and why it's here. I hope you'll help spread the word! I'll use the NEC as an opportunity to make sure everyone is on the same page about content transitioning off ir4project.org, and show updates made since the initial site launch.

IR-4 Project

Who counts as “internal?”

- HQ + Regional teams
- Field research collaborators
- Analytical lab teams
- QA personnel
- State Liaison Reps
- Commodity Liaison Committee
- Project Management Committee
- Other internal committees as needed

URL coming soon!

IR-4 Project

Intranet Content

LIVES ON INTRANET	DOESN'T LIVE ON INTRANET
-Internal documents -Documents needed by researchers and other personnel for daily work -Training materials -Anything proprietary/ in need of password protection -Resources that are irrelevant to the public -Branded outreach materials, logos, graphics, and templates for the team to use -Methods/documents for knowledge sharing across teams -Link to frequently accessed parts of databases like protocols and Directory (when updated)	-Content with an public / broad stakeholder audience -Archives of public-facing materials (like annual reports) -How to get involved / public events -Org contacts (will be maintained on main site but linked from intranet for easy access) -Documents that are actively collaborative (these belong on Google Drive/other shared platforms) -Documents that need to be continuously updated or require a lot of management (need to keep intranet maintainable) -Pages that need to live on ir4project.org but are also used by internal team members (these resources will be linked on intranet but will continue living at ir4project.org to avoid duplication/errors) -Databases/eQA will be linked but will not live on the intranet - they are their own independent platforms

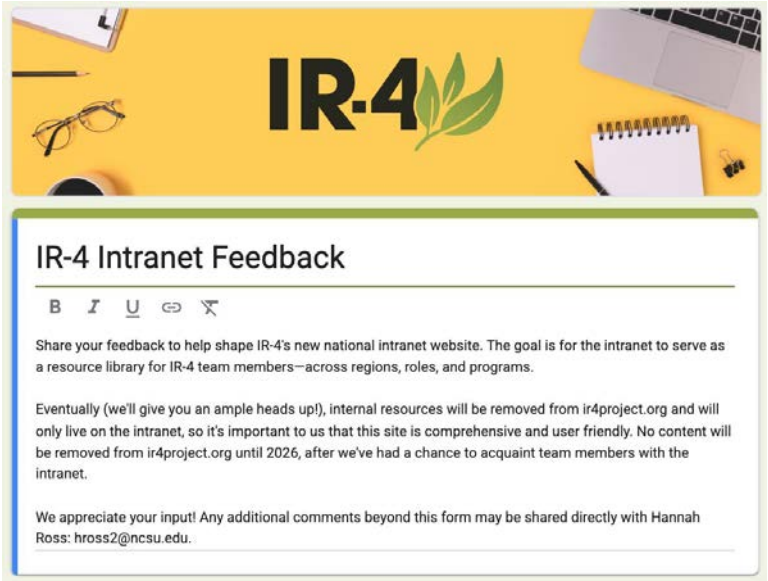
Let’s take a tour!

Then we’ll hop back over to these slides to answer more questions & see what’s next…

IR-4 Project

Intranet Feedback

This website will be continually shaped by team input!



Submit feedback via the form (linked on the homepage) or by emailing hross2@ncsu.edu

IR-4 Project

INTRANET ACCESS

How will teammates access the intranet?

The original idea was to have users be able to create logins and passwords (that they manage themselves), possibly syncing with their other accounts for ease of use, and have the entire site be password protected.NC State said…not so fast! There is currently no way to do this that works for both the NC State and Wordpress (website platform) systems.

The only way to password protect the entire site is for the Wordpress administrator (Hannah, in this case) to **manually** manage all usernames and passwords. In NC State's experience of working with other units, this is doable when you have up to around 20 users. However, our intranet is designed to be accessible to HQ, regional offices, and research collaborators across the country as well as committee members and state liaison reps (well over 20 users).

We were advised NOT to attempt to manage that many users manually, as it would be overwhelming in terms of time and has the tendency to be glitchy with upwards of 20 users. This left us with the following options:

1. Proceed with manually managing users anyway and hope for the best / plan for significant time spent
2. Set a single username and password for all invited users and share it annually. This holds a risk of getting glitchy when many users are logged in (hard to predict). It is also not the most secure way to handle logins, but it's technically doable.
3. Reconsider the need for the ENTIRE website to be password protected; simply password protect the pages that have sensitive information. The password can be shared and updated annually with all users. This means anyone can view our intranet, but most of the information has already been public facing - we are simply organizing it with our team in mind, and safeguarding what needs to be safeguarded.

Since only 3 pages currently need password protection, we chose option 3. The password will be changed and distributed annually. We will see how this goes on a trial basis in 2025, and pivot if needed. Any objections?

What about IR4project.org?

Internal content that has been moved to the intranet but is not needed by the public or external stakeholders will eventually be phased OFF of ir4project.org and will ONLY reside on the intranet.

For example: Food Crop Researcher Resources + regulatory documents + QA

I will work to ensure a smooth transition. Nothing is moving until 2026. At that time, I will shift focus to cleaning up and improving ir4project.org. This will serve the initial intranet goal set by the Path Forward 2.0 of improving our public-facing site, while serving internal teammates.

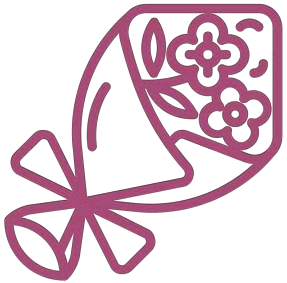
IR-4 Project

INTRANET COLLABORATORS

Special thanks to the collaborators who have helped shape the intranet over the past few months of work:

- NC State Web Publishing
- Jerry Baron (overall site architecture and national resources)
- Cristina Marconi (overall site architecture & Food Crop sections)
- Krystal Chojnacki (overall site architecture and project guidance)
- Nikelle Orellana-Reyes (contract graphic designer who helped build structure for main menus and homepage)
- Christina Dineen (Lab & Training sections)
- Philip Moore (eFDB sections)
- Johanna Mazlo, Juliet Thompson, Josh Peterson (QA section)
- Jimmy Byrtus (EH section)
- RFCs (got a sneak peek and provided early feedback while site was in staging mode)

Thank you!



Education & Training Committee

Presenter: Christina Dineen

Education & Training Committee Update

IR-4 PMC Meeting

March 2025

Christina Dineen

Planning for 2026 NEC

- **Committee Planning Items**
  - Pre-NEC Survey is out to solicit ideas/interest from all
  - Working with Operations team on deadlines
  - Looking into potential field tour options
  - Review 2023 post-NEC survey for recommendations
  - Start putting together rough agenda/outline

IR-4 Project

National SOPs

Committee Members:
Leona Horst
Martin Beran
Mika Tolson
Alex McFall

- **SOPs in Progress**
  - QA Inspections (N-01.3) – going into final review
  - TS Container Disposal (N-03.1) – going into final review
  - EPA Inspection Procedures (N-01.2) – in review

- **Upcoming SOPs**
  - App. Type Definitions (N-03.2) – from advisory team
  - Training & Documentation (N-01.4) – to be written

IR-4 Project

Advisories to National SOPs

Committee Members:
Mika Tolson
Nicole Soldan
Robert Welker
Johanna Mazlo

- **Next to Work on**
  - 2015-01 Storing & Maintaining Adjuvants
  - 2014-01 Maintaining Freezer Storage Systems

- **Advisory Retirement**
  - Finalize advisory retirement process
  - Retire the following & remove from website:

  2018-01, 2005-02, 2004-01, 2003-03, 2003-02
  2005-01 (when SOP finalized)

IR-4 Project

Virtual Trainings Offered

- **GLP Training (QA)**
  - March 11 from 2pm - 3:30pm
- **Field Training (RFCs)**

Completed	Upcoming
Fall Webinar (Nov 12) Hosted by Kristen • EPA Inspections, Writing Deviations • Lessons learned & resources for growing new crops	• April 29, 2025 – WSR • July 22, 2025 – NER/NCR • November 18, 2025 – SOR

- **Lab Training**

Completed	Upcoming
• 11/20/24 – Sample Processing • 01/29/25 – Reference substances & SS prep	• 03/25/25 – Std prep & Solution stability

Training Modules

Presenter: Robert Welker

New Employee Orientation Training

IR-4 PMC Meeting

October 2024

Rob Welker

Training

- **Outline of topics “complete”**
  - Continues to evolve – new items added as items arise in current study conduct
  - Examples of current modules include:

    Ir-4 process overview
    SD qualifications and responsibilities
    GLP overview and requirements for personnel and facilities
    Study conduct:
    protocol interpretation, TS receipt and storage, record keeping, application types, harvesting, shipping,
    adequately documenting all aspects of a study, etc.

IR-4 Project

Training

- **Building the presentation continues**
  - Reported at the last meeting that the plan was to have a rough draft together for review by Mid-Feb. 2025. This is slightly delayed, but progress toward a rough draft is being made. Currently the training is nearing 100 total slides. A rough draft is targeted for mid-March after 2025 protocol reviews are complete.

- **Next steps:**

  Push out the draft for internal review with QA, Study Directors and Management

  Allow comments from the training committee after their review

- **Final product**
  - Broken into modules for easy use
  - Flexibility to use as in-person training or as pre-recorded online versions
  - Exploring options for putting on the new IR-4 intranet and possibility for training certificates when online modules are completed.

IR-4 Project

Technology Team

Presenter: Jimmy Byrtus

Technology Team Update

March 2025

Initial Company Discussions

- We have been in discussions with 3 companies and have been given demonstrations of their technology
- Agmatix
- Caspio
- Knack

- Kintone was eliminated as this software is more geared towards internal facing customers and not the public.
- Five was eliminated as it is based in Australia and communications and maintenance would be difficult at the very least

Agmatix

- **Data Integration-** Willing to work hand in hand with IR-4 to standardize data across current platforms and import into any new DB along with continued maintenance.
- **Security:** Can easily assign hierarchy of data access to individuals.
- **Project Management:** Not currently available but has had other requests for this functionality and is being designed. (Slack boards as an example)
- **Automation:** Readily available with proper code for crosstalk from other platforms.
- **QA Concerns:** They have started working in these environments, specifically with Ag companies.
- **eFDB and Artificial Intelligence:** Have the ability to capture data electronically and use AI in decision making.

IR-4 Project

Caspio

- **QA Concerns:** They are working in these environments, specifically with HIPPA and FERPA compliance. The leap to GLP if necessary should not be considered an obstacle.
- **Development:** Willing to work hand in hand with IR-4 to standardize data across current platforms and import into any new DB along with continued maintenance.
- **Automation:** Can easily automate processes and functions including emails, notifications and the like.
- **Visualization:** Can present data for dashboards, similar to what we have now, workflows for project management.
- **Security:** Can easily provide login credentials for hierarchy of data availability.

IR-4 Project

Knack

- **Data Integration-** Does not provide ability to build or maintain, this would all have to be done within IR-4, rather uses AI to build functionality
- **Security:** Can easily assign hierarchy of data access to individuals.
- **Project Management:** Can easily build project portals that can help with managing projects.
- **Automation:** Can generate automated emails, notifications and the like, also can integrate data from outside sources
- **Visualization:** Can present data for dashboards, similar to what we have now, workflows for project management.

Committee Update:
Network Expansion Taskforce

Presenter: Dr. Jaimin Patel

NET (Network Expansion Taskforce) Updates from Jaimin:

- NET Goals:
    1. Facilitate a greater awareness of IR-4 with specialty crop farmers/specialty crop community
    2. Expand IR-4's network of researchers
- 15 researchers joined for the first time to conduct IR4 efficacy/crop safety trials in 2024 & 2025 due to NET efforts
- An article was published in *American Entomologist*, highlighting the background of IR-4 and its initiatives to foster collaboration with minority-serving institutions. https://academic.oup.com/ae/article/70/4/9/7934265
- Three biologists attended and presented talks/posters at a couple of meetings and met with stakeholders.

iAdvantage electronic Field Data Notebook Update

Presenter: Philip Moore

IR-4 Project

eFDB Update

March 2025 PMC Meeting

eFDB version 2.0 changes for 2025 trials

- Protocol limits use of paper data to only specific instances
- eFDB Paper Notebook forms revised (backup) & restricted use of old style forms (removed from website)
- Revised electronic forms & added new forms, including for GH drench, field drench & irrigation injection applications
- Provided easier way to attribute document uploads & fulfilled requests for changes received from users
- Provided eFacility Files system for IR-4 / ARS FRDs
- Revised National eFDB SOP N02.1 and eFDB Guidance Doc
- HQ eFDB SOPs are currently being revised, including for fulfilling GLP electronic archive requirements

IR-4 Project

Overview: Current Status and Future Plans

- **Progress Since October 2024 PMC meeting:**
  - **New forms and form changes were validated** at HQ just prior to EOY, allowing all 2025 red-A and new protocols' eFDBsto be created
  - **David Schnatter** is now being training as an Admin & creating all eFDBs
  - All 2024 eFDBssubmitted prior to December were QC'edby Philip (~75). **Regional office and contract QC have been trained** and are now taking over.
  - Six weekly 1.5 hour**FRD training Zoom meetings are held**/ recorded though March
  - Demonstrated the **Data Cipher and Publisher** functions to HQ (& others): allow various forms of reports (including Final MOR Reports) to be generated with just a few clicks.
- **Future issues to be addressed:**
  - Finalizing **HQ SOP updates**pertaining to electronic archives and eFDB administration
  - Still **managing licenses** at 100 users to keep within current contract cost
  - Brainstorming about how eFDB data can be used for trial monitoring and data mining
  - **What to do about QC (quality control) in the future (re: 2025 eFDBs)?**

What to do about QC in the future (2025)?

- **IR-4 (via regional sub-awards) pays for all trial notebooks to be reviewed by a QC** at the regional level, prior to QA review of data.
- **Considered to be a service to the FRD,** this process helps improve data quality prior to the more critical and harder to resolve QA inspection done via eQA
- **Considered by RFCs to be necessary** to understand quality of work being performed at test sites and to train or advise FRDs on correct methods.
- **Considered by QA to be helpful** in reducing audit findings.
- **Considered by TFM to be an unnecessary cost** and duplicative effort, when the QA audit is required and already doing what QC does.
- **We (at HQ) assumed QC could be cut** to save on the license cost for the system

What to do about QC in the future (2025)?

- **What do FRDs think?** I don't really know and we haven't really asked.
- My sense is that FRDs will go along with any eFDB change without complaining as long as it makes sense (easy to understand) and data requirements are not made harder to fulfill.
- What is my opinion? "peer review" of data does catch easy omissions (two sets of eyes) and those **errors are easier to fix at QC than later on**. But QC is not needed to "catch application mistakes early" as was the original reason for requiring a QC step.
- The entire goal of the eFDB is to reshape how field trial data is provided: **improving efficiency, improving study timelines, improving data quality** (reducing errors).
- **Does eliminating QC serve those goals?**
- **What is the cost?** About 2-3 hours required to perform a QC or about $150 each I estimate. 350ish notebooks per year = **At least $50,000 annually**

What to do about QC in the future (2025)?

- Currently: all **FRDs notify** their SD/ RFC/ and eFDB Admin that the eFDB is finished and ready for a QC review.
- The **QC reviewer checks** every form and document upload for protocol and eFDB SOP compliance and provides a list of corrections needed.
- The **FRD makes the changes** and responds to each finding. After QC confirmation of the changes, the **FRD ships the trial data** to HQ for the QA audit.
- During QA FDB audit: review all data, including the audit trial (changes & timestamps) and paper raw data (**which QC does not check**). Provides findings via **eQA**, where FRD / SD respond and provide corrections made. Then **TFM reviews** and signs off.
- Then, when the SD provides the MOR Final Report to QA for the two report audits required, **the eFDBs are again reviewed by QA** – for any changes made and accuracy with Final Report.

FRD completes eFDB-> QC reviews-> QA Data audit-> SD finalizes-> QA Report audit (2X)

Maintain existing (100%) QC or modify?

1. Current System: **100%** of FDBs are QC reviewed prior to QA audits

2. Option: Only **first notebook** from a given FRD in a calendar year is QC reviewed at the regional office, or as needed for training

3. Option: **Random QC inspection** of certain Sites/ FDBs in some systematic way, could coincide with a RFC inspection of field site records and facilities

4. Option: **Other ways** to ensure RFCssee gaps in understanding and for FRDs to avoid similar mistakes in later notebooks ?

My Takeaway from doing eFDB QCs: It's a "nice to have" not a "must have", unlike when this requirement was first established. **It is not an efficient use of funds:**

- After first or second eFDB QC, the FRD recognizes their commonly made errors.
- In later QCs, they simply make fewer of those common mistakes (20 to 5 findings).
- Application errors from calculations can still occur, if FRDs err in entering data
- Errors may not be caught until QA audit, if no QC occurs, but this is much less likely, than with paper and hand calculations.

Upcoming Meetings

Presenters: Dr. Alice Axtell and Dr. Krystal Chojnacki

2025 Key Dates and Deadlines				
IR-4 Program	**Event / Task**	**Location**	**Date/ Deadline**	**Assignee**
FU / EH	Industry Technology Session	Virtual	Thursday Feb 20, 2025	Biology Team, Operations Team, Management
FU / EH	RFC / HQ Conference Call (from 2:00 TO 4:00 PM ET)	Virtual	Thursday Feb 27, 2025	RFCs, HQ staff
FU / EH	PMC / CLC Meeting - START	Washington, DC	Tuesday Mar 4, 2025	Management, Operations Team, PMC & CLC
FU / EH	PMC / CLC Meeting - END	Washington, DC	Thursday Mar 6, 2025	Management, Operations Team, PMC & CLC
FU / EH	Town Hall Meeting	Virtual	Wednesday Mar 19, 2025	Management
FU	Company Meetings - START [Adama, AgroSource, Albaugh, Amvac, BASF, Bayer, Belchim, Corteva, FMC, Gowan, ISK, Ki-Chem, Landis, Nichino, Nisso, Nufarm, Syngenta, TKI, UPL, Valent]	Various Locations / Virtual	Monday Apr 28, 2025	Management, Biology Team, Admin & Reg. Teams (join virtually)
FU	SOR Regional Mtg. - DISCIPLINE TBD	Virtual	Tuesday Jun 10, 2025	Biol Lead, Management
FU	SOR Regional Mtg. - DISCIPLINE TBD	Virtual	Wednesday Jun 11, 2025	Biol Lead, Management
FU	EPA Crop Tour	NER	Wednesday Jun 11, 2025	Reg Team, Operations Team, Executive Director
FU	SOR Regional Mtg. - DISCIPLINE TBD	Virtual	Thursday Jun 12, 2025	Biol Lead, Management

2025 Key Dates and Deadlines				
IR-4 Program	**Event / Task**	**Location**	**Date/ Deadline**	**Assignee**
FU	NER Regional Mtg. - WS	Virtual	Monday Jun 23, 2025	Biol Lead, Management
FU	NER Regional Mtg. - ENT & PP	Virtual	Tuesday Jun 24, 2025	Biol Team, Management
FU / EH	RFC / HQ Conference Call (from 2:00 TO 4:00 PM ET)	Virtual	Thursday Jun 26, 2025	RFCs, HQ staff
FU	NCR Regional Mtg. - All Disciplines	Virtual	Friday Jun 27, 2025	Biol Team, Management
FU	DEADLINE: Submit a New PCR	N/A	Tuesday Jul 1, 2025	Stakeholders
FU	Stop Light Analysis Report to Management for review	N/A	Wednesday Jul 2, 2025	Admin. Team
FU	Stop Light Analysis Report is sent to EPA	N/A	Monday Jul 7, 2025	Admin Team, Reg. Manager
FU / EH	PMC Meeting - START	Virtual	Tuesday Jul 8, 2025	Management, Operations Team, PMC & CLC
FU / EH	PMC Meeting - END	Virtual	Thursday Jul 10, 2025	Management, Operations Team, PMC & CLC
FU / EH	Town Hall Meeting	Virtual	Wednesday Jul 16, 2025	Management
FU	Company Meetings - END [Adama, AgroSource, Albaugh, Amvac, BASF, Bayer, Belchim, Corteva, FMC, Gowan, ISK, Ki-Chem, Landis, Nichino, Nisso, Nufarm, Syngenta, TKI, UPL, Valent]	Various Locations / Virtual	Friday Jul 25, 2025	Management, Biology Team, Admin & Reg. Teams (join virtually)

2025 Key Dates and Deadlines				
IR-4 Program	**Event / Task**	**Location**	**Date/ Deadline**	**Assignee**
EH	Workshop preliminary agenda available for review	N/A	Friday Aug 1, 2025	EH Manager, Executive Director, Operations Team
FU	DEADLINE (TENTATIVE): EPA Stoplight analysis is due	N/A	Friday Aug 8, 2025 TENTATIVE	EPA
FU	Project requests are eligible for online nomination - START	N/A	Friday Aug 15, 2025	Admin. Team, IT Manager, RFCs, Stakeholders
FU	Project requests are eligible for online nomination - END	N/A	Monday Aug 25, 2025	Admin. Team, IT Manager, RFCs, Stakeholders
EH	DEADLINE: Project requests and grower needs survey	N/A	Friday Aug 29, 2025	EH Manager
FU	Food Use nomination results are made available to RFCs and HQ staff for review	N/A	Tuesday Sep 2, 2025	Admin. Team
FU	The list of nominated project requests is posted on the public website	N/A	Friday Sep 5, 2025 By 12:00 pm ET	Admin. Team, Operations Team
FU	FUW - START	Denver, CO / Virtual	Tuesday Sep 9, 2025	Management, Operations Team, Admin Team, RFCs, Reg. Team (joins virtually)
FU	FUW - END	Denver, CO / Virtual	Thursday Sep 11, 2025	Management, Operations Team, Admin Team, RFCs, Reg. Team (joins virtually)

2025 Key Dates and Deadlines				
IR-4 Program	**Event / Task**	**Location**	**Date/ Deadline**	**Assignee**
FU	Submission of PUPs and Regional Upgrades (RUs) - START	N/A	Friday Sep 12, 2025	RFCs (RUs), Stakeholders (PUPs)
FU	List of final results/priorities is uploaded to the website and the database. A copy will be sent out to RFCs and HQ staff via email.	N/A	Monday Sep 15, 2025	Admin. Team, Operations Team
FU	POST FUW Meeting (RESIDUE ONLY): Discuss regional trial needs (# of trials, locations, declines and processing, etc.)	Virtual	Tuesday Sep 16, 2025	Associate Director, Registration Manager, Submission Manager
FU	Tentative Residue Project list is made available online and RFCs can begin entering residue field trial sites into the database.	N/A	Thursday Sep 18, 2025	Admin. Team, RFCs
EH	The final agenda for Workshop, Project Information Sheets, Product AI's Posted	N/A	Friday Sep 19, 2025	EH Manager, Admin. Team
FU	Submission of PUPs and Regional Upgrades (RUs) - END	N/A	Friday Sep 26, 2025	RFCs (RUs), Stakeholders (PUPs)
EH	Final Presentations for EH Workshop Due	N/A	Friday Sep 26, 2025	EH Manager, Admin Team
FU	RED "A" trial list due	N/A	Tuesday Sep 30, 2025	RFCs
FU	1ST Pre-NRPM Conf. Call (RESIDUE ONLY): Confirm / review 2025 carryover "RED A" trials, PUPs & RUs, joint projects w/ PMC Canada. [Typically from 11:00 am to 2:30 pm ET]	Virtual	Thursday Oct 2, 2025	Management, Reg. Team, Admin. Team, ARS, PMC Canada, Biology Team (optional)

2025 Key Dates and Deadlines				
IR-4 Program	**Event / Task**	**Location**	**Date/ Deadline**	**Assignee**
FU	Revised list of priorities resulting from the 1st Pre-NRPM conf. call is uploaded on the data management system for entry of field trial assignments.	N/A	Friday Oct 3, 2025	Admin. Team
EH	EH Workshop - START	Kansas city, MO	Tuesday Oct 7, 2025	RFCs, EH Program Manager, TBD
EH	EH Workshop - END	Kansas city, MO	Wednesday Oct 8, 2025	RFCs, EH Program Manager, TBD
FU / EH	RFC / HQ Meeting followed by PMC Meeting - START	Kansas city, MO / Virtual	Wednesday Oct 8, 2025	RFCs, Management, EH Program Manager, Operations Team
FU / EH	PMC Meeting - END	Kansas city, MO / Virtual	Friday Oct 10, 2025	Management, EH Program Manager, Operations Team
FU	DEADLINE: Entry of all 2025 residue field trial assignments in the database is due. Residue field trial assignments to be at least identified to State /Province, and actual researcher if possible.	N/A	Tuesday Oct 14, 2025	RFCs
FU / EH	Town Hall	Virtual	Wednesday Oct 15, 2025	Management
FU	2nd Pre-NRPM Conf. Call (PERFORMANCE & IS ONLY): Confirm / review 2026 Performance and IS Priorities and discuss possible trial allocations. [Typically from 11:30 to 3:00 pm ET]	Virtual	Thursday Oct 16, 2025	Biol. Team, Management, Admin. Team, RFCs, PMC Canada

2025 Key Dates and Deadlines				
IR-4 Program	**Event / Task**	**Location**	**Date/ Deadline**	**Assignee**
FU	The list of tentative residue field trial assignments is posted on the database for NRPM participants only.	N/A	Friday Oct 17, 2025	Admin. Team
FU	Final tentative residue schedule is made available to NRPM attendees	N/A	Thursday Oct 23, 2025	Admin. Team, Operations Team
FU	NRPM Meeting - START	Raleigh, NC	Monday Oct 27, 2025	NRPM Attendees
FU	NRPM Meeting - END	Raleigh, NC	Wednesday Oct 29, 2025	NRPM Attendees
FU	The final tentative residue schedule is posted on the web.	N/A	Tuesday Nov 4, 2025	Admin. Team, Operations Team
FU	1st Post-NRPM Conf. Call (Performance & IS ONLY): Finalize details of Performance & IS research. [Typically from 11:30 to 3:00 pm ET]	Virtual	Thursday Nov 13, 2025	Biol. Team, Management, Admin. Team, RFCs, PMC Canada
FU	2nd Post-NRPM Conf. Call (Performance & IS ONLY): Finalize details of Performance & IS research. [Typically from 11:30 to 3:00 pm ET]	Virtual	Monday Dec 8, 2025	Biol. Team, Management, Admin. Team, RFCs, PMC Canada
FU	DEADLINE: Test substance orders list via Smartsheet must be completed	N/A	Monday Dec 15, 2025	Reg. Team, Biol Team

FU = Food Use Research Program
EH = Environmental Horticulture Research Program