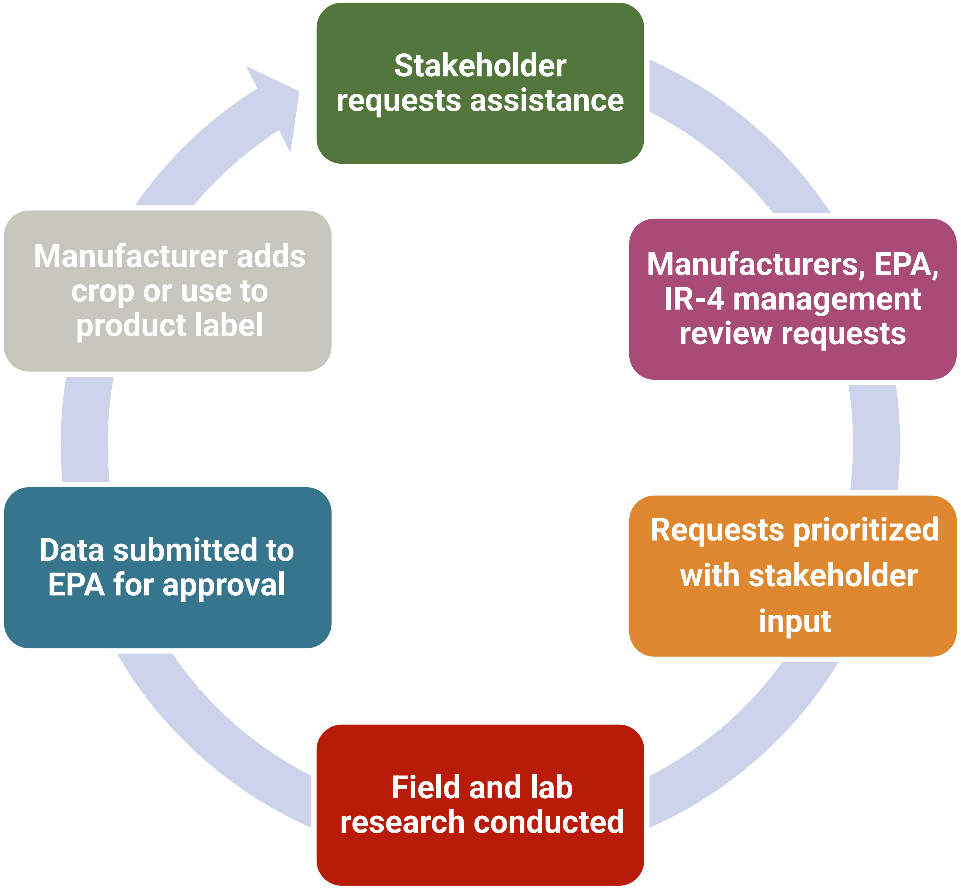
IR-4 Project | NATIONAL EDUCATION CONFERENCE February 3-5, 2026

Life of a Project - Part 1

Kari Arnold, Jimmy Byrtus, Will Meeks & Alex McFall

FOOD CROP RESEARCH CYCLE



A priority becomes a project.

RFC Perspective

Kari Arnold

Every priority clearance request…

….begins with an opportunity

How do we develop opportunities?

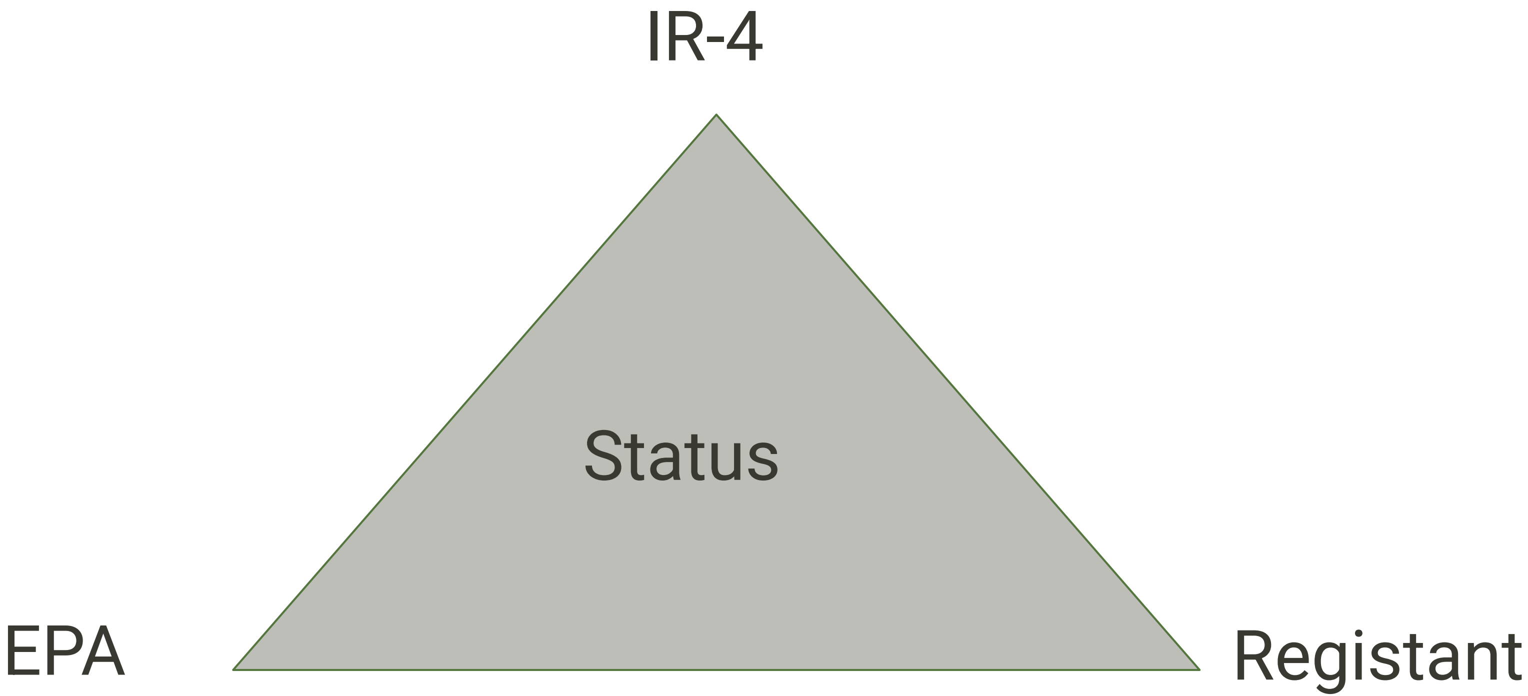
How do we turn them into success stories?

Extension & Networking

Extension/Networks/Training

- State Liaison Rep/Commodity Liaison Committee Meetings
- Priority Setting Calls
- Extension Meetings
- Conferences
- Farm Calls
- Phone/Zoom/Teams Calls
- Emails
- Word of mouth
- Social Media

Priority Clearance Request (PCR)



Food Use Workshop Prep

1. Nominations list development
    a. Intra-commodity priorities
    b. Inter-commodity priorities
2. Nominations period, mid August
3. Food Use Workshop
    a. Determine final status for priorities
    b. Determine IR-4 priorities for following year
        i. National
        ii. Regional

National Research Planning Meeting Preparation

1. Headquarters determines:
   a. EPA/NAFTA required residue sites for selected priorities
   b. Red A trials from previous year
   c. Performance trials
2. Regional Field Office determines:
   a. Field research capacity for residue and performance trials

National Research Planning Meeting

1. Residue Program
   a. Final decisions regarding placement of residue trials
   b. FRDs assigned, early protocols discussed
   c. Early protocol development begins soon after
2. Performance Program
   a. Begins developing research plan
   b. 2 to 3 months to finalize, early protocols prioritized

A priority becomes a project.

Protocol development.

SD Perspective

Jimmy Byrtus

GLP Protocol Preparation

1. Between Food Use Workshop and National Research Planning Meeting
    a. How many and where trials are located?
    b. Identify any needs for processing/decline trials

2. Request Review
    a. What is the use pattern being requested?
    b. Does the registrant have a suggestion for use pattern?

GLP Protocol Preparation

1. What is already on the label?
    a. Anything similar in terms of phenotype?
    b. Are certain adjuvants required?

2. Based on the requested use pattern and registrant information how much test substance do we need per trial, decline trials, processing trials?

GLP Protocol Preparation

1. Do we have any data from the crop group, other studies?

2. What laboratory data do we have?
   a. Is storage stability data needed?
   b. What lab will do the work?

GLP Protocol Preparation

1. Once the first draft of the protocol is complete what's next?
   a. The draft is posted to the public website
      - https://ir4app.cals.ncsu.edu/Ir4FoodPub/draftProtocolSch
   b. An email is then sent to the registrant, RFC's, lab managers, and HQ management
   c. There is generally a two week period to review the protocol

GLP Protocol Preparation

What are we looking to have you review?

a. Test Substance amounts for your trial?
b. Does the application methods seem reasonable?
c. Is more clarity needed for any aspect of the trial?
d. Is the PHI reasonable for the crop?

Based on the comments received during the two week review period any changes, if significant, could be reposted for a second review.

GLP Protocol Preparation

The final steps for the protocol are:

a. The protocol is sent to admins for final formatting and adding FRD information, and if known lab identification
b. One last review is then done and the protocol is signed.
c. eFDB’s are built and test substance orders are sent out to the registrants.

A priority becomes a project.

A protocol is developed.

Conducting a field trial.

FRD Perspective

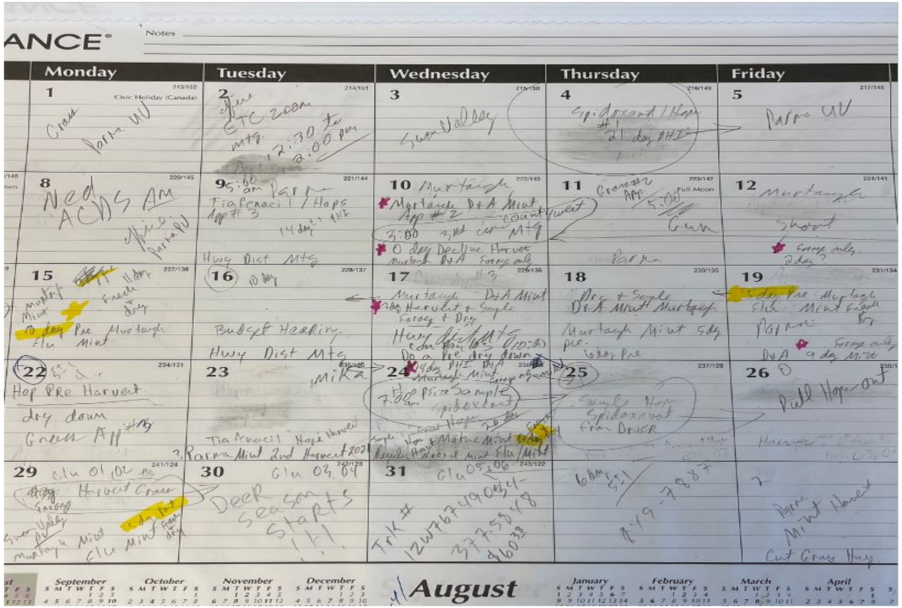
Will Meeks

Rough draft shows up…what now?

- ❖ Can we grow it successfully?
- ❖ Can we apply it as stated in protocol?
- ❖ Can we harvest it as stated in protocol?
- ❖ Let SD and RFC know if you have any problems.
- ❖ Start crop request or grower conversations so they can start planning on growing crop for you.

Final copy of Protocol arrives

- Check to see what has been changed since rough draft arrived.
- If changes have been made, notify grower etc., about changes.
- Change dates on calendar if necessary etc.
- Sign into eFDB.



Application

- Prior to application, make sure PHI and intervals are correct.
- Follow protocol first, then SOP's then your gut.
- Contact SD if you have any questions.
- Fill out eFDB and don't forget to save when done.
- Tolerate QA if you have to.

Harvest

- ❖ Check PHI again.
- ❖ Read protocol section on harvest again.
  - ➢ Is RAC quartered, pitted, shelled, forage, stover , hay etc.
- ❖ Will you need Ziplock bags in field to go inside of IR-4 bags?
- ❖ Describe harvest in eFDB in a way that someone reading it could duplicate your process if necessary.

Shipping

- Check protocol and amendments for any changes on Lab etc.
- Notify Labs of approximate shipment date and how shipped prior to shipping.
- Be sure to send paperwork in boxes.
- Notify lab, SD and RFC after shipping.
- Place bill of lading and shipping receipt from lab in notebook file.

Finalize eFDB

- ❖ Upload all information into eFDB and label correctly.
- ❖ Scan all wet data and upload to eFDB.
- ❖ Notify RFC that notebook is complete.
- ❖ Hold original wet paper to be sent to HQ until after RFC is ready for you to send it.
- ❖ Deal with all QC/QA findings as they come in during your busiest portion of the year.

A priority becomes a project.

A protocol is developed.

Field trials are conducted.

Samples are analyzed.

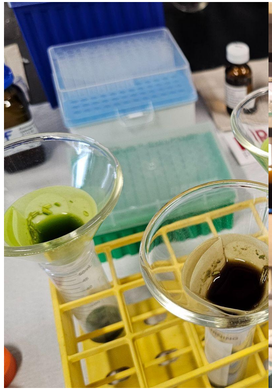
Lab Perspective

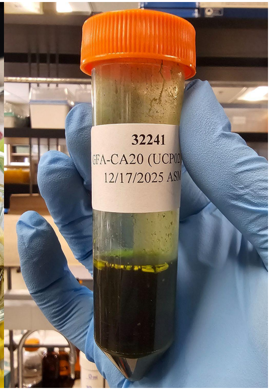
Alex McFall

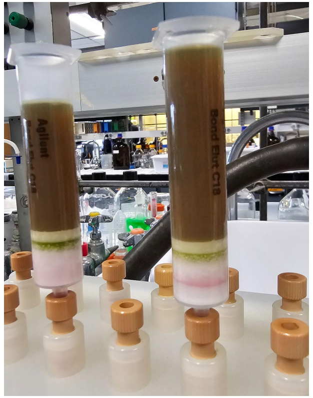
Sample Arrival, Documentation, and Processing

Must Maintain
Sample Integrity

Sample Extraction, Cleanup, and Analysis







Analytical Considerations

Harvested and Processed Fractions

- Fresh/Dried
- Oils/Distillates

Are there references?

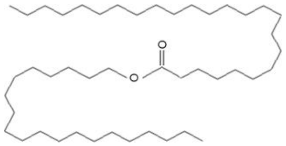
- Are they relevant to our crop fractions?
- Are they modern/work on our instruments?

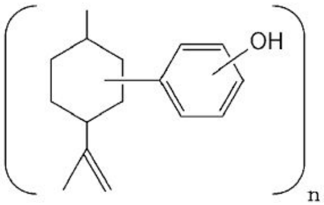
How low can we go?

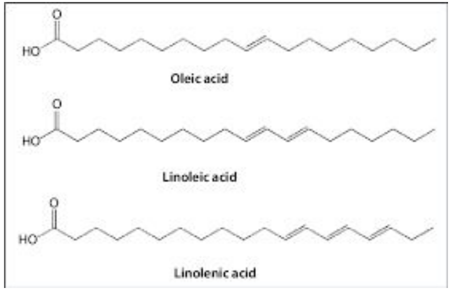
- Lower regulatory LOQ's
  (10 ppb or less)
- Are there multiple metabolites?
  Do we have enough sensitivity?

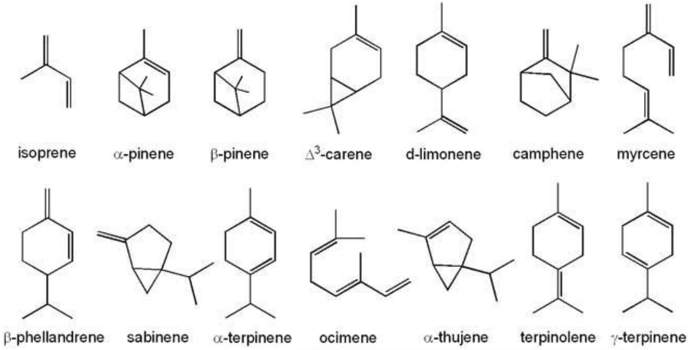
When the Going Gets Tough…

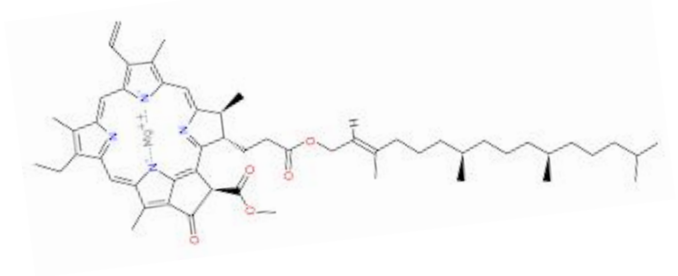
- **Many components can cause issues:**
  - Waxes
  - Resins
  - Oils
  - Terpenes
  - Cannabinoids
  - Pigments
- **Low water content**
- **How does our analyte associate with the crop matrix?**
- **“Like dissolves like”**





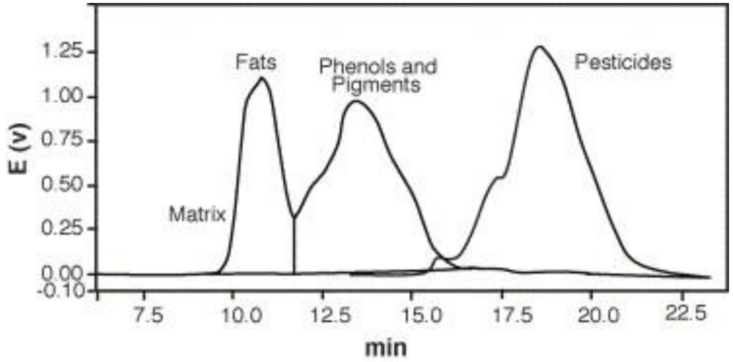


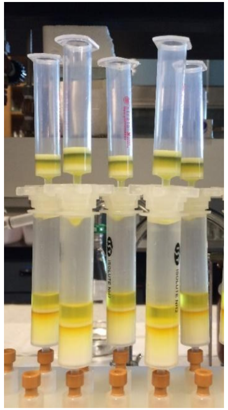




Use the Tools in the Toolbox!

- **Solid Phase Extraction (SPE)**
  - C-18, Strata-X/SCX/SAX, Plexa
  - PSA or NH_2
  - Graphitized Carbon Black (GCB)
  - Silica, Alumina, Florisil
- **Liquid-Liquid Partitioning**
- **Analytical Instrumentation**
  - LC-MS/MS, GC-MS/MS
- **As protocol LLMVs (0.01 ppm or less) continue to decrease, effective cleanups and instrumentation are more important than ever**





Data Generation

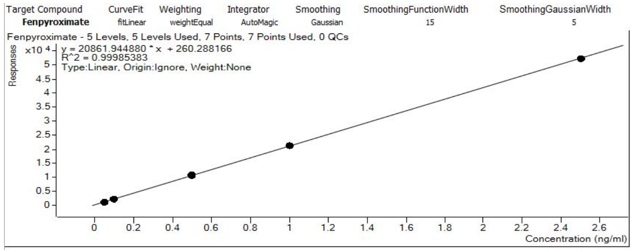
Compound
Fenpyroximate

Injection Date
9/4/2025

13033 - Fenpyroximate/Hemp (CBD Oil (Ethanol)) - UCP01 Processing Samples - Extracted 9/4/25 by ASM

Data File	RT	SampleName	Sample Info	Sample Type	Vial Pos	Inj Vol (µL)	g	mL Vol	mg Inj	Resp	Conc (pg/µL)	ppm	Ave ppm	% Rec	Inj. Repro.
09042025a001.d	8.277	Condition		Sample	Vial 1	5.0									
09042025a002.d	8.310	Condition		Sample	Vial 1	5.0									
09042025a003.d	8.290	Condition	ECBDA-UCP01	Sample	P1-A4	5.0									
09042025a004.d	8.358	Condition		Sample	Vial 1	5.0									
09042025a005.d	8.351	Condition		Sample	P1-A2	5.0									
09042025a006.d	8.344	Condition		Sample	P1-A3	5.0									
09042025a007.d	8.358	Condition		Sample	P1-A2	5.0									
09042025a008.d	8.412	Condition		Sample	Vial 1	5.0									
09042025a009.d	8.419	825-2M5	2.5 pg/µL	Calibration	Vial 1	5.0				52250.98					
09042025a010.d	8.460	825-2M6	1.0 pg/µL	Calibration	Vial 2	5.0				21365.32					
09042025a011.d	8.501	825-2M7	0.50 pg/µL	Calibration	Vial 3	5.0				10768.33					
09042025a012.d	8.494	825-2M8	0.10 pg/µL	Calibration	Vial 4	5.0				2168.43					
09042025a013.d	8.480	825-2M9	0.050 pg/µL	Calibration	Vial 5	5.0				1105.56					
09042025a014.d	-----	31429	ECBDA-UCP01	Sample	P1-A1	5.0	0.01976	10.0	0.009880	-----	<0.10	<0.05			
09042025a015.d	-----	31429	ECBDA-UCP01	Sample	P1-A1	5.0	0.01976	10.0	0.009880	-----	<0.10	<0.05	<0.05		
09042025a016.d	8.460	31429C0.50R1	ECBDA-UCP01	Sample	P1-A2	5.0	0.02000	20.0	0.0050	10499.80	0.4908	0.4908			
09042025a017.d	8.446	31429C0.50R1	ECBDA-UCP01	Sample	P1-A2	5.0	0.02000	20.0	0.0050	10482.95	0.4900	0.4900	0.490	98%	0%
09042025a018.d	8.487	825-2M8	0.10 pg/µL	Calibration	Vial 4	5.0				2230.09					
09042025a019.d	8.460	31429C5.0R1	ECBDA-UCP01	Sample	P1-A3	5.0	0.01984	200.0	0.0004960	10299.84	0.4812	4.8512			
09042025a020.d	8.460	31429C5.0R1	ECBDA-UCP01	Sample	P1-A3	5.0	0.01984	200.0	0.0004960	10225.49	0.4777	4.8153	4.83	97%	1%
09042025a021.d	8.467	32520	ECBDT-UCP01	Sample	P1-A4	5.0	0.02008	4000.0	0.00002510	25276.49	1.1991	238.8707			
09042025a022.d	8.467	32520	ECBDT-UCP01	Sample	P1-A4	5.0	0.02008	4000.0	0.00002510	25143.01	1.1927	237.5961	238		1%
09042025a023.d	8.514	825-2M7	0.50 pg/µL	Calibration	Vial 3	5.0				11027.54					

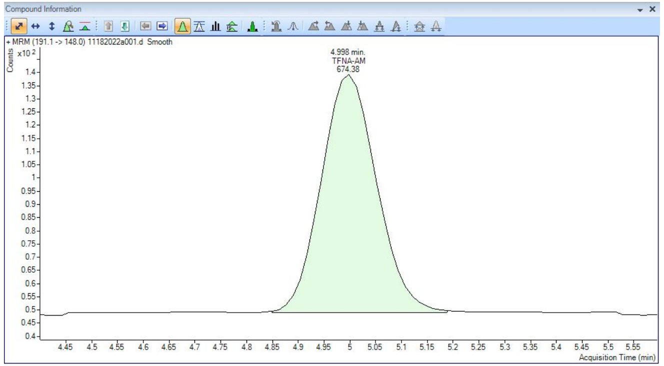
Calculated LOD at 0.045 pg/µL = 1199
Calculated LOQ at 0.10 pg/µL = 2346
"----" denotes response below area threshold

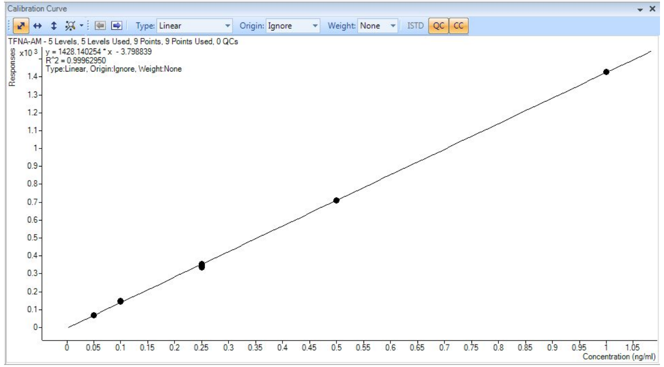


Clear Communication

- **Clear Communication = Efficient Project Management**
  - Data summaries are sent as they are generated
  - Questions are raised and answered in a timely manner
- **SD gives the authority to move forward at each critical event:**
  - Accepts validation data
  - Out-of-range recoveries
  - Strange findings
  - Storage stability data

Analytical Summary Report (ASR) Preparation





ANALYTICAL SUMMARY REPORT
Flonicamid: Magnitude of the Residue on Onion

PR# 08550

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Field ID Numbers

08550.20-CA*19	08550.20-CA*20
08550.20-WA*403	08550.20-TX380
08550.20-CA16	08550.20-CA17
08550.20-CA18	08550.20-ID181
08550.20-WA404	08550.20-OR405
08550.20-CO461	

Study Timetable
Study Initiation Date: 02/20/20
Experimental Termination Date: 07/20/21

Report Date

A priority becomes a project.

A protocol is developed.

Field trials are conducted.

Samples are analyzed.

Timeline to be continued… in Part 2!

Thank you!

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