IR-4 Project Management Committee Fall Meeting

October 8-10, 205

Agenda and Handouts

PMC Agenda-Version 0.1
October 8-10, 2025

Crown Plaza Kansas City, Downtown
1301 Wyandotte Street
Kansas City, MO
Zoom Link | Meeting ID: 934 6267 3576 **Passcode:** 123456

Wednesday, October 8	
3:00 pm - 4:30 pm	Introductory meeting with USDA-NIFA partners or PMC Meeting to commence

Thursday, October 9	
8:00 am - 5:00 pm*	Project Management Committee Meeting 1. Approval of minutes of new agenda items (Hengel) 2. CLC/Friends Update (Scholz and Beaudreau) a. 2026 funding strategy b. Plans for March 2026 Congressional Reception/Hill visits c. ARS strategies d. Farm Bill update e. Additional CLC items f. New Members 3. Management Reports a. Administrative Advisors (Buhler et al.) b. NIFA (C. Philips) ■ 2025 grant c. ARS (Munyaneza) d. Regions/ARS (Zebelo, Hausbeck, Gu, Hengel, Simmons) e. Headquarters Report (Baron) ■ Executive Director Search update (Lommel and Chojnacki) 4. Path Forward 2.0 Check-in ■ New Technology 1. eFDB a. QC for 2026 eField Databook 2. eQA 3. Updating of databases ■ Communications 1. Internal (Intranet site) 2. External ■ Analytical backlog 5. Program Discussions a. Food Residue/Product Performance Research (Carpenter et.al.) Existing activities update ● Field Research/Field Data book completions (paper and electronic reporting) ● Laboratory Research/ASR submissions ○ Decommissioning/Recommissioning of Wapato ○ Limitations of Tifton ○ Backlog report ○ Discussion of backlog policy changes ■ Ranking potential projects for FUW, advisory or mandatory

	■ HQ's ability to redlight chemicals ■ Matching the number of priorities assigned at FUW to laboratory capacity. ○ Discussion of Hemp requests ● QA activities / EPA audits ● Submissions ● Successes b. Results of Food Workshop ■ IR-4 Policy on EPA coded orange nominations c. Integrated Solutions Platform ■ Integrated Solutions projects - future? d. Biopesticide Regulatory Support Platform ■ Status ■ Addition of Alice Axtell e. Environmental Horticulture Program ■ Results of Workshop ■ Rebranding Program name - Ornamental Horticulture ■ Program vision f. Training Committee ■ National Education Conference (Dineen) ■ National SOPs ■ Other activities 6. Update of IR-4 Archives 7. Minor Use Foundation (Drost & Gore) 8. Assisting Specialty Crop Export opportunities 9. Funding opportunities vs Project limitations 10. Orientation strategy for the new Executive Director 11. Awards for NEC 12. Future meetings a. Schedule a date to decide on National Recognition of Excellence Award recipients after November 5, to be issued at the NEC. b. Summer PMC: Remote or try and connect with PMRA.
Friday, October 10	
8:00 am - 12:00 noon	13. Executive Session

IR-4 Northeast Region Update

Presenter: Simon Zebelo



Northeast Region PMC Report

July 1 – September 30, 2025

M. Ross, M. J. Hickman, S. Zebelo and J. Forder

Program Summary

Trials At-A-Glance

Food Use MOR Trials	2023	2024	2025
Trials Placed	31	26	31
Canceled Trials	3	1	4
Completed Trials	28	25	11
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	1
Reports Submitted	16	12	1

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

Env. Horticulture – Crop Safety	2023	2024	2025
# of Protocols	4	3	5
Trials Placed	31	19	48
Canceled Trials	2	0	0
Reports Submitted	29	0	0

Integrated Solutions Trials	2023	2024	2025
# of Trials	7	8	1
Completed Trials	7	8	0
Reports Submitted	6	7	0

Update from the Director's Office

The details of NER 2023-2024(Year 3) and 2024-2025(Year 4) sub-subaward contract processing are presented in the following table. UMES is processing a no-cost extension (NCE) for the 2023-2025 FYs budget.

Activities	2023-2024(Year3)	2024-2025(Year 4)
Subawards completed	26	21
Number of Sub awards Signed	25	20
PR completed	19 (plus 5 for UMD)*	N/A*
PO processed	19 (plus 5 for UMD)*	N/A*
Invoices received	21	9
Checks issued	21	9
NCE Requested	12	11

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

The only significant delay we have is that Andrew Wyenandt, a researcher from Rutgers, has not signed his Year 3 subawards. We are working to figure out whether he is going to conduct the assigned trials or not.

The NER team worked together to prepare the new proposal for the 2025-2029 FYs and submitted it to NC State, and NIFA has released the award. We are awaiting the receipt of the official subaward documents from NC State. Meanwhile, we are preparing the work statements of our subawardees and sub-subawardees.

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

I attended the NER entomology priority setting meeting, the NER environmental horticulture priority setting meeting, and the 2025 food use workshop in Denver, CO, from September 09 to 11, 2025. Moreover, I have attended numerous local, national, and international meetings and training sessions.

The IR-4 NER team held several regular virtual meetings. Thanks to the dedicated colleagues Marylee, Megan, Jane, John, Josh (UMES research office), SLRs, and the researchers, progress is moving smoothly in the NER.

Regards,

Simon Zebelo

Update from the Regional Coordinator's Office

Greetings from the Northeast,

In June, I assisted with the planning and accomplishment of another successful IR-4/EPA/USDA tour. We explored mushroom production in Maryland, field research, fruit production/packing in New Jersey and topped it all off with a fine meal at a winery.

Toward the end of June, we held our regional Food Use and Integrated Solutions priority setting meetings by discipline. I was pleased with attendance and participation. Several PCRs were submitted as a result and our planning for the Food Use Workshop was underway.

Much of July was spent preparing for the Food Use Workshop. In the later part of July, I traveled to the Cranberry Station in Wareham, MA to provide moral support for our FRD, Marty Sylvia, who was undergoing an EPA inspection. Marty did great and there were no findings. Jane Forder was an excellent QA support for the process. We also participated in the production of a national GLP training webinar.

On August 20th. we held our Northeast Region Environmental Horticulture priority setting meeting. Josh Kindel, the new IR-4 Environmental Horticulture Manager attended and introduced himself to the group. He explained how the workshop will be run in October. We had great attendance and lots of input from the group concerning the needs of our ornamental's growers.

September took us to Denver, CO for the Food Use Workshop. We had good participation from the Northeast and were able to achieve most of our priorities. It was a pleasure to present Thierry Besancon with a SOAR award. It is well deserved and he is honored by the recognition.

The week after the workshop I visited with Ken Trammel in Phelps, NY. He is still very much a part of ACDS trucking, but will soon be handing over the reins completely to Lange Research. They will keep the name ACDS. I visited Brian Lange and Aaron Green at Lange Research, Inc. in North Rose, NY. Aaron is doing a great job with the IR-4 GLP trials he took on straightaway when the FRD to which they were assigned left the company. With a team effort of QA, Study Directors, me, Aaron and Brian, not a stroke was missed. Aaron will soon be trained on the eFDB and will do future trials using the system. Brian Lange looks forward to more future cooperation with IR-4. It was a very beneficial visit.

These are the highlights for the past few months.

marylee

Program Report

Food Use Program

Magnitude of Residue

In 2025, thirty-one magnitude of residue (MOR) trials are being conducted in the Northeast Region. MOR field trials were conducted in four locations, including:

- Lange Research, Inc., North Rose, NY (Contract Research Facility)
- Lower Eastern Shore Research and Education Center, Salisbury, MD (University of MD)
-Rutgers Snyder Research and Extension Farm, Pittstown, NJ (Rutgers University)
-UMass Cranberry Station, Wareham, MA (University of Massachusetts)

Eleven sets of samples have been shipped and no electronic Field Data Books (eFDBs) have been completed yet. Fourteen Quality Control (QC) reviews have been completed for 2024.

Performance

In 2025, twenty performance trials are being conducted in the Northeast Region. The Efficacy and Crop Safety trials are being conducted at eight locations.

Efficacy and Crop Safety trials are being conducted at:

- Rutgers Center for Blueberry and Cranberry Research and Extension, Chatsworth, NJ (Rutgers

University)
- Agricultural Experiment Station, Geneva, NY (Cornell University)
- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University)
- University of Maryland Main Campus, College Park, MD (University of Maryland)
- Carvel Center for Agricultural Research, Georgetown, DE (University of Delaware)
- Wye Research and Education Center, Wye Mills, MD (University of Maryland)
- WVU Plant Diagnostic Clinic, Morgantown, WV (West Virginia University)
- Penn State Horticulture Research Farm, State College, PA (Pennsylvania State University)

One trial has been completed and one report has been submitted.

Environmental Horticulture Program

In 2025, there are four efficacy protocols and five crop safety protocols. Under these protocols, we placed four efficacy projects and forty-eight crop safety trials.

The four efficacy projects are being conducted at:
- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University)
- WVU Plant Diagnostic Clinic, Morgantown, WV (West Virginia University)

The forty-eight crop safety trials are being conducted at:
- Long Island Horticultural Research Lab, Riverhead, NY (Cornell University
- University of Maryland College Park, College Park, MD (University of Maryland)
- University of Connecticut Agricultural Research Station, Storrs, CT (University of Connecticut)

To date, no reports have been submitted.

Integrated Solutions

In 2025, one Integrated Solutions carry over trial is being conducted.

The trials are being conducted at:
- Penn State Horticulture Research Farm, State College, PA (Pennsylvania State University)

To date, no trials have been completed or reports submitted.

Quality Assurance

During the period of July 1 – September 23, 2025, I [Jane Forder] conducted 7 audits of field data books (total, paper and electronic). One FRA 1-2 audit. I performed 11 field in-life inspections, 5 in the Northeast Region, 5 in the North Central Region and one in the Southern Region (Florida). I performed one facility inspection in the Northeast Region (Massachusetts) and attended one EPA in the Northeast Region (also in Massachusetts). I conducted a number of reviews of paper field data books and reports in preparation for EPA inspections held during this time period. Administratively I uploaded all travel related documents including receipts for my in-life audits. I attended the electronic field data book meetings when I was not traveling for in-life inspections.

IR-4 Southern Region Update

Presenter: Liwei Gu



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 PMC

Liwei Gu, Kristen Searer-Jones, Gail Mahnken, and Yavuz Yagiz
Sepetember 30, 2025

1. Field program and QC

QC of FDBs: Six paper field data books are in the process of being QC-ed by Kristen Searer-Jones. Contract QC has been located and is undergoing training before beginning QC for the remaining 2024 electronic field data books, as well as 2025 electronic field data books, once they are received.

Tracking of field databooks:

Year	FRD	RFC	QA	HQ	SOR total	% completion
2022	0	0	0	95	95	100%
2023	0	2	0	74	76	97%
2024	24	36	1	24	84	26%
2025	62	0	0	3	65	5%

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 as completed.

2025 GLP assignments: Seventy-five residue trials were assigned at the beginning of the year, with one sugarcane trial to still be placed. As of June, 10 trials have been cancelled due to the manufacturer's decision or ChemSAC. Seven trials have been placed with contract researchers, including sugarcane, peach, and sweet potato.

Food Crop Product Performance Trials: Forty-one performance trials have been assigned in 2025. Twenty-seven reports have been received thus far. Forty-four of forty-eight 2024 reports have been received.

Integrated Solutions (IS) trials: Three 2025 integrated solutions trials have been assigned thus far. Additional trials will be assigned once working groups conclude and protocols are finalized on the remaining prioritized projects. Nineteen of the twenty-one 2024 reports have been received.

Environmental Horticulture Trials: Forty-two environmental horticulture trials were assigned in 2025. Thirty-four of thirty-seven 2024 reports have been received.

An Equal Opportunity Institution

2026 SOR Priority Setting: Three discipline-specific calls were held June 10-12, 2025, along with a final priority setting call held on August 19, 2025. June and August calls were well attended, and approximately 20 southern region researchers attended the Food Use Workshop in Denver, Colorado, in September, either in person or virtually. Additionally, a virtual Southern Region Environmental Horticulture Priority Setting Call took place on August 25 and was attended by approximately 30 southern region researchers. As of the end of September, fourteen southern region researchers have registered for the Environmental Horticulture meeting in Kansas City, MO, in October.

Training: All FRDs continue to train on eFDB, as well as attending quarterly trainings. Additionally, FRDs will travel to Charleston, SC, in February to attend the National Education Conference.

Extension and outreach activities:

- Virtually attended Southeast Vegetable Extension Workshop July 14-15, 2025.
- Hosted the final virtual southern region priority setting session on August 19, 2025.
- Hosted the virtual southern region EH priority setting session on August 25, 2025.
- Attended the Food Use Workshop, Denver, Colorado, September 9-11, 2025.
- Will attend Environmental Horticulture Workshop, Kansas City, Missouri, October 7-8, 2025.
- Will virtually attend Southern IPM Center Advisory Council Meeting, October 14, 2025.
- Will attend NRPM, Raleigh, NC, October 27-29, 2025.

2. Analytical Lab

Projects and reports completed:

#	Submission Date	PR No	Pesticide	Commodity	Trial	
					Year	Number
1	03/25/25	13682	Tolpyralate	Blueberry	2024	8
2	05/23/25	13511	Inpyrfluxam	Tomato	2023	17
3	07/07/25	13498	Tiafenacil	Cucumber	2023	8
4	08/11/25	13541	Fluazifop-p-butyl	Pea	2023	9
5	08/19/25	07883	Pyridate	Corn (sweet)	2023	14
6	09/04/25	13078	Fludioxonil	Basil	2023	5
7	09/04/25	13078	Pydiflumetofen	Basil	2023	5
8	09/26/25	13407	Isocycloseram	Strawberry	2013	5

For 2025, 8 analytical summary reports (ASR) have been submitted, of which 6 were backlogged. One project began in 2023, the other in 2024.

Ongoing Projects and Goals:

Twenty-one projects are currently in progress, and of these, fourteen are considered backlogged.

The status of the ongoing projects is as follows:
Two are ready for QA review.
Five in ASR writing/preparation
Three are pending final storage stability interval analysis
Eight are in field trial analysis
One is awaiting the receipt of a 2025 field trials
One is in method development.
One is in method re-evaluation.

Fifteen projects for which samples have been received remain to be started. Of these, five began in 2024 and ten in 2025.

In addition to the 8 completed ASRs, we aim to complete 7 to 8 more ASRs in 2025, which will include several currently backlogged projects.

3. Quality Assurance Unit

The assigned tasks for 2025 are 81% completed.

QA items	Assigned Or planned	Completed	Completion %
Final Petition Audits	0	0	0%
Field Data Book Audits	110	97	88%
Field Critical Point Audits	15	11	73%
Lab Critical Point Audits	25	23	92%
Field/Lab Facility Inspections	1	1	100%
EPA Audits	0	0	0%
Analytical Summary Report Audits	21	8	38%
Contributing Scientist's Report Audits	0	0	0%

IR-4 Executive Director Search Update

Presenters: Steven Lommel and Krystal Chojnacki



IR-4 Project

IR-4 Project Executive Director Search Update

Krystal Chojnacki

Search Committee

<u>Supervisor:</u> **Steve Lommel, NC State, Assoc. Dean and Director of NCARS**	Debbie Carpenter, IR-4 HQ	Frank Louws, NC State Horticultural Science, Head
Chair: David Monks, Assoc. Dean and Director of NC State Extension	Krystal Chojnacki, IR-4 HQ	Adrian Percy, NC State PSI Executive Director
Doug Buhler, IR-4 AA	Martellis Dickens, CALS HR, ex officio	Todd Scholz, CLC Chair
Danesha Seth Carley, NC State CIPM and CERSA	Matt Hengel, PMC Chair	Cole Smith, NC State FRD

Search Statistics:

- **31** applicants and application packages reviewed
- Position was open to applicants from **7/3/2025 - 8/26/2025**
- Advertised on **10** professional/relevant job board sites
- **8** candidates selected for initial Zoom interview; all accepted.
    - Interviews held Sept - early Oct

IR-4 Project

Next Steps:

Search committee meeting 10/3/2025 to select candidates to bring in for in-person interviews.

Dates held for second, full-day, in-person interview

- Wednesday, October 15, 2025
- Wednesday, October 22, 2025
- Friday, October 24, 2025
- Thursday, October 30, 2025

Time for candidates to meet virtually with PMC Members has been set aside.

Delay in Hiring:

- NC State has instituted a hiring and salary capacity policy in anticipation of State/Federal funding challenges. New person will not be able to start until January 2026
  - This policy could be revoked at any time.

- Jerry will maintain the role of Executive Director role during the final months of 2025, although he will be focused on critical items that must be completed before his retirement.

IR-4 Project

Connect With Us



IR-4 eFDB Update

Presenters: Philip Moore and Jimmy Byrtus



IR-4 Project

eFDB Update and QC Question

October 2025 PMC Meeting

Philip Moore and Jimmy Byrtus

eFDB: Present and Future

IR-4 has reached a crossroad in the implantation of digital data capture via eFDBs. We've made great progress, but much is left to do. What might you ask?

1. eFDBs promised reduced QC costs, but we still pay for this service. This topic is a questions for the PMC, "do you, as an organization, want to continue to pay for this service?"
2. Communication needs to be improved: We've pushed this change for everyone, most excel, but we recognize some lag in understanding: some confusion remains, "how to" information is in disparate locations & time zones matter in response
3. iAdvantage Software code has recently caused bugs/ errors in mobile ditions and a new system is being provided soon; universal for all devices/ software. iPad Mobile use is Restricted currently. The website and Windows mobile are normal.
4. We have fully GLP digital documentation and signatures in the eFDB, but not in other areas where eSignatures could be used, both GLP and non-GLP. This topic is a recommendation for PMC to act expeditiously, towards a new policy
5. Philip is planning to turn over lead eFDB Admin responsibility to Jimmy by the end of the year. Philip will continue to assist as Admin. Philip's primary role is now Lead Entomologist



Improving eFDB Communication

- The eFDB impacts over 100 individuals within and contracted with IR-4. Each user may experience a “error” or need for assistance. Also note database updates and other regulated communications are frequent for HQ.
- Current process for receiving eFDB notices is extremely limited. No current SOP or process, just e-mail us (Jimmy, David, Philip) or call and we’ll help. Multiple eFDB queries, on a given day + everyday database updates to David.
- If “error” : we report it to iAdvantage and log it under non-routine maintenance (google sheet). We troubleshoot or advise and serve as liaisons between impacted user(s) and company / SD + QA. Solutions can sometimes be technically complicated to implement and understand, which may impact other users
- While we strive for quick resolutions, some FRDs need help at off hours or when no-one is readily available: causing frustration and potentially impacting application timings/ outcomes.
- Some QA/RFC/ others want to see details about eFDB errors and inquires: what caused them, the resolutions, who was impacted, but that info is not easily available, nor able to track and quantify concerns
- Idea is to create an IT ticket system via ServiceNow – database of queries and group e-mail to use. This is not a 24 hour response system, but does retain our eFDB questions for all to see in database. Specific folks are notified, auto e-mails are sent, can we (or RFC) respond and we can track who is having trouble and why
- Contract via NCSU CALS IT - $450 annual per responder: $1350 (for 3 eFDB Admins) or $4050 (if including 6 RFCs)

Electronic Signatures – Explore?

- While the eFDB is great for field site digital documentation, other non-eFDB data should transition from paper to electronic only. Is now the time to consider eSign and make a policy?
- There is a cost to implementing new programs like this (in staff time atleast). "We should wait and see what the recommendations are from CLA or we shouldn't pay additional costs for e-signatures".
- Is now the time to START? We know its complex for each site, with unique IT rules. HQ can do this now. see how that goes at HQ, if positive, expand system IR-4 Nation-wide
- Some electronic signatures are free, start with non-GLP (included in Adobe License, like Certificate). The IR-4 performance/ IS protocols are already being done with Adobe Sign, but no official policy exists
- There is a cost to each "packet", required for GLP (audit trail), but this is offset by reducing the cost of paper generation, transfer and storage.
- Some test sites (e.g. UC System) already have paid access to Docu-Sign for (non-GLP) signatures and contracts
- Will PMC declare that IR-4 (HQ or National) needs an electronic signature SOP?

IR-4 Project

Some present and future changes

- iAdvantage announced their iPad Mobile Edition could no longer be used in the Apple App Store and asked us to stop using it, as there were frequent “bugs”
- They have promised a whole new system that will be universal, rather than different for each device and software interface
- We hope this new version is better: there are complaints about iAdvantage application calculation forms that cannot be changed
- We’ve completed reviewing suggest eFDB changes for 2026 and will implement those that were approved. These resolve confusion and help make forms more clear and easier to use
- We have dedicated significant time and effort to resolving concerns from all eFDB users. We are working diligently to make the system better for 2026 and provide more + better information
- While Philip will step aside for Jimmy to take the lead in administering the eFDB, he will continue to serve on the eFDB Admin team.

IR-4 Project

Do we want to still pay for QC service?

1. This question is re-occurring – we need to make a decision and not bring it up every year. Opinions will vary within IR-4, the decision is controversial:
2. “QC is good training for FRDs and allows RFCs to keep better informed of eFDB data quality”
3. “QC reduces the audit work required for QA and findings are easier to resolve in the QC stage, than at audit.”
4. “After 2-3 years, folks should have learned to use the system and now they need to do it. Enough hand holding. If it’s an individual performance issue or to make it easier for QA those are not good reasons for excessive costs”
5. “The reason for QC was to catch application calc errors early allowing a replacement trial to be scheduled quickly. Now the eFDB catches application errors in real time. Why are we paying for duplicative service to review every eFDB, when QA is the one required to perform this service”
6. “QC is a cost that could be put to other uses. QC is a cash loss and an opportunity loss. Surely less than 100% QC of eFDBs is possible?”

IR-4 Project

What Field Data Book Reviews Occur Now?

1. Currently: all **FRDs complete forms, review to mark forms complete, and then notify** their SD/ RFC/ and HQ-DB Admin that the eFDB is finished and ready for a QC review.
2. The **QC (contractor, RFC, or regional staff) checks** every form and document upload for protocol and eFDB SOP compliance and provides a list of corrections needed via e-mail.
3. The **FRD makes the changes** and responds to each finding. After **QC confirmation** of the changes being correct, the **FRD ships the trial data** to HQ for the QA audit.
4. 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.
5. The **SD reviews data, adds to report, changing if needed,** provides the Final Report to **QA**
6. The **eFDBs are audited again by QA** – for any changes made and accuracy with Final Report. Provides findings via **eQA**, where **SD** respond and provide corrections made. Then **TFM reviews** and signs off.
7. Repeat **step 6 for the 2nd final report audit,** via eQA. Then QA completes closing check.

FRD Generates data-> FRD completes eFDB -> QC reviews -> QC checks -> QA Data audit -> SD reviews -> QA Data + Report audit (2X) -> QA checks -> SD archive data and sign report

Maintain existing (100%) QC or modify?

1. Current System: **100%** of FDBs are QC reviewed prior to QA audits by contractors or permanent staff. **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**

2. Option 2: **Continue QC, but no longer pay contract QC.** Keep only 1-2 regional staff to do National QC for all eFDBs?

3. Option 3: Only **first notebook** from a given FRD in a calendar year is QC reviewed at the regional office, or as needed for training.

4. Option 4: **Random QC inspection** of certain Sites/ FDBs in some systematic way. This could coincide with an RFC inspection of field site records and facilities or other training and support.

5. Option 5: **Other ways** to ensure RFCs see 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.

IR-4 eQA Update

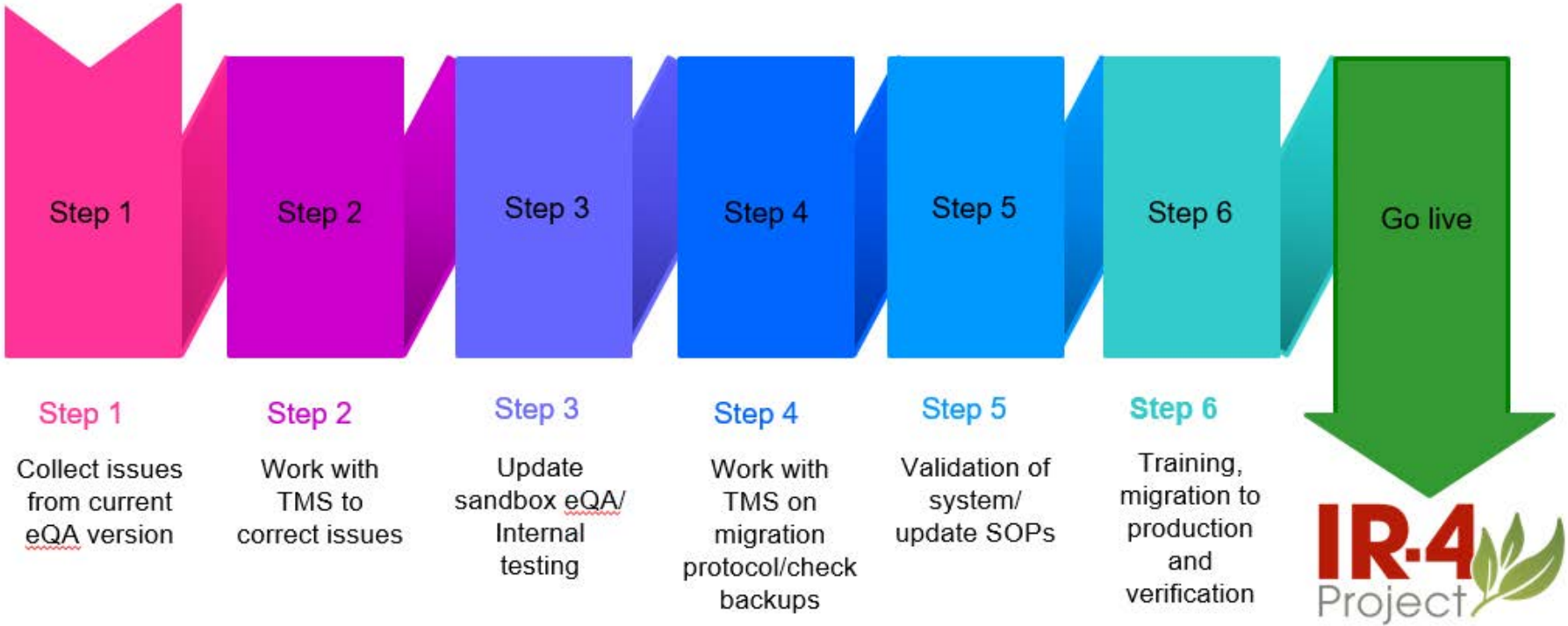
Presenter: Johanna Mazlo



eQA Update

October 2025 PMC Meeting

eQA Software Update



eQA Update

- The new version has been updated to the eQA development (sandbox) site
  - Audit workflows have been edited to account for TFM notification changes
- Verification of eQA backup
  - Verification is completed
- Validation
  - eQA Validation SOP is completed
  - Draft validation plan/protocol in the SOP

IR-4 Project

IR-4 Project

Thank you

IR-4 Technology Team
Updating of Databases

Presenter: Jimmy Byrtus



IR-4 Project

Technology Team Update

October 2025

Updates

- Technology Team Updates
  - We are prepared to move forward with updating database systems when funding is available
  - eSignatures is a bit of a slippery slope with regards to validation using “free” software and we should not move forward with this
  - Paid versions of software would be the best solution to move forward when funding is available
  - It should be noted that all of the original ideas brought forward by the Technology have been resolved or ready to be resolved once funding is available.
    - User friendly eQA nearing completion by the QA team, Intranet site completed, New database on hold due to funding, best practices for handling raw data in the eFDB

IR-4 Project

Moving Forward

- The Technology Team has started to look into how do we move forward in this type of budgeting environment?
    - As a general rule of thumb new technology costs money, but we must be prudent with how IR-4 spends money.
- Low/No cost ideas generated by the Technology Team
    - Contact list with wide variety of information on the intranet
    - Integrate Environmental Horticulture database from Access to .Net framework and integrate into traditional database searches
    - Improve the Research Selection Portal for Environmental Horticulture
        - Josh is currently working with Shiayi on this.
    - Improve submitting Environmental Horticulture Reports

IR-4 Project

IR-4 Communications Update

Presenter: Hannah Ross



Communications Update

Hannah Ross | Fall 2025



External Comms Updates

Stories, social media, print materials, newsletter, awards + more

RECENT STORIES

The Fight Against Citrus Greening: Emerging Biologicals Offer Hope

Posted on September 25, 2025 — Robin Siktberg

As HLB continues to devastate the citrus industry in Florida and beyond, IR-4 and stakeholders seek fresh solutions in emerging technologies.



Over the past 2 years we have contracted with writer Robin Siktberg through Meister Media for 3-4 success stories per year. Her writing is high caliber and her expertise in the field is deep, which has strengthened the quality of these stories as well as decreased the time spent editing compared to writers engaged in the past. We plan to continue utilizing her services. We will publish 2 more of her stories this fall.

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

RECENT STORIES



In addition to our more technical success stories, we've seen positive interaction since the 60 Years campaign on the People of IR-4 story series, which introduces team members from different areas of IR-4, sharing insights on their work and personal interests. This humanizes our communications and connects our mission to the people behind it. Our intern Raven Baez is doing an excellent job writing these.

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

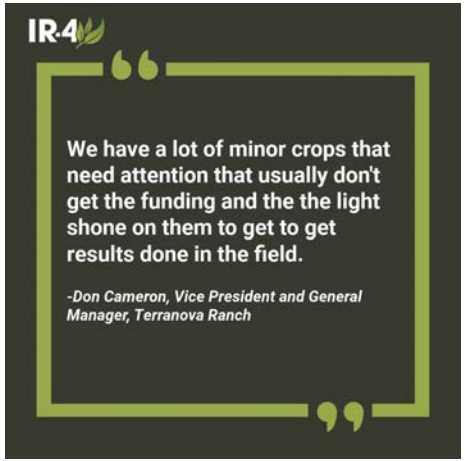
SOCIAL MEDIA SNAPSHOT















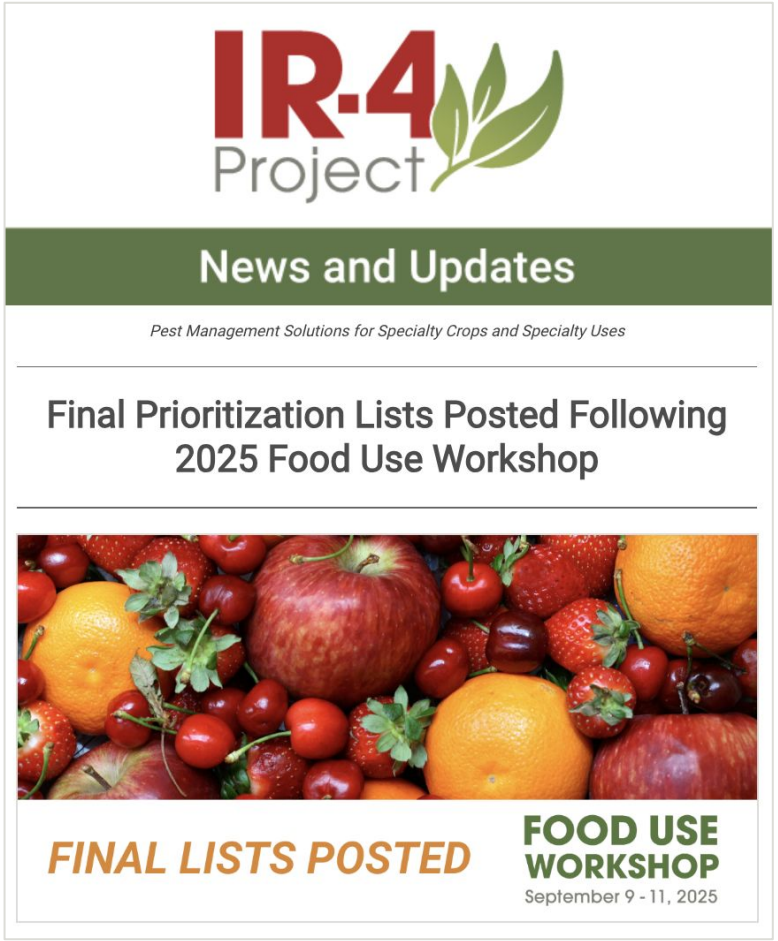
SOCIAL MEDIA GROWTH

920 new LinkedIn followers in the past 90 days

Instagram views up 146% past 90 days

Facebook views up 60% past 90 days

NEWSLETTER



- Newsletter open rate holding steady at 36% (over **9,800 opened** in the past 90 days) *(healthy rate = 20-40%)*
- Over **1,000 clicks** from newsletters sent in past 90 days *(we're at 4%, which is 2% over industry average)*
- Over **2,250 contacts**

EVENTS

Event promotion has been the main communications push of the past 3 months and we've seen solid numbers in registrations, PCR engagement and survey responses.



PROGRAM + PLATFORM MESSAGING

FOOD CROP PROGRAM

IR-4 Integrated Solutions Platform

THE INTEGRATED SOLUTIONS PLATFORM (IS) explores potential new pest management strategies for organic and conventional specialty crop growers through a systems-based approach—combining traditional tools with emerging technologies. This research helps growers manage increasingly complex pest challenges in alignment with the principles of Integrated Pest Management (IPM).

GOALS AND OBJECTIVES

1. **Filling complex gaps in pest management programs:** Many pest problems don't have a simple fix, and growers continue to lose yields to persistent (or new) pest issues. IS aims to fill gaps in growers' toolboxes by screening a variety
novel products, new technologies, and IP
2. **Finding solutions to address pest resista**
new tools are needed to help growers ope
new modes of action or combine a variet
3. **Reducing pesticide residues in produce:**
globally. IS explores pest management st
produce with lower pesticide residues an

PLATFORM DELIVERABLES

Generating data to support new products & new use registrations.

Providi
researc
the dat
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ELIGIBLE TECHNOLOGIES (*not an exhaustive list of tools)

TOOL TYPE	EXAMPLES	PURPOSE/FUNCTION
PRIMARY TOOLS*	Conventional pesticides Biopesticides FIFRA-exempt (25b) products Plant growth regulators Biotechnologies Emerging technologies Application devices	Primary tools are tools with **direct pest control activity**. These are the core components being evaluated in IS studies.
COMPLEMENTARY TOOLS*	Adjuvants Biostimulants Biocontrols Resistant cultivars Mechanical tools Cultural practices	Tools or practices that **enhance the efficacy of or reduce reliance on primary tools**. Must contribute to improved pest management.

Making collaborative strides towards refreshed program/platform materials for IS and EH

IR-4 Environmental Horticulture Program

The IR-4 Project's Environmental Horticulture (EH) Program facilitates regulatory approval of sustainable pest management products for ornamental crops. EH research helps green industry growers cultivate a diverse selection of healthy plants for landscapes, homes and gardens—a service to growers, the environment, the economy, and public well-being.

The EH program is divided into two key areas:

REGISTRATION SUPPORT

EH coordinates research to gather data on bio-based and



solutions for boxwoods and other important nursery crops.

Outcomes
- Improved management strategies and diagnostic tools
- Better understanding of pathogen infection and pest development

ECONOMIC IMPACTS*

9,700 total jobs supported (directly and indirectly)

$725.5 million contributed to the annual GDP

Annual crop losses mitigated valued at $506 million

**Source: 2022 Economic Impact of the IR-4 Project and Programs, Michigan State University Center for Economic Analysis*

IR-4 SOAR AWARDS

IR-4 chose two external partners to honor with the 2025 SOAR Award. These recipients were announced at the Food Use Workshop and we will continue to spread the word with a web story in October:

THIERRY BESANCON



ARMANDO MONTERROSO



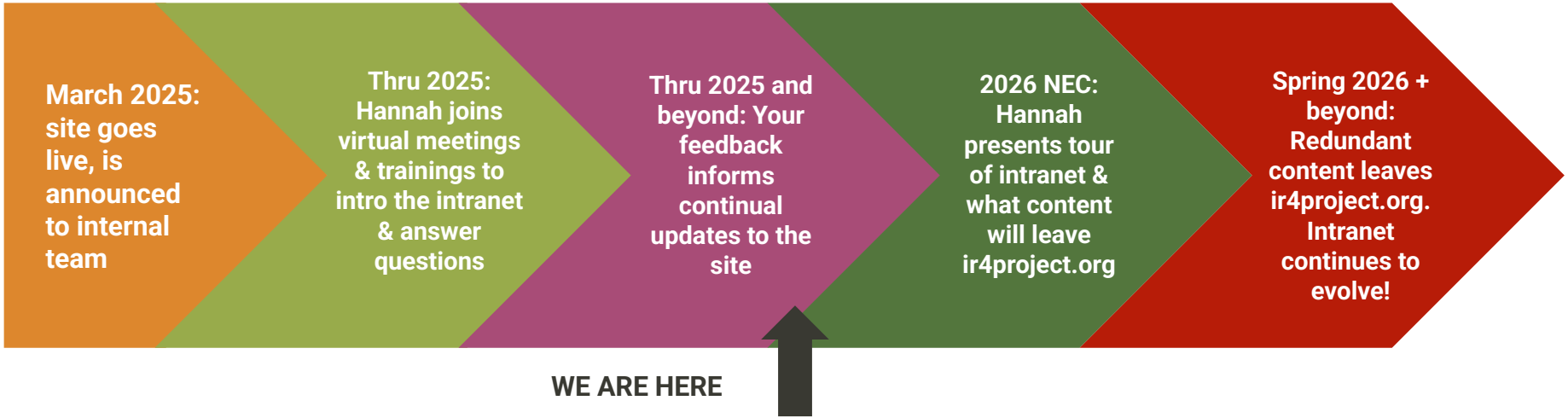
INTERNAL COMMS UPDATES

Recent & Upcoming IR-4 Awards

Intranet Updates

Explore recent updates to this new library of resources designed to support the IR-4 team in our daily work.

2025-2026 Intranet Launch Timeline



I've been joining meetings and trainings regularly to ensure the whole IR-4 team hears about the intranet, knows how to use and access it, and knows how to provide their feedback. I have responded to several requests for new content additions and tools. The feedback form is open for responses.

IR-4 Project

New to the Intranet

National Resources from Headquarters

- 2025 Dates and Deadlines
- Document Review Tracker
- Travel Plans Tracker
- Contacts
- Databases
- Guidance Documents and Advisories
- IR-4 HQ GLP Org Chart
- GLP Handbook can be found in QA Resources
- Award Nomination Guidelines

Resources have also been updated on Training Materials, eFDB Training, and National Education Conference

IR-4 Project

Intranet Next Steps

- Presentation at NEC to give attendees an updated tour of the site and its additions since launch, as well as point out which materials/pages on ir4project.org will be removed due to their presence on the intranet

- Transition of materials off of ir4project.org that exist on the intranet will happen after the NEC

- Continual improvements will be made to the intranet and the feedback form will remain open

IR-4 Food Residue/Product Performance Research

Presenter(s): Debbie Carpenter et.al.



IR-4 Project

Food Program
October 2025

Thomas Pike, Cristina Marconi

Outline

New Uses - 2025
Submissions – 2025
Crop Group update
Residue Research Program (10-year history)
Outstanding Field Notebooks
Timeline Summary
Regulatory Challenges

2025 New Uses

3 Actions (new uses through September 2025)

- Cyprodinil (1)
- Fludioxonil (1)
- Afidopyropen (1)

2025 Submissions – 6 (as of September 2025)

- **Acetamiprid**
- **Sulfur Dioxide**
- **Clomazone**
- **Benzovindiflupyr**
- **2,4-DB**

- **Submitted as non-PRIA action**
  - Cycloate/Spinach
  - Cycloate/Garden Beet

Sources of Reduction in New Uses/Submissions

New Uses

Only three tolerance actions associated with IR-4 work published thus far in 2025

- *Delays associated with change in administration*
- *Increased bureaucratic hurdles at EPA related to posting items in the Federal Register*
- *Substantial reductions in staff at EPA to process new uses*

Sources of Reduction in New Uses/Submissions

Submissions to EPA

Fewer tolerance petitions submitted to EPA thus far in 2025 compared to historic averages

- *Lack of pollinator data now a significant hurdle to submissions*
  - *Using company meetings to prompt registrants to investigate data gaps*
  - *Many registrants waiting for DCI to generate data = delays to submission*
- *Need to amend final reports delaying some submissions*
- *Backlog of studies to be completed from both laboratory and HQ*
  - *Ongoing efforts to address laboratory backlog*
  - *Backlog of studies to be written being addressed through rebalancing of workloads among study directors,*

IR-4 Project

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 Q2 2026**

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

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

2026 Residue Program

- 37 New Studies
- 9 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 - 10/25

Year	Total	FRD	RFC	QA	HQ
2023	384	1	3	1	379
2024	365	103*	35	15	193

*Not included: 14 field trial completed after Jun/2025 (based on MS) and 5 delayed trials or missing tentative dates

IR-4 Project

Field Data Notebooks - 10/25

Timeline Summary

Completion of FDB is critical to meeting timelines.

- *2023 Field Data Books: ~ 99% at HQ;*
- *2024 Field Data Books: ~ 53% at HQ; ~28% still with FRDs (slight change from July)*
- *2025 Field Data Books: majority in the field phase and will not be covered*
- *RFCs are moving Field Data Books along once received, there are still 4 books from 2023 with FRD/RFC.* ***It is crucial to move these along****.*

Outstanding FDB - 10/25

Notebooks with FRD						
Year	ARS	WSR	NER	SOR	NCR	CAN
2023	0	0	0	1	0	0
2024*	14	43	3	37	5	1

*Not included: 14 field trial completed after Jun/2025 (based on MS) and 5 delayed trials or missing tentative dates

Notebooks with RFC						
Year	ARS	WSR	NER	SOR	NCR	CAN
2023	0	1	0	2	0	0
2024	2	8	6	12	6	1

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Regulatory Challenges

Internal challenges

Timeline: Completion of FDB is critical to meeting timelines.

- *One outstanding book holds up the whole study, just like analytical backlog and data quality*
    - *Recent increase in number of amended final reports.*
- *Concern that if we miss a submission, it could be years before it can go in.*
- *It is too early in the implementation process to evaluate if eFDB helps ease delayed field data books*

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.*

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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, compounded by loss of personnel at EPA

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

Uncertainty over impact of federal government on operation of EPA

IR-4 Project

Thank You!

IR-4 Project

IR-4 Lab Updates & Backlog Report

Presenter: Debbie Carpenter



IR-4 Project

Laboratory Update/Backlog
October, 2025

Debbie Carpenter

Outline

Backlog

Current status at each lab

Plans to address backlog

Use of contract labs

Summary

Other

IR-4 Project

Backlog Details - TIR

PR	Chemical	Matrix	ASR Due Date	ASR Est.	Note	Backlogged	ss
13094	Difenoconazole + Azoxystrobin	Spinach	Mar-23		Sample analysis complete. Waiting only for SS (01/27). Difen only.	1	1
13353	Difenoconazole + Azoxystrobin	Mint	Oct-23		Only metabolite analysis still needed. Difen(complete) + triazoles only.	1	
13218	Ethaboxam	Almond	Nov-23		Analysis complete. ASR prep ongoing.	1	
11331	Difenoconazole + Azoxystrobin	Tomato	Mar-24		Only metabolite analysis still needed.	2	
13256	Cymoxanil	Strawberry	Aug-24		Sample analysis complete. SS will go to 10/27.	1	1
13390	Fenpyroximate	Lychee	Sep-24		Sample analysis complete. SS will go to 12/27.	1	1
11473	Pyriofenone	Lettuce	Dec-24		Sample analysis complete. SS will go to 06/27.	1	1
					Total	8	4

IR-4 Project

Plans for Moving Forward - TIR

8 studies are backlogged:

- 4 are awaiting storage stability
- 1 is ready for QA (analyses completed and ASR drafted.)
- 2 require triazole analysis and will be transferred to a contract lab

- Concern about funding/personnel

Backlog Details - YAR

PR	Chemical	Matrix	ASR Due Date	Backlogged
12972	Fludioxonil + Pydiflumetofen	Peach	Oct-22	2
12817	S-Metolachlor/Metolachlor	Greens (Mustard)	Dec-22	1
12818	S-Metolachlor/Metolachlor	Turnip Greens	Dec-22	1
11997	Bicyclopyrone	Pineapple	Apr-23	1
13110	Azoxystrobin	Spinach (GH Transplant)	Feb-25	1
			Total	6

IR-4 Project

Plans for Moving Forward - YAR

6 studies are backlogged

- Ongoing efforts with Davis and HQ staff to address data quality concerns. Davis staff helping to draft analytical reports.
- Current efforts focused on completing existing studies.
- Remaining studies that need analyses have been transferred.
- Lab Director leaving end of 2025.
- Plan to decommission lab, and when a new LRD/instrumentation in place, lab to re-open.
- EPA audit was completed.

IR-4 Project

Backlog Details - CAR

PR	Chemical	Matrix	ASR Due Date	ASR Est.	Note	Backlogged	SS
12634	Sulfosulfuron	Tomato	23-Sep		Waiting on SS (11/25). Transferred from another lab.*	*	1
13217	Fluopicolide	Almond	23-Oct		Awaiting SS (01/26).	1	1
13311	Spidoxamat	Hops	23-Oct		In QA	1	
13007	Isofetamid	Hemp	24-Apr		Awaiting P.3	1	
13241	Fluopicolide	Avocado	24-May		ASR Prep.	1	
13142	Fluroxypyr	Mint	24-Sep		Fresh/Dried awaiting SS, oil in validation	1	
13495	Quizalofop	Hops	24-Oct		Shipped to HQ		
13048	Abamectin	Hemp	24-Oct		Waiting on SS (10/25).	1	1
11808	Cyflumetofen	Caneberry	24-Oct		Addressing findings	1	
13451	Clethodim	Olive	24-Dec		Awaiting SS (12/25).	1	1
13450	Ethephon	Hazelnut	24-Dec		Awaiting SS (12/26)	1	1
13484	Rimsulfuron	Avocado	25-Mar		Awaiting SS (10/26).	1	1
13533	Clethodim	Avocado	25-Mar		ASR Prep.	1	
13079	Fluopyram + Trifloxystrobin	Miracle Fruit	25-May		Shipped to HQ		
13283	Ethaboxam	Grapefruit	25-Feb		Transferred from YAR	*	1
13284	Ethaboxam	Lemon	24-Mar		Transferred from YAR	*	1
13285	Ethaboxam	Orange	25-Mar		Transferred from YAR	*	
13035	Cyclaniliprole	Hemp	25-Jul		In QA	1	
13281	Fluopicolide	Cherry	25-Aug		Rec'd at HQ (8/25)		
13633	Oxathiapiprolin	Peach	25-Sep		Addressing findings		
13184	Clethodim	Rice	25-Oct		ASR Prep.		
13533	Clethodim	Avocado	25-Oct		ASR Prep.		
13542	Flutianil	Basil	25-Oct		ASR Prep.		
13026	Indaziflam	Asparagus	25-Jul		In QA	1	
13184	Clethodim	Rice	25-Oct		ASR Prep.	13	8
						*=inherited from another lab	

IR-4 Project

Plans for Moving Forward - CAR

13 studies are backlogged –

- 8 are awaiting storage stability (includes samples inherited from other labs, but not counted in backlog total.)
- 6 are in ASR preparation (all samples analyzed)
- 4 are with QA (ASR initial draft complete)

- CAR in the process of moving labs, lots of back and forth
- Hemp studies take much time, many crop fractions
- Many ASRs are close to completion

IR-4 Project

Backlog Details - FLR

PR	Chemical	Matrix	ASR Due Date	ASR Est.	Note	Backlogged	SS
12752	Fluazaindolizine	Mint	Nov-23		Method development; redo analysis based on method.	1	
11568	Thiophanate Methyl	Radish	Feb-24		Ready for QA review	1	1
13169	Fluazaindolizine	Radish	Feb-24		Waiting on SS (4/27).	1	1
13360	Thiophanate Methyl	Carrot	Mar-24		Ready for QA review	1	1
13538	Isocycloseram	Sunflower	Dec-24		Trial analysis	1	
13304	2,4-D Choline	Strawberry	Jan-25		Waiting on SS (4/26).	1	1
13504	Isocycloseram	Pomegranate	Jan-25		Trial analysis	1	
13449	Inpyrfluxam	Coffee	Mar-25		Trial analysis	1	
13500	Tiafenacil	Tomato	May-25		ASR in prep	1	1
13405	Isocycloseram	Pepper (GH)	Jul-25		Trial Analysis	1	
13489	Fludioxonil + Pydiflumetofen	Asparagus	Aug-25		Fludixonil complete; Pydiflumetofen in progress	2	
					Total	12	5

IR-4 Project

Plans for Moving Forward - FLR

12 studies are backlogged –

- 5 are awaiting storage stability
- 1 are in ASR preparation (all samples analyzed)
- 2 are ready for QA
- Storage stability impacted finalization of studies

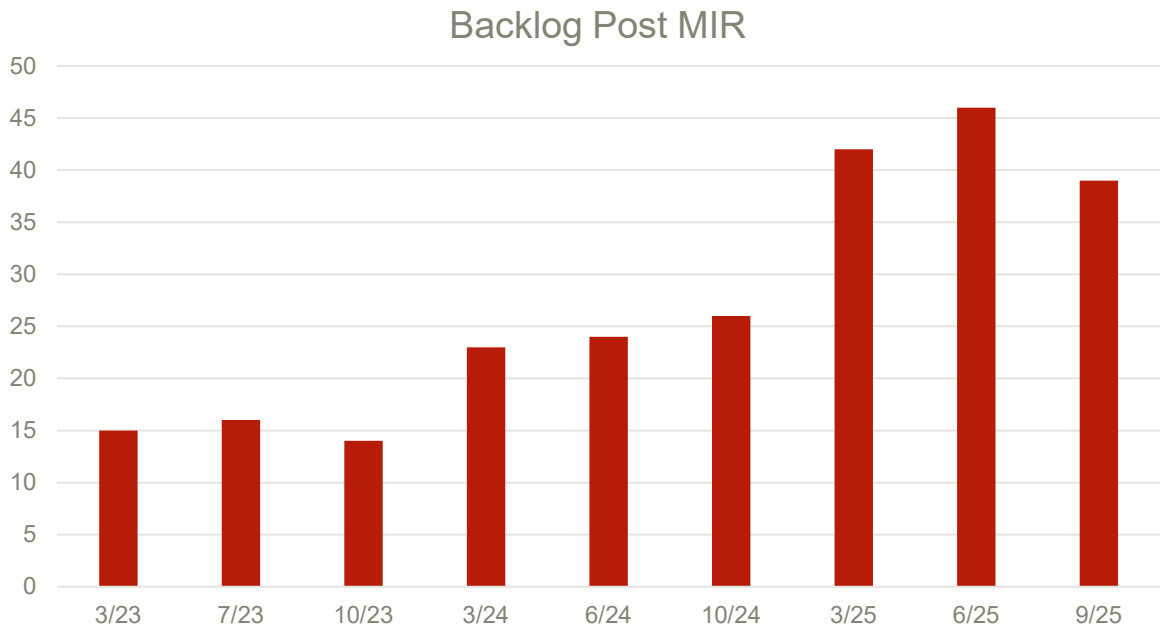
- Studies with many crop fractions
- Complex analyses – fluazaindolizine study

Studies at Outside Labs

PR	Chemical	Matrix	Original Lab	
9102	Flutolanil	Strawberry	GPL	1
9520	Flutolanil	Beet (Garden)	MIR (GPL)	1
11148	Glufosinate	Sesame	Adpen	1
11195	Flutolanil	Pepper (Bell & nonbell)	FLR (GPL)	1
11772	Linuron	Bean (edible podded & succulent shelled)	FLR (GPL)	1
11774	Linuron	Pea (Edible podded and succulent shelled)	Adpen	1
12028	Uniconazole-p	Basil (GH Transplant)	YAR (GPL)	1
12564	Abamectin	Miracle Fruit	MIR (GPL)	1
12675	Emamectin Benzoate	Bean, lima (Succulent)	MIR (GPL)	1
12757	Abamectin	Beet (Sugar)	MIR (GPL)	1
12816	Linuron	Onion (Dry bulb)	Adpen	1
12902	Flutolanil	Carrot	MIR (GPL)	1
12903	Flutolanil	Radish	YAR (GPL)	1
12904	Flutolanil	Tomato	YAR (GPL)	1
13027	Metribuzin	Potato	Adpen	1
13092	Norflurazon	Clover (Seed Crop)	GPL	1
13179	Benzovindiflupyr + Difenoconazole	Coffee	Adpen	1
13295	GF-4031	Cherry	EUR	1
13311	Flupyradifurone + spidoxamat	Hops	STR	1
13355	GF-4031	Strawberry	EUR	1
13463	Glufosinate	Peanut	Adpen	1
13530	Uniconazole-p	Mint (GH Transplant)	YAR (GPL)	1
13732	Linuron	Mint	Adpen	1
13733	Linuron	Stevia	Adpen	1
13734	Linuron	Onion (Green)	Adpen	1
13741	Mefentrifluconazole	Broccoli	BASF	1
13779	Mefentrifluconazole	Cabbage	BASF	1
13831	Linuron	Basil	Adpen	1
13832	Linuron	Sweet potato	Adpen	1
13833	Linuron	Bean (Dried Shelled)	Adpen	1
13928	Abamectin	Sugar beet storage stability	GPL	1
			Total	31

IR-4 Project

Backlog Graph Post MIR



Summary

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

-Does not include 31 studies sent to contract labs for completion

-Total backlog = 39, slightly less than July (46) and March (42)

-Current situation is unsustainable – Further discussions on how to eliminate the backlog are ongoing.

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

Resources still being used to address quality of data for MIR and YAR and will continue for foreseeable future

IR-4 Project

Thank You!

IR-4 Project

Review of Backlog Policy

Presenter: Debbie Carpenter



Review of Backlog Policy
October, 2025

Debbie Carpenter

Outline

- Backlog Policy – Brief History
- Backlog Policy – Current Status
  - Definition of a Backlog
  - Strategy for Preventing Future Backlogs
    - Better Planning
    - Better Communication and Transparency
  - Consequences for Backlog
- What Happened?
- Next Step – Revise the Policy or our Approach?

IR-4 Project

Backlog Policy – Brief History

Intent was to address the backlog successfully.
Backlog Policy was approved at October 2022 PMC meeting – Version 1.0, 10/28/22
Is included in the Lab Guidance document
Is not a stand-alone document with signature(s) and date.

Definition of a Backlog

Definition - Analytical work should be done within 12 months after the last batch of field samples are received by a lab.

Exceptions are listed in the policy – generally not being used

- HQ management reprioritization of study timeline – IR-4 working on studies we cannot submit as holding them further will not address the backlog.
- Unable to receive standards from registrant – in a few cases lack of reference standards has held up lab analyses, but changed with need to do method validation before spiking storage stability samples
- Government or University shutdown impacting IR-4 and/or ARS operations –hasn't been an issue recently, and time period not defined? One day?

IR-4 Project

Strategy for Preventing Future Backlogs

Better Planning

- A Success – labs are assigned based on previous experience and expertise
- Not successful
  - Doing method development before samples arrive – difficult while in a continuing backlog.
  - Management assure that personnel, resources….are available.
  - Management evaluate status of labs at Spring PMC meeting – may labs accept outside work?

IR-4 Project

Strategy for Preventing Future Backlogs

Better Communication and Transparency

- Partially successful - Foster a culture where timelines are met – the emphasis is on the timelines, but backlog continues.
- Cap time for method development to 3 months
  - Success - LRDs are reaching out to others
  - Not successful - Options to transfer to another IR-4 lab or contract lab are not viable.
- Use of color codes has not been implemented -

Consequences for Backlog

Policy indicates a note will be sent by National Lab Director requiring formal response for backlog studies. Response by lab director to move forward and meet study timelines. This has not been done.

Instead, National Lab Director meets with each LRD monthly at a minimum and backlogged projects are discussed.

Documentation not generated - no clear solutions.

What Happened?

The intent of the backlog policy was to provide guardrails and eliminate the laboratory backlog. Over the past three years, there has been consistent emphasis to eliminate the backlog, and we have not been successful.
What happened?
1)Lab shutdowns – MIR and YAR
2)Difficult to analyze actives – chemistries that no one will take resulting in need for contract lab at high cost. Yet, stakeholders prioritize these chemistries.
3)Need for guideline storage stability data. Current approach is to analyze each study individually. Modify approach?

IR-4 Project

What Happened?

4)Transfers from other labs, including those shutting down - a lab helping out the program should not be penalized in the backlog count.

5)At stakeholder request, taking on difficult matrices like hemp.

IR-4 is at a tipping point where we need to address how the capacity of the labs fits the capacity of the field.

Next Steps – Revise the Policy?

Does revising the backlog policy take us where we need to go? (Suggest discussion with Liwei, Alvin, Matt, Debbie and other volunteers.)

There is no silver bullet. We have cut the number of residue projects for 2026.

Suggest revising our approach and determine additional concrete solutions to address causes.

Revise the Approach?

This will require hard choices. For example,

Does a difficult matrix cost more priorities at the FUW?

Will IR-4 support stakeholders selecting active ingredients that are difficult to analyze?

Consider modifying how we handle the guideline requirement for storage stability, including contract labs.

Consider whether studies that cannot be submitted in the near future should be given the same priority for lab completion and counted in the backlog count.

IR-4 Project

Next Steps – Revise the Policy?

If the desire is to revise the current policy suggestions are below.

1)Consider whether a stand-alone, signed and dated policy is desired.

2)Consider modifying definition of backlog to include not only what is late, but transfers from other labs, waiting for storage stability time to elapse etc.

3)Re-examine exceptions to add boundaries.

Next Steps – Revise the Policy?

4)Consider whether there are viable options to complete a study past the 3 month method development timeline.
5)Address whether color coding is desired, and how to implement when multiple studies are currently backlogged.
6)Address whether documentation is desired, and what options the LRDs currently have to remove the backlog.

Thank You!

IR-4 Project

IR-4 Laboratory Guidance Document



Dr. Matt Hengel (Date)
Chair, Project Management Committee

Dr. Douglas Buhler (Date)
Chair, Administrative Advisors

Dr. Jerry Baron (Date)
Executive Director, IR-4

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Attachment 4 Checklist for Review of Analytical Summary Reports 240

IR-4 Laboratory Guidance Document

Introduction

This Guidance Document is designed to provide consistency and to facilitate communication between the IR-4 Laboratory Research Directors (LRDs), Regional Directors (RDs, management), Quality Assurance Units (QA), and the IR-4 Study Directors (SDs). This document will serve as a resource for all facets of IR-4, through designating responsibilities and providing guidelines for implementation of procedures, to ensure that all studies conducted by IR-4 meet EPA Good Laboratory Practice (GLP) regulations. Once this document is approved by the IR-4 Project Management Committee, it becomes an official policy document for the conduct of studies across all IR-4 laboratories.

The main areas of attention in this document include personnel responsibilities in relation to IR-4 residue work; definitions and a significant section regarding lab operations with emphasis on sample handling and storage; sample processing; analytical method validation; sample analysis and extract storage; storage stability studies; communication with the study director; and the Analytical Summary Report. This document will also provide guidance for contract labs and will be used as a training tool with regard to IR-4 analytical work.

Please Note: Paragraphs formatted with *italics* are taken directly from the "Operational Handbook of IR-4". Please refer to the latest version of the Operational Handbook for any potential updates.

Original Committee members:

Daniel Kunkel, IR-4 Headquarters, Associate Director (Chair)
Debbie Carpenter, IR-4 Headquarters
Matt Hengel, Western Regional Laboratory Coordinator, University of California Davis
Wayne Jiang, North Central Regional Laboratory Coordinator, Michigan State University
Christopher Lam, North Eastern Regional Laboratory Coordinator, Cornell
Jim McFarland, Western Region QA Coordinator, University of California Davis
Marion Miller, Western Region Director, University of California Davis
Jau Yoh, Southern Regional Laboratory Coordinator, University of Florida

Review Conducted by Analytical Chemists Advisory Committee (AC-AC) and the following:

Debbie Carpenter, Associate Director for Regulatory Sciences & National Laboratory Director, IR-4 Headquarters
Matt Hengel, Western Region Director and Western Region Laboratory Coordinator, University of California Davis
Tamara Snipes, USDA-ARS, Tifton, GA
Todd Wixson, USDA-ARS, Yakima, WA
Gail Mahnken, Southern Region Laboratory Coordinator, University of Florida
Yavuz Yagiz, Southern Region QA Coordinator/Officer, University of Florida
Alex McFall, University of California, Davis
Fran Fletcher, USDA ARS, Tifton, GA
Faradeh Rehfield, USDA ARS, Yakima, WA
Stephanie Long, University of Florida
Christina Dineen, IR-4 Headquarters

Responsibilities

IR-4 Headquarters (HQ): *Staff coordinate the program among the regions and USDA-ARS, and provide functions including:*

1) *GLP oversight including Study Director and Quality Assurance.*
2) *Prepare research protocols.*
3) *Review, analyze, and archive raw data.*
4) *Prepare, review, and submit petitions to establish and maintain tolerances.*
5) *Interact with EPA and cooperating registrants.*
6) *Maintain a database to track projects.*
7) *Oversee Manufacturer and Contract Laboratories*

The HQ office is administered by an Executive Director (Management Representative).

Regional Research Programs: *Each Regional Program is administered by a Regional Director who has overall responsibility for GLP compliance at the regional level. The Regional Director has Regional Laboratory, Field and QA Coordinators who work with state scientists within their region and provide them with research support.*

1) *Regional Laboratory Coordinator (RLC): Oversees and coordinates regional and some contract laboratories, conduct analyses to determine test substance residues on crop samples.*
2) *Regional QA Coordinator: Monitors the field and laboratory operations in each region to assure that they are meeting GLP requirements.*

ARS Programs Research Personnel: *The ARS Program is administered by an ARS National IR-4 Director who has overall responsibility for GLP compliance at the ARS Facilities. The ARS National IR-4 Director supports USDA-ARS residue laboratories and scientists (Laboratory Research Directors) that conduct analyses and determine test substance residues on crop samples. QA for these facilities is provided by other IR-4 QA and contract QA.*

Definitions

GLP Definitions

Archives*: All raw data developed by the IR-4 program will be archived as required under 40 CFR 160.190. Archivists will be designated by the Executive Director for IR-4 HQ and an index of archived laboratory data from the RLCs will be sent periodically to the HQ Archivist.*

Protocol*: The regulations require an approved written protocol for each study. The SD is responsible for the development of the protocol, which is prepared in accordance with the information as outlined under 40 CFR 160.120. Protocols will contain both the field and laboratory phases of each study and detail the proposed sites for the research. The regulations require that the protocol be approved by the SD and sponsor by signing and dating. The Chair of the PMC (sponsor) delegates approval of the protocols to the Executive Director or his/her designee.*

Quality Assurance Unit: *The QA unit will conduct facility inspections at all IR-4 test locations and conduct critical phase inspections of each study at intervals adequate to ensure study integrity. All QA audits from facility and critical phase inspections will be provided to the appropriate SD and Management (IR-4 Executive Director or designee) for review, appropriate response and corrective action, and signature. Those reports that require action may be forwarded to the Regional Directors as necessary. The HQ QA Manager will maintain a copy of the Master Schedule for all IR-4 studies.*

Sponsor: *The sponsor is the person who initiates and provides financial or other support for a study. The IR-4 Project Management Committee acts as sponsor for IR-4 studies and has designated the Executive Director as sponsor for the purposes of GLP. The Executive Director may delegate individuals to act as Sponsor Representative to sign the protocol, etc.*

Study: *An experiment conducted at the IR-4 Research Facilities (or contract facilities) to determine the magnitude of the residue (test substance) in or on a given commodity to provide the sponsor with residue chemistry data to support a pesticide tolerance.*

Study Director: *The SD represents the single point of study control, and is responsible for the overall conduct of the study. The accountability provided by a single SD (who plans, oversees, and controls the interpretation, analysis, documentation, and reporting of the results) is one of the most important aspects of the GLP standards. For IR-4 studies, the SD oversees the research of FRDs and LRDs who are responsible for carrying out the field and analytical duties. The RLCs, RFCs, and ARS National IR-4 Director assist the SDs in meeting their responsibilities.*

Testing Facility: *IR-4 HQ serves as the testing facility for the purposes of GLP. The Executive Director will represent testing facility management, and the SDs and QAU will report to the Executive Director.*

IR-4 Definitions

Laboratory Research Director (LRD): *A person with sufficient training and experience to be able to conduct the laboratory analysis and appoint adequate personnel to assure this function will be carried out for all studies. The LRD will report all deviations from the protocol or the SOPs to the SD.*

Quality Assurance Coordinator (QAC) and Officers (QAO): *These persons, designated by the Regional Director or Executive Director, report the findings of their audits to the SD, to the Executive Director (Testing Facility Management) and to other research associated personnel. The QAC/QAO will monitor studies, including facilities, equipment, personnel, methods, practices, records and controls, for compliance with GLP. The QAU reviews the final report to assure that it accurately reflects the raw data of the study and prepares and signs a Quality Assurance Statement noting dates the inspections and findings were reported to the SD and SD Management.*

Regional Laboratory Coordinator (RLC): *This person assigns laboratory-testing sites within his/her region for residue analyses conducted by the regional laboratory and private contract laboratories.*

References

Good science is critical to successfully completing the analytical portion of any study. However, it is just as important for SDs and LRDs to be aware of the impact of the following references.

These references provide a framework for all IR-4 study related work:

Operational Handbook of IR-4 (current version).

Good Laboratory Practice Standards, 40 CRF Part 160, August 17, 1989.
Food and Feed Crops of the United States, Markle et al. 1998.
OPPTS 860 Residue Chemistry Test Guidelines including:
OPPTS 860.1000, Background

OPPTS 860.1340, Residue Analytical Method
OPPTS 860.1380, Storage Stability Data
OPPTS 860.1500, Crop Field Trials
OPPTS 860.1520, Processed Food/Feed

Laboratory Operations

Standard Operating Procedures

The development of a comprehensive set of SOPs that address the development, monitoring, and reporting of data from specific study phases conducted at the research test site is the responsibility of each LRD at that site.
RLCs and the ARS National IR-4 Director and/or ARS Facility Research Leader (or designee) provide guidance for and approval of SOPs. This laboratory guidance document is meant to serve as a policy document that defines the minimum standards for the IR-4 laboratories and the IR-4 designated USDA-ARS laboratories. Individual laboratory SOPs should reflect at least the minimum standards as outlined in this document.

Standards and Solutions

Obtaining Standards: Current IR-4 policy requires that all reference standards are characterized under GLP before the completion of the study (signed by the SD), but preferably before the start of analysis. Due in part to the large number of registrants IR-4 works with, obtaining GLP standards can be difficult. It is therefore recommended that the LRD initiate discussions with the cooperating registrant as soon as possible after initiation of the study. If standards cannot be acquired in a sufficient time frame, then the LRD is directed to contact the SD or Registration Manager at IR-4 HQ to seek assistance in obtaining standards. The purity value stated on the Certificate of Analysis should be used for all calculations of the standard concentration. In cases where a non-GLP standard is required to complete the analytical phase of the project, contact the SD. The SD, in conjunction with Testing Facility Management (TFM) must approve the use of non-GLP standards.

Characterization of Substances: ***Analytical Reference Standards:*** *Documentation of the characterization of the standards used in the analytical trial should be obtained by the Laboratory Research Director and a copy sent to the SD along with the Analytical Summary Report of the trial.*

Reagents and Solutions: *The GLP standards require all reagents and solutions in the laboratory area to be labeled to indicate identity, titer or concentration, storage requirements, and expiration date. This requirement can be difficult to accomplish when there is a mix of IR-4 and non-IR-4 personnel utilizing the laboratory and sharing the chemicals or when the chemical is stable and has a long shelf life. The following is to be used as a guide for meeting the labeling requirement:*

1) *Identity can be the common name(s), CAS number or chemical name of the reagent or reagents in solution or mixture.*
2) *If the labeling of the original container provides the identity, concentration, storage requirements (if any) and expiration date or shelf life, no additional information is needed. If the labeling does not contain this information, than a supplemental label containing the missing information should be permanently attached to the container where it does not obscure other critical information.*
3) *All mixtures of chemicals prepared by laboratory personnel for use in IR-4 trials should*

have labels with the information as shown in 2 above.

4) *Expiration dates for stable chemicals should be determined by the Laboratory Research Director following methods outlined in their SOPs.*
5) *Adequate precautions should be taken to avoid contamination of reagents and solutions so that purity of their content is preserved.*

Standard Solution Stability: If no stability information is available from the registrant or within the reference method, in-house stability data must be generated. The data generated must be valid for the solvent composition and storage conditions used, and analysis must be repeated if those conditions change. IR-4 will define a solution as stable for the interval measured if there is ≤ 10% difference between a minimum of five replicate injections each of fresh and aged solutions. Labs are encouraged to reach out to others to see if there is any valid stability data that can be shared. Generally, if no stability data exists, it is recommended to generate stability data for individual stocks, mixed fortification solutions (if solvent composition is different from the stock solvent composition), and calibration standards. In general, testing the highest calibration solution is sufficient. Any time solution composition is changed (i.e. % aqueous in a mixed solvent), solution storage stability data should be generated.

Sample Receipt, Processing and Storage

Maintaining a representative sample and maintaining sample integrity are the important considerations to keep in mind during sample receipt storage, processing, and extraction/analysis (see Attachment 1).

Sample Receipt: Samples are generally received from a carrier such as ACDS or FedEx. For receipt of samples from an overnight air express carrier such as FedEx, it is critical that the lab know a shipment is in transit. If the shipment is not received as expected, laboratory personnel will follow-up to track the shipment.

When samples are received, laboratory personnel must check the condition of the samples to ensure they were kept frozen as well as verify receipt of the correct samples by checking sample identification and matrices against the shipping papers. Unique laboratory numbers are assigned and recorded with cross reference to field sample IDs. Shipping forms (e.g. eFDB Part 8C) received with the samples are used to record the cross reference. The SD, RFC, and FRD are notified when samples are received, and any problems with the shipment are to be brought to their attention.

Sample Processing: For information regarding sample preparation, size, and homogeneity, see Attachment 1: Sample Processing Document. Great care is taken in the field to collect samples from all areas of the plot, so that the sample is representative of the whole field. When processing the samples, the entire sample must be processed and thoroughly mixed. If this is not possible, guidance from the Study Director and/or Registration Manager must be sought. Sample integrity is generally maintained by processing samples with dry ice. The study analytical data must document how representative samples were prepared.

Storage: Storage of samples is in accordance with the protocol requirements and SOPs. To prepare for the loss of power or a freezer failure, consideration should be given to the availability of backup freezers and dry ice, generators (power backup) and spare parts. Temperature monitors, alarms, and established lines of notification are methods for providing the LRD with information on the temperature of the storage areas. For a longer-term power outage, samples may need to be transported to another location to maintain sample integrity. These samples represent a significant investment and their integrity should be safeguarded accordingly.

Working Method, Validation and Modifications

IR-4 methods are provided initially by the cooperating registrant (reference method). Given the number of commodities IR-4 works with, it is likely that each method will require some modification to work effectively. It should be noted that once these methods are modified for other commodities, these methods become the enforcement method for EPA. Significant changes to the initial working method may trigger an independent laboratory validation (ILV, OPPTS 860.1340), and thus are not encouraged unless needed to develop an adequate method for the specific matrix. The LRD should discuss "significant changes" with the SD and/or National Laboratory Director (NLD)[1] prior to making the change. During the course of method development, LRDs must be mindful of time and resources spent on a particular project. As part of the Backlog Response Policy (Attachment 2), a series of checkpoints have been developed to help keep projects on track and to identify potential solutions on difficult projects before falling into a backlogged status. The checkpoints are designed to keep all relevant groups (AC-AC, NLD and SD) informed of the method development progress such that ideas and experiences from the greater IR-4 community can be leveraged.

Other considerations*:* Approval for significant changes to the reference method must be requested from the SD, NLD and registrant. Depending on the number of proposed changes and familiarity with the method, the laboratory should keep in mind that such changes will need to be dealt with well in advance of analysis, so that when the samples are received analysis may proceed without delay.

Extraction*:* In most cases the extraction solvent and procedures must remain the same as the reference method. Sample weights and extraction volumes must stay proportional to the original method. However, in some cases, the ratio of extraction solvent to sample weight can be increased to improve extraction efficiency (e.g., extracting high K_{ow} pesticides from high fat/oil content crops). Exchange of equipment can be made only when the equipment is carrying out the same basic function as noted in the method (for example tissuemizer and polytron). Other substitutions (from tissuemizer to shaker tray) should be discussed with the registrant providing the reference method and in consultation with the SD and the NLD at HQ.

Clean-up steps*:* EPA has noted that as long as the extraction procedures are the same, clean-up steps may be added or removed. It should also be noted that removing an excessive number of steps may result in excessive wear and tear on the column and instrument. The impacts of removing clean-up steps from the method, such as matrix enhancement effects, must be evaluated as chromatography must be clean and sharp. Modifications should be discussed with the SD, NLD as well as the registrant so they can share their experiences. Chemists should also consider cost and time relating to removal of cited clean-up steps.

Detector*:* Using LC-MS/MS has generally become the norm and essentially all of the IR-4 laboratories have at least one instrument. It is likely that any new equipment purchases will be directed toward using this technology. Therefore, replacing the detectors noted in the reference method with LC-MS/MS should have minimal effect on the method while providing better quantitation and confirmation.

Working method approval and validation data*:* Current minimum protocol requirements indicate that the LRD will send the SD the working method and recovery data from the method validation, and that the SD (or designee) must approve the working method prior to treated sample analysis. The SD must acknowledge that the method and data area acceptable. If recoveries are outside of the protocol

[1]The role of the NLD is to provide greater consistency from IR-4 HQ by utilizing personnel with greater chemistry experience.

range but consistent (i.e. standard deviation ≤ 10%), the Study Director may choose to accept the validation data.

Sample Analysis and Extracts

Sample Analysis: As noted in the protocol, each analytical set will have at least one concurrent recovery sample. Typically, the fortification levels will reflect the expected residues in the treated samples. In cases where no residues are expected, fortifications should be at the lowest level of method validation (LLMV). Treated sample residues that are between the limit of detection (LOD) and LLMV can be reported at the discretion of the LRD/SD. At a minimum, the instrument response/area counts must be presented. A calculated residue value can be reported with a note that it is below LLMV.

IR-4 laboratories agree that duplicate injections for each weathered sample should be used. If there is a study with a large number of samples, the LRD may consider doing single injections; however, it should be noted that duplicate injections provide a number of benefits such as enhanced instrument stability and better detection of "bad injections" in real time, allowing the chemist to respond to situations more quickly and efficiently. LRDs will have the appropriate SOPs in place to define pass or fail criteria.

Laboratory personnel should be mindful when unusual results are obtained and notify the SD immediately. (Lab personnel may want to re-extract and re-analyze samples to confirm prior to notification of SD). Examples of unusual situations include samples that have no residues compared to other weathered (field) samples from treated plots, decline samples where no residues are detected, samples from untreated control plots with residues, and if residues from samples taken from the same treated plot have measurable residues and the values for each sample vary by a factor of 5X or more.

Extracts: "Registrants are advised to routinely include the storage of extracts, unless their standard laboratory practice is to analyze extracts on the same day as they are obtained" (860.1380). Storage stability of extracts must be demonstrated for conditions under which extracts were stored if extracts are not analyzed on the same day as they are obtained or unless stability is demonstrated in the reference method. Always run samples with concurrent recoveries to demonstrate extract stability.

Storage Stability

IR-4 carries out modified guideline storage stability studies as outlined in 860.1380. Our purpose is to show the samples are stable under the storage conditions used. Shortly after method validation, sufficient replicate samples covering all potential time points are fortified (at a level specified in the protocol) and three of those samples are analyzed alongside a minimum of two concurrent fortifications to serve as a "Day 0" stability time point.

For many compounds, the registrant may have adequate storage stability data available. When no data exists or samples cannot be analyzed within the time period where data already exists, a full storage stability study will be conducted. Although there are no strict requirements on the number of sampling intervals that should be examined in a storage stability study, typical IR-4 storage stability studies will include the 0-day, end point, and three intermediate time points to show stability throughout the storage period, or to show how much residue is lost at various time points.

If defined stability data exists from the registrant, and the lab is confident the samples can be analyzed within the allotted time, the analyst can request to prepare a minimum of 9 storage stability samples, three for Day-0, three to cover the full storage interval, and three to be held for potential

long-term analysis. In some cases, the SD may be able to waive the storage stability requirement. Documentation of the waiver by the SD is required.

The fortification standard solution used for stability sample preparation should be the same solution used for method validation. If not, the fortification standard used must be used to spike all storage stability samples. IR-4 will continue to work with EPA and the manufacturers to determine if a stability study is necessary. Ultimately, IR-4 will strive to conduct fewer storage stability studies where possible.

Communication of Results with SD:

Project Initiation and Response Needed to Proceed: If complications arise during R&D, the labs should contact the SD and the SD can use this notification as an opportunity to contact the registrant and check for any method revisions or other pertinent updates. Important modifications to the working method and levels of fortification should be made clear at this point. Upon successful method validation, and prior to treated sample analysis, the signed working method and validation data must be sent to the SD, and the SD (or designee) must approve the working method prior to treated sample analysis. If concurrent fortification recoveries are not within the approved protocol range (70-120%), the SD must acknowledge that he/she is aware the data are out of range, accept the recoveries, and that the analysis may proceed. The SD should make every effort to respond within 2 working days. Recognizing that study directors have other responsibilities including traveling, the lab will need to provide time for the study director to respond in these situations. For urgent needs, or situations where the SD is not able to respond within 2 working days, approval to proceed with analysis may be sought from the NLD (or other designee). However, the SD must also provide approval when he/she becomes available. LRDs and analysts should be ready to discuss possible causes for problems observed as well as proposed solutions. Practical options presented to the SD will often lead to a clearer, more efficient path forward.

Routine Results: The LRD (or designee) will provide routine updates to the SD (e.g. residue analysis spreadsheet, residue result summaries) on a regular basis, along with background information and assessment of the data. The lab, in consultation with the SD, will decide the frequency of updates, based on their own operations. At a minimum, it is expected that the residue results will be shared with the SD as soon as possible, once all samples for the study have been analyzed. Acknowledgment of their receipt from the study director is expected.

Data Quality

The Mantle of Responsibility: IR-4 must continually strive for the highest levels of data quality and integrity, and all members of the program are responsible for the success of this mission. Chemists must ensure that the entirety of their work is reproducible and defensible in the face of an EPA audit. All data generated must therefore meet requirements of the protocol, GLP, applicable OPPTS 860 Guidelines, SOPs, and this document. LRDs are responsible for the careful review and approval of all project data, as well as the proper initial training of lab personnel. SDs must ensure that protocols are clear in their requirements and must remain updated on the status of all ongoing projects. All parties involved must maintain clear, honest, and open communication throughout the process. In addition, all parties must continue to educate themselves on new processes, developments, and applicable regulations.

Research and Development (R&D): Over the course of method development and refinement, care should be taken to document the different analytical approaches used, their results, and proposed next steps. Maintaining a clear record of the research process is beneficial for future projects involving similar commodities/chemistries, and such a record may be vital in the defense of method design/generated data

during EPA's data review. All generated R&D data sets should be retained in at minimum a digital format, though some data sets (e.g., in-house standard stability data checks) may also be retained in a dated and initialed paper form for future use and potential archiving. This data may also need to be included in the ASR as justification of a change in acceptance criteria for recoveries.

R^2 values and Reproducibility: To maintain a level of consistency across all IR-4 regions, minimum data quality metrics have been set for R^2 values and injection reproducibility. Analytical sets that fail to meet these thresholds must be rerun. These are:

1. All generated calibration data subjected to linear regression must yield an R^2 value ≥ 0.985.

2. Reproducibility between replicate injections of the same sample must be less than 20%.

Matrix-Matched (MM) Standards: Difficult matrices may impose significant enhancement or suppression effects on analytes of interest. These problems are typically solved with a more thorough sample cleanup prior to analysis. However, in cases where matrix effects cannot be overcome, or when the effects vary substantially from field to field, the use of MM standards may be beneficial. Seek LRD and SD approval prior to use of MM standards if MM standards are not included in the reference method, and provide sufficient justification for their use (e.g., direct comparison of results using clean vs. MM standards). In general, a difference in concurrent recovery samples of more than ± 20% between clean and MM standards can be used as an adequate justification for use. Verify that the control samples used for MM standard preparation are relatively clean prior to analysis. If significant (>20%) differences in matrix effects are observed between fields, separate MM standards must be prepared for each field analyzed in order to account for field variability. Ensure that each MM standard is properly numbered and recorded according to GLP and SOP requirements.

Internal Standards: Internal standards should be used only if specifically required by the reference method or registrant. The SD should be contacted prior to any decision regarding use or disuse of internal standards.

Manual Integration: The use of manual integration is discouraged due to the subjective nature of individually drawn baselines. If analyte peaks are not being accurately integrated, analysts should first make every attempt to adjust the software integration parameters to fully capture peaks in a consistent manner. However, when no set of integration parameters will fully and accurately quantitate the analyte peak (e.g., missing fronts and tails, dropped baselines, inclusion of coeluting peaks or baseline noise), manual integration becomes necessary for proper data analysis. Whenever manual integration is used, that data must be differentiated from computer-generated integrations. In software suites like Agilent MassHunter, the color of the peak changes, and an asterisk is added. Other options include handwritten notes, initialed and dated, on the manually integrated peaks, or computer-generated codes denoting manual integration. The LRD is responsible for proper manual integration training of laboratory personnel and must review all data packets to ensure that baselines (both computer-generated and manual) are properly applied.

Calculation of Parent Equivalents: Protocols may require residues to be reported in parent-equivalents. If asked to convert all residues to parent-equivalents, use the molecular weights provided by the Certificate of Analysis (CoA) or registrant to ensure accuracy. Any inconsistencies or other questions should be discussed with the SD.

Analytical Summary Report

A sample ASR is provided in Attachment 3.

Training

This document will be used as a training tool for new Laboratory Coordinators, IR-4 chemists, QA officers and Study Directors. Contract and company laboratories may also use this document as a tool to provide guidance for residue analysis. Additional online and in-person training on GLP regulations, advancements in laboratory technologies/techniques, and proper laboratory safety should be conducted when possible and made a priority for continuing education of staff across all labs.

Laboratory Guidance Document review: Target review is for every three years. Please note that significant material has been taken from the "Operational Handbook of IR-4" and updates to that document will affect this document as well. Please refer to the latest version of the Operational Handbook for any potential updates.

Explanation of Attachments:

Attachment 1: Sample Processing Document

This instructional guideline has been prepared to aid in ensuring uniformity and consistency among IR-4 analytical facilities when preparing raw agricultural commodities (RAC) for *Magnitude of the Residue* determinations. The attachment provides information regarding sample preparation, size and providing homogeneous representative samples. Great care is taken in the field to collect samples from all areas of the plot so that the sample is representative of the whole field, and this guideline will help ensure that samples remain representative when processed in the IR-4 laboratories.

Attachment 2: Backlog Response Policy

This policy defines when a project is considered backlogged and provides guidance on preventing future backlogs. This policy also caps method development to 3 months.

Attachment 3: Sample Analytical Summary Report.

This example report is provided to illustrate a typical IR-4 Analytical Summary Report and the critical elements that must be included. The tables have been updated to help aid final report preparation. Recently, EPA has begun to request that metabolite residues be expressed as parent equivalents, please refer to the protocol for specific reporting requirements. Please note that residues from weathered samples are to be reported using a minimum of 2 significant figures. Also, it is imperative that all of the pages of the ASR be readable.

Attachment 4: Checklist for Review of Analytical Summary Reports

This checklist is being provided as reference information to assist in the internal quality evaluation of analytical data. The checklist can be used to identify and ensure that appropriate information is included in the final reports submitted to EPA. The checklist identifies items which must be brought to the study director's attention in order for the study director to carry out his/her responsibilities under GLP.

Attachment 1

Sample Processing Document

GUIDELINES FOR THE PREPARATION OF RAW AGRICULTURAL COMMODITY SAMPLES FOR RESIDUE ANALYSIS

PURPOSE:

This instructional guideline has been prepared to aid in ensuring uniformity and consistency among IR-4 analytical facilities when preparing raw agricultural commodities (RAC) for *Magnitude of the Residue* determinations.

This guideline contains general directions for:

- obtaining homogeneous RAC sub-samples in a safe manner with minimum risk of residue cross-contamination ("General Procedures" section A)
- processing guidelines for specific crop groupings with specific instructions on inspecting and what portion of the RAC is to be prepared for residue determination ("Guidelines for Determining Portion of RAC to be Analyzed" section B)
- uniform sample preparation and comminuting procedures (i.e., pulverizing/ reduce to powder) for whole and sub-sampled RACs ("Guidelines for Sample Preparation" section C)

Definitions of Terms Used in this Guideline:

Raw Agricultural Commodity
Fresh fruits, whether or not they have been washed and colored or otherwise treated in their unpeeled natural form; vegetables in their raw or natural state, whether or not they have been stripped of their outer leaves, waxed, prepared into fresh green salads, etc.; grains, nuts, eggs, raw milk, meats, and similar agricultural produce. Does not include foods that have been processed, fabricated, or manufactured by cooking, freezing, dehydrating, or milling (40 CFR 180)

Sample
The amount of individual agricultural commodity units (e.g. specific number of fruits or tubers, a set weight of grain, etc.) randomly selected from a plot which may be composited for pesticide analysis (OPPTS 860.1500)

PROCEDURE:

A. General Guidelines

Persons given responsibility for processing agricultural crops (Processor) will be fully trained in properly processing agricultural commodities and also in the safe use of processing equipment and cryogenic materials. Proper ventilation is mandatory when working with cryogenic materials such as liquid nitrogen and carbon dioxide. It is the responsibility of the Processor to immediately notify her/his immediate supervisor and/or the Laboratory Research Director if unsafe working conditions exist.

Processing equipment often operates at high speeds to pulverize/powder the RAC. This equipment can be hazardous and should be routinely checked for proper operation before processing agricultural commodities.

The sample should not be brushed, stripped, trimmed, or washed except to the extent that these are commercial practices before shipment or to the extent allowable (see 40 CFR 180 or the Pesticide Assessment Manual (PAM)). Details for cleaning or trimming specific crop types are outlined under **"Guidelines for Determining Portion of RAC to be Analyzed" section B** and Appendix 1. **In each case, the protocol and Study Director will be consulted to clarify any potential problems prior**

to sample processing.

The total sample should be processed whenever feasible. If the sample size is too large to process, a representative sub-sample of each component part should be taken (e.g., 1/4 of each cantaloupe from the original residue sample bag for maceration). Sub-sampling of the component parts will be done in a manner to represent the residue distribution to be found on all surfaces of the whole vegetative part. Details for specific crop types are outlined under "**Guidelines for Sample Preparation**" **section C. If sub-sampling must occur, due to large sample size or unit size, the Study Director will be consulted prior to sample processing.**

The order in which samples are processed should be chosen to minimize the potential for residue cross-contamination. For each trial location processed on the same day, untreated samples should always be processed first. Treated samples with the lowest application rate and the longest pre-harvest interval (PHI) should follow. Samples with the highest application rate and the shortest PHI should be processed last. In addition, crop fractions should also be considered (e.g. nut meat fractions should be processed before hull fractions).

If cryogenic materials are required, the pulverized sample can quickly liquefy and separate at room temperature soon after processing. All attempts should be made to immediately transfer the sample to a properly labeled sampling bag and place in frozen storage.

Processing equipment should be thoroughly washed and rinsed with distilled water and acetone or methanol before attempting to process the next sample. Cleaning should be performed even if the next sample is a replicate from the same treatment location or a replicated control sample.

B. Guidelines for Determining Portion of RAC to be Analyzed

40 CFR 180 specifies that the sample taken should be of the whole raw agricultural commodity (RAC) as it moves through interstate commerce. In certain cases, the portion to be analyzed for a residue tolerance may not represent the whole RAC. Instructions on what portion of the RAC should be analyzed are provided for nine individual food commodities (*e.g.*, bananas) and crop group commodities (*e.g.*, root vegetables) in this regulatory guideline. To fill this void, the FDA has provided additional guidance for RACs that fall under a more complete crop groupings list (see 40 CFR 180.34 (f)). The portion of the sample to be analyzed as described under PAM Volume 1 takes into account practical considerations of sample preparation. Appendix 1 on page 4 (Table 102-a: *Portion of Raw Agricultural Commodity to be Analyzed for Pesticide Residues*) provides a compilation of EPA regulations and FDA directions to be followed for RAC preparation. If sample processing procedures for a particular RAC are not specified under the above crop grouping guidelines, or in the protocol, additional guidance from the Laboratory Research Director and IR-4 Study Director approval will be sought before preparing samples for residue determination.

C. Guidelines for Sample Preparation

The relatively small 2.5 to 100-gram laboratory sample taken from the whole RAC must represent the entire treated or control sample. Often these samples are *bulky* or can be comprised of *a few large units or many smaller items*. Whenever feasible, the total RAC sample should be pulverized and a homogeneous 2.5 to 100-gram sample taken to ensure uniformity. Processing the entire sample may not always be feasible. Guidelines are provided below to aid in preparing representative residue determination samples from bulky, large unit and many small item RAC samples. In addition to the guidelines below, **Table 1** offers examples of current processing practices of several commodities by IR- 4/ARS facilities.

Bulky Samples: For more bulky samples [i.e., Alfalfa (green and dry), Barley, Field Corn (silage, stover), Sweet Corn (forage, husks), Clover Grass, Mint (hay), Oats (forage, fodder, or straw), Rice (plants), Rye, Sorghum (plants), Soybean (plants), Sugar Cane (green and/or dry) Tobacco (green, cured), and Wheat (forage, fodder, or straw)], acquiring the relatively small laboratory sample usually consists of two steps. First, the crop is chopped into smaller size fractions using either a chopping knife or scissors or through use of a large capacity chopper/mixer/grinder such as a spinning bowl or vertical chopper (ie: Hobart HCM-450, 84142, 84145, 84146, VCM-25, or equivalent). The chopped sample is then frozen to a brittle consistency using either liquid nitrogen (LN_2) or dry ice. This frozen material is then processed to a fine consistency using a sample grinder (ie: Hobart 4822 or equivalent). Alternatively, the samples may be first broken or chopped or into smaller size fractions as described above and then thoroughly processed with a cryogen (LN_2 or dry ice) in a spinning bowl chopper/mixer, spinning blade food processor (ie: Robot-Coupe. RSI-6V or 10B) or other food grinder/chopper.

Sub-sampling: Typically, sub-sampling of bulky or heavy units is performed in the field as directed by the Protocol. However, when there are physical limitations for the laboratory processing of the whole sample due to mass or sample size, sub-sampling of the component parts must be done in a manner that ensures the residue distribution is representative of the whole vegetative part. Laboratory sub-sampling should only be performed by GLP trained staff **and in consultation with the Study Director and/or Registration Manager.** If absolutely necessary, this practice must be limited to special circumstances and be conducted by properly trained staff that understands the importance of maintaining a fully representative sub-sample and the risks of possible residue/cross contamination and/or deterioration of the crop matrix. Some examples of representative sub-sampling in the laboratory include:

- Taking a well-mixed portion of a large sample of very small items (berries, nuts, grain, and immature vegetables). This may be necessary due to sample capacity of processing/milling/grinding equipment (i.e., small Hobart/Robot-Coupe choppers, Tekmar Analytical Mills and other similar chopping/grinding devices). For example, a well-mixed 1 kg sub-sample from the 5 kg composited RAC sample bag of coffee beans can be pulverized by the Tekmar Analytical Mill to produce a representative sample.
- For larger items when approximately 12 units may comprise the entire composited RAC (melons, pineapples, squash, see CODEX, reference 3 and PAM section 120c), ¼ of each unit can be separated and composited to produce a representative sample for processing.
- In preparing a homogeneous tree fruit sample, where 6 fruits from each of 4 trees is recommended (CODEX, reference 3), ½ of each unit can be separated and composited to produce a representative sample for processing.
- When the processing or chopping of samples results in rapid degradation or loss of residues during storage, a representative sub-sample shall be processed just prior to analysis. The crop unit number, crop unit size, and the number of analyses will determine the amount of sample to process with dry ice for each analysis.

If there is too much sample bulk to add the entire sample all at once and sub-sampling is not an option, process a portion of the sample, add additional. sample and cryogen (if using), process and repeat until the chopper is full. Bulk bag and repeat processing until the entire sample is chopped. Combine all chopped matrix in the bulk bag, mix well and remove sample for analysis/storage.

Table 1.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
1. ROOT AND TUBER VEGETABLES	Carrot, potato, radish, and sugar beet.	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. If greater than 10 pounds cut each unit in half, returning opposite half to sample bag. Continue until all can fit in chopper. If tops are included, cut with an electric knife. A heavy knife and hammer are useful if sample is too hard.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice)	Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; beet, garden; beet, sugar; burdock, edible; canna, edible; carrot; cassava, bitter and sweet; celeriac; chayote (root); chervil, turnip-rooted; chicory; chufa; dasheen (taro); ginger; ginseng; horseradish; leren; parsley, turnip-rooted; parsnip; potato; radish; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret; sweet potato; tanier; turmeric; turnip; yam bean; yam, true.
1A. Root vegetables subgroup	Carrot, radish, and sugar beet	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. If tops are included, cut with an electric knife. A heavy knife and hammer are useful if sample is too hard.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Beet, garden; beet, sugar, burdock, edible; carrot; celeriac; chervil, turnip-rooted; chicory; ginseng; horseradish; parsley, turnip-rooted; parsnip; radish; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret; turnip
1B. Root vegetables (except sugar beet) subgroup	Carrot and radish	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. If tops are included, cut with an electric knife. A heavy knife and hammer are useful if sample is too hard.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Beet, garden; burdock, edible; carrot; celeriac; chervil, turnip-rooted; chicory; ginseng; horseradish; parsley, turnip-rooted; parsnip; radish; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret; turnip.
1C. Tuberous and corm vegetables subgroup	Potato	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; canna, edible; cassava, bitter and sweet; chayote (root); chufa; dasheen (taro); ginger; leren; potato; sweet potato; tanier; turmeric; yam bean; yam, true
1D. Tuberous and corm vegetables (except potato) subgroup	Sweet potato	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; canna, edible; cassava, bitter and sweet; chayote (root); chufa; dasheen (taro); ginger; leren; sweet potato; tanier; turmeric; yam bean; yam, true
2. LEAVES OF ROOT AND TUBER VEGETABLES (HUMAN FOOD OR ANIMAL FEED)	Turnip and garden beet or sugar beet	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch or smaller pieces or cut with electric knife and then thoroughly mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). If too much sample bulk to add all at once, process in batches until chopper is full as described in footnote 2.	Beet, garden; beet, sugar; burdock, edible; carrot; cassava, bitter and sweet; celeriac; chervil, turnip- rooted; chicory; dasheen (taro); parsnip; radish; radish, oriental (daikon); rutabaga; salsify, black; sweet potato; tanier; turnip; yam, true

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
3-07. BULB VEGETABLES	Onion, bulb and onion, green	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or cut in ~ 1in pieces.	Robot Coupe, Grinder or Hobart with cryogen(LN2 or dry ice). If too much sample bulk to add all at once, process in batches until chopper is full as described in footnote 2.	Chive, fresh leaves; chive, Chinese, fresh leaves; daylily, bulb; elegans hosta; fritillaria, bulb; fritillaria, leaves; garlic, bulb; garlic, great-headed, bulb; garlic, serpent, bulb; kurrat; lady's leek; leek; leek, wild; lily, bulb; onion, Beltsville bunching; onion, bulb; onion, Chinese, bulb; onion, fresh; onion, green; onion, macrostem; onion, pearl; onion, potato, bulb; onion, tree, tops; onion, Welsh, tops; shallot, bulb; shallot, fresh leaves; cultivars, varieties, and/or hybrids of these
3-07A. Onion, bulb, subgroup	Onion, bulb	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or cut in ~ 1in pieces.	Robot Coupe, Grinder or Hobart with cryogen(LN2 or dry ice). If too much sample bulk to add all at once, process in batches until chopper is full as described in footnote 2.	Daylily, bulb; fritillaria, bulb; garlic, bulb; garlic, great-headed, bulb; garlic, serpent, bulb; lily, bulb; onion, bulb; onion, Chinese, bulb; onion, pearl; onion, potato, bulb; shallot, bulb; cultivars, varieties, and/or hybrids of these.
3-07B. Onion, green, subgroup	Onion, green	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or cut in ~ 1in pieces.	Robot Coupe, Grinder or Hobart with cryogen(LN2 or dry ice). If too much sample bulk to add all at once, process in batches until chopper is full as described in footnote 2.	Chive, fresh leaves; chive, Chinese, fresh leaves; elegans hosta; fritillaria, leaves; kurrat; lady's leek; leek; leek, wild; onion, Beltsville bunching; onion, fresh; onion, green; onion, macrostem; onion, tree, tops; onion, Welsh, tops; shallot, fresh leaves; cultivars, varieties, and/or hybrids of these.
4-16. LEAFY VEGETABLES	Head lettuce, leaf lettuce, mustard greens and spinach	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch or smaller pieces or cut with electric knife and then thoroughly mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). If too much sample bulk to add all at once, process in batches until chopper is full as described in footnote 2.	Amaranth, Chinese; amaranth, leafy; arugula; aster, Indian; blackjack; broccoli, Chinese; broccoli raab; cabbage, abyssinian; cabbage, Chinese, bok choy; cabbage, seakale; cat's whiskers; cham-chwi; cham-na-mul; chervil, fresh leaves; chipilin; chrysanthemum, garland; cilantro, fresh leaves; collards; corn salad; cosmos; cress, garden; cress, upland; dandelion, leaves; dang-gwi, leaves; dillweed; dock; dol-nam-mul; ebolo; endive; escarole; fameflower; feather cockscomb; Good King Henry; hanover salad; huauzontle; jute, leaves; kale; lettuce, bitter; lettuce, head; lettuce, leaf; maca, leaves; mizuna; mustard greens; orach; parsley, fresh leaves; plantain, buckhorn; primrose, English; purslane, garden; purslane, winter; radicchio; radish, leaves; rape greens; rocket, wild; shepherd's purse; spinach; spinach, Malabar; spinach, New Zealand; spinach, tanier; Swiss chard; turnip greens; violet, Chinese, leaves; watercress; cultivars, varieties, and hybrids of these commodities

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
4-16A. Leafy greens subgroup	Head lettuce, leaf lettuce, and spinach	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch or smaller pieces or cut with electric knife and then thoroughly mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Amaranth, Chinese; amaranth, leafy; aster, Indian; blackjack; cat's whiskers; cham-chwi; cham-na-mul; chervil, fresh leaves; chipilin; chrysanthemum, garland; cilantro, fresh leaves; corn salad; cosmos; dandelion, leaves; dang-gwi, leaves; dillweed; dock; dol-nam-mul; ebolo; endive; escarole; fameflower; feather cockscomb; Good King Henry; huauzontle; jute, leaves; lettuce, bitter; lettuce, head; lettuce, leaf; orach; parsley, fresh leaves; plantain, buckhorn; primrose, English; purslane, garden; purslane, winter; radicchio; spinach; spinach, Malabar; spinach, New Zealand; spinach, tanier; Swiss chard; violet, Chinese, leaves; cultivars, varieties, and hybrids of these commodities.
4-16B. Brassica leafy greens subgroup	Mustard greens	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or cut with an electric knife.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Arugula; broccoli, Chinese; broccoli raab; cabbage, abyssinian; cabbage, Chinese, bok choy; cabbage, seakale; collards; cress, garden; cress, upland; hanover salad; kale; maca, leaves; mizuna; mustard greens; radish, leaves; rape greens; rocket, wild; shepherd's purse; turnip greens; watercress; cultivars, varieties, and hybrids of these commodities.
5-16. BRASSICA HEAD AND STEM VEGETABLES	Broccoli or cauliflower, and cabbage	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. May need to quarter lengthwise, using opposite pieces prior to mixing to reduce bulk.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Broccoli; Brussels sprouts; cabbage; cabbage, Chinese, napa; cauliflower; cultivars, varieties, and hybrids of these commodities.
6-22. LEGUME VEGETABLES	Bean (Phaseolus spp. or Vigna spp.); one edible podded cultivar, one succulent shelled cultivar, and one dried seed); Pea (Pisum spp.); one edible podded cultivar, one succulent shelled cultivar, and one dried seed); and Soybean, seed	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). For dried peas/beans - grinder type processor, coffee grinder or Robot Coupe.	See subgroups below for all commodities.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
6-22A. Edible podded bean subgroup	Any cultivar of edible podded bean, Phaseolus spp., or Vigna spp.	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Bean (Phaseolus spp.; including, but not limited to French bean, garden bean, green bean, kidney bean, navy bean, scarlet runner bean, snap bean, and wax bean); Bean (Vigna spp.; including, but not limited to asparagus bean, catjang bean, Chinese longbean, cowpea, moth bean, mung bean, rice bean, urd bean, and yardlong bean); goa bean; guar bean; jackbean; lablab bean; vegetable soybean (edamame); sword bean; winged pea, velvetbean; cultivars, varieties, and hybrids of these commodities.
6-22B. Edible podded pea subgroup	Any cultivar of edible podded pea, Pisum spp.	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Pea (Pisum spp.; including, but not limited to dwarf pea, green pea, snap pea, snow pea, and sugar snap pea); grass pea; lentil; pigeon pea; chickpea; cultivars, varieties, and hybrids of these commodities.
6-22C. Succulent shelled bean subgroup	Any succulent shelled cultivar of bean, Phaseolus spp., or Vigna spp.	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Bean (Phaseolus spp.; including, but not limited to lima bean, scarlet runner bean, and wax bean); Bean (Vigna spp.; including, but not limited to blackeyed pea, catjang bean, cowpea, crowder pea, moth bean, and southern pea); Bean (Lupinus spp.; including, but not limited to Andean lupin, blue lupin, grain lupin, sweet lupin, white lupin, white sweet lupin, and yellow lupin); broad bean (fava bean); jackbean; goa bean; lablab bean; vegetable soybean (edamame); velvetbean; cultivars, varieties, and hybrids of these commodities.
6-22D. Succulent shelled pea subgroup	Any succulent shelled cultivar of garden pea, Pisum spp.	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Chickpea; lentil; Pea (Pisum spp.; including, but not limited to English pea, garden pea, and green pea); pigeon pea; cultivars, varieties, and hybrids of these commodities.
6-22E. Pulses, dried shelled bean, except soybean, subgroup	Any one dried seed of bean, Phaseolus spp., or Vigna spp.	Pre-processing not required.	Grinder type processor, coffee grinder or Robot Coupe with cryogen (LN2 or dry ice).	African yam bean; American potato bean; Bean (Lupinus spp.; including, but not limited to Andean lupin, blue lupin, grain lupin, sweet lupin, white lupin, white sweet lupin, and yellow lupin); Bean (Phaseolus spp.; including, but not limited to black bean, cranberry bean, dry bean, field bean, French bean, garden bean, great northern bean, green bean, kidney bean, lima bean, navy bean, pink bean, pinto bean, red bean, scarlet runner bean, tepary bean, and yellow bean); Bean (Vigna spp.; including, but not limited to adzuki bean, asparagus bean, blackeyed pea, catjang bean, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, and yardlong bean); broad bean (fava bean); guar bean; goa bean; horse gram; jackbean; lablab bean; morama bean; sword bean; winged pea; velvetbean; cultivars, varieties, and hybrids of these commodities.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
6-22F. Pulses, dried shelled pea subgroup	Any one dried seed of pea, Pisum spp.	Pre-processing not required.	Grinder type processor, coffee grinder or Robot Coupe with cryogen (LN2 or dry ice).	Pea (Pisum spp.; including, but not limited to dry pea, field pea, green pea, yellow pea, wrinkled pea, marrowfat pea, and garden pea); chickpea; grass pea; lentil; pigeon pea; cultivars, varieties, and hybrids of these commodities
7-22. FORAGE AND HAY OF LEGUME VEGETABLES	Any cultivar of bean (Phaseolus spp. or cowpea (Vigna unguiculata (L.) Walp)); field pea (Pisum sativum L. subsp. sativum var. arvense (L.) Poir.); and soybean (Glycine max (L.) Merr.)	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch or smaller pieces or cut with electric knife and then thoroughly mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Plant parts of any legume vegetable listed in Crop Group 6-22 that will be used as animal feed.
7-22A. Forage and hay of legume vegetables (except soybeans) subgroup	Any cultivar of bean (Phaseolus spp. or cowpea (Vigna unguiculata (L.) Walp)); field pea (Pisum sativum L. subsp. sativum var. arvense (L.) Poir.)	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch or smaller pieces or cut with electric knife and then thoroughly mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Plant parts of any legume vegetable listed in Crop Group 6-22 (except soybeans) that will be used as animal feed.
8-10. FRUITING VEGETABLES	Tomato, standard size and one cultivar of small tomato; bell pepper and one cultivar of small non-bell pepper	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or chop with a knife.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	African eggplant; bush tomato; bell pepper; cocona; currant tomato; eggplant; garden huckleberry; goji berry; groundcherry; Martynia; naranjilla; okra; pea eggplant; pepino; non-bell pepper; roselle; scarlet eggplant; sunberry; tomatillo; tomato; tree tomato; cultivars, varieties, and/or hybrids of these
8-10A. Tomato subgroup	Tomato, standard size, and one cultivar of small tomato	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or chop with a knife.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Bush tomato; cocona; currant tomato; garden huckleberry; goji berry; groundcherry; naranjilla; sunberry; tomatillo; tomato; tree tomato; cultivars, varieties, and/or hybrids of these.
8-10B. Pepper/Eggplant subgroup	Bell pepper and one cultivar of small non-bell pepper	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or chop with a knife.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	African eggplant; bell pepper; eggplant; Martynia; nonbell pepper; okra; pea eggplant; pepino; roselle; scarlet eggplant; cultivars, varieties, and/or hybrids of these
8-10C. Non-bell pepper/Eggplant subgroup	One cultivar of small non-bell pepper or one cultivar of small eggplant	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine or chop with a knife.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	African eggplant; eggplant; Martynia; nonbell pepper; okra; pea eggplant; pepino; roselle; scarlet eggplant ; cultivars, varieties, and/or hybrids of these.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
9. CUCURBIT VEGETABLES	Cucumber, muskmelon, and summer squash	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. May need to quarter lengthwise, using opposite pieces prior to mixing to reduce bulk. Chop entire fruit including seeds and rind.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Chayote (fruit); Chinese waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (includes hyotan, cucuzza, hechima, Chinese okra); Momordica spp (includes balsam apple, balsam pear, bittermelon, Chinese cucumber); muskmelon (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon); pumpkin; squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); squash, winter (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon
9A.Melon subgroup	Cantaloupe	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. May need to quarter lengthwise, using opposite pieces prior to mixing to reduce bulk. Chop entire fruit including seeds and rind.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Citron melon; muskmelon (includes cantaloupe); watermelon
9B. Squash/Cucumber subgroup	One cultivar of summer squash and cucumber	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine. May need to quarter lengthwise, using opposite pieces prior to mixing to reduce bulk. Chop entire fruit including seeds and rind.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Chayote (fruit); Chinese waxgourd; cucumber; gherkin; gourd, edible; Momordica spp; pumpkin; squash, summer; squash, winter.
10-10. CITRUS FRUITS	Orange or tangerine/ mandarin, lemon or lime, and grapefruit	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Australian desert lime; Australian finger-lime; Australian round lime; Brown River finger lime; calamondin; citron; citrus hybrids; grapefruit; Japanese summer grapefruit; kumquat; lemon; lime; Mediterranean mandarin; mount white lime; New Guinea wild lime; orange, sour; orange, sweet; pummelo; Russell River lime; satsuma mandarin; sweet lime; tachibana orange; Tahiti lime; tangelo; tangerine (mandarin); tangor; trifoliate orange; uniq fruit; cultivars, varieties, and/or hybrids of these
10-10A. Orange subgroup	Orange or tangerine/mandarin	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Calamondin; citron; citrus hybrids; Mediterranean mandarin; orange, sour; orange, sweet; satsuma mandarin; tachibana orange; tangerine (mandarin); tangelo; tangor; trifoliate orange; cultivars, varieties, and/or hybrids of these.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
10-10B. Lemon/Lime subgroup	Lemon or lime	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Australian desert lime; Australian finger lime; Australian round lime; brown river finger lime; kumquat; lemon; lime; mount white lime; New Guinea wild lime; Russell River lime; sweet lime; Tahiti lime; cultivars, varieties, and/or hybrids of these.
10-10C. Grapefruit subgroup	Grapefruit	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Grapefruit; Japanese summer grapefruit; pummelo; tangelo; uniq fruit; cultivars, varieties, and/or hybrids of these.
11-10. POME FRUITS	Apple and pear	While inside IR4 bag and frozen break up with a mallet into approx. 1 to 2 inch pieces and mix to combine. May need to quarter lengthwise, using opposite pieces prior to mixing to reduce bulk. Chop entire fruit including seeds and peel.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Apple; azarole; crabapple; loquat; mayhaw; medlar; pear; pear, Asian; quince; quince, Chinese; quince, Japanese; tejocote; cultivars, varieties, and/or hybrids of these.
12-12. STONE FRUITS	Sweet cherry or Tart cherry, Peach and Plum or Prune plum	Pre-processing not required. May need to be pitted or cut/broke into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Apricot; apricot, Japanese; capulin; cherry, black; cherry, Nanking; cherry, sweet; cherry, tart; Jujube, Chinese; nectarine; peach; plum; plum, American; plum, beach; plum, Canada; plum, cherry; plum, Chickasaw; plum, Damson; plum, Japanese; plum, Klamath; plum, prune; plumcot; sloe; cultivars, varieties, and/or hybrids of these
12-12A. Cherry subgroup	Cherry, sweet or cherry, tart	Pre-processing not required. May need to be pitted or cut/broke into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Capulin; cherry, black; cherry, Nanking; cherry, sweet; cherry, tart; cultivars, varieties, and/or hybrids of these.
12-12B. Peach subgroup	Peach	Pre-processing not required. May need to be pitted or cut/broke into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Nectarine; peach; cultivars, varieties, and/or hybrids of these.
12-12C. Plum subgroup	Plum, or Prune plum	Pre-processing not required. May need to be pitted or cut/broke into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Apricot; apricot, Japanese; Jujube, Chinese; plum; plum, American; plum, beach; plum, Canada; plum, cherry; plum, Chickasaw; plum, Damson; plum, Japanese; plum, Klamath; plum, prune; plumcot; sloe; cultivars, varieties, and/or hybrids of these.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
13-07. BERRIES AND SMALL FRUITS	Any one blackberry or any one raspberry, highbush blueberry, elderberry or mulberry, grape, fuzzy kiwifruit and strawberry	Pre-processing typically not required. If larger than 1 to 2 in cut or break into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Amur river grape; aronia berry; bayberry; bearberry; bilberry; blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hullberry, lavacaberry, loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, Northern dewberry, olallieberry, Orgeon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora, and cultivars, varieties and/or hybrids of these); blueberry, highbush; blueberry, lowbush; buffalo currant; buffaloberry; che; Chilean guava; chokecherry; cloudberry; cranberry; cranberry, highbush; currant, black; currant, red; elderberry; European barberry; gooseberry; grape; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); kiwifruit, fuzzy; kiwifruit, hardy; lingonberry; maypop; mountain pepper berries; mulberry; muntries; native currant; partridgeberry; phalsa; pincherry; raspberry, black and red; riberry; salal; schisandra berry; sea buckthorn; serviceberry; strawberry; wild raspberry; cultivars, varieties, and/or hybrids of these.
13-07A. Caneberry subgroup	Any one blackberry or any one raspberry	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Blackberry; loganberry; raspberry, black and red; wild raspberry; cultivars, varieties, and/or hybrids of these.
13-07B. Bushberry subgroup	Blueberry, highbush	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Aronia berry; blueberry, highbush; blueberry, lowbush; buffalo currant; Chilean guava; cranberry, highbush; currant, black; currant, red; elderberry; European barberry; gooseberry; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); lingonberry; native currant; salal; sea buckthorn; cultivars, varieties, and/or hybrids of these.
13-07C. Large shrub/tree berry group	Elderberry or mulberry	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Bayberry; buffaloberry; che; chokecherry; elderberry; Juneberry (Saskatoon berry); mountain pepper berries; mulberry; phalsa; pincherry; riberry; salal; serviceberry; cultivars, varieties, and/or hybrids of these.
13-07D. Small fruit vine climbing subgroup	Grape and fuzzy kiwifruit	Pre-processing typically not required. If larger than 1 to 2 in cut or break into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Amur river grape; gooseberry; grape; kiwifruit, fuzzy; kiwifruit, hardy; Maypop; schisandra berry; cultivars, varieties, and/or hybrids of these
13-07E. Small fruit vine climbing subgroup, except fuzzy kiwifruit	Fuzzy kiwifruit	Pre-processing typically not required. If larger than 1 to 2 in cut or break into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Amur river grape; gooseberry; kiwifruit, fuzzy; kiwifruit, hardy; Maypop; schisandra berry; cultivars, varieties, and/or hybrids of these.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
13-07F. Small fruit vine climbing subgroup, except fuzzy kiwifruit	Grape	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Amur river grape; gooseberry; grape; kiwifruit, hardy; Maypop; schisandra berry; cultivars, varieties, and/or hybrids of these.
13-07G. Low growing berry group	Strawberry	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Bearberry; bilberry; blueberry, lowbush; cloudberry; cranberry; lingonberry; muntries; partridgeberry; strawberry; cultivars, varieties, and/or hybrids of these
13-07H. Low growing berry subgroup, except strawberry	Cranberry	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Bearberry; bilberry; blueberry, lowbush; cloudberry; cranberry; lingonberry; muntries; partridgeberry; cultivars, varieties, and/or hybrids of these.
14-12.TREE NUTS	Almond and pecan	Pre-processing typically not required. Nut meat may need to be separated.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	African nut-tree; almond; beechnut; Brazil nut; Brazilian pine; bunya; bur oak; butternut; Cajou nut; candlenut; cashew; chestnut; chinquapin; coconut; coquito nut; dika nut; ginkgo; Guiana chestnut; hazelnut (filbert); heartnut; hickory nut; Japanese horse-chestnut; macadamia nut; mongongo nut; monkey-pot; monkey puzzle nut; Okari nut; Pachira nut; peach palm nut; pecan; pequi; Pili nut; pine nut; pistachio; Sapucaia nut; tropical almond; walnut, black; walnut, English; yellowhorn; cultivars, varieties, and/or hybrids of these.
15-22. CEREAL GRAINS	Wheat, barley, field corn, sweet corn, rice and either grain sorghum or proso millet	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice).	Amaranth, grain; amaranth, purple; baby corn; barley; buckwheat; buckwheat, tartary; canarygrass, annual; Cañihua; chia; corn, field; corn, sweet; cram cram; fonio, black; fonio, white; grain sorghum; huauzontle grain; Inca wheat; Job's tears; millet, barnyard; millet, finger; millet, foxtail; millet, little; millet, pearl; millet, proso; oat; oat, Abyssinian; oat, common; oat, naked; oat, sand; popcorn; prince's feather; psyllium; psyllium, blond; quinoa; rice; rice, African; rye; teff; teosinte; triticale; wheat; wheat, club; wheat, common; wheat, durum; wheat, einkorn; wheat, emmer; wheat, macha; wheat, oriental; wheat, Persian; wheat, Polish; wheat, poulard; wheat, shot; wheat, spelt; wheat, timopheevi; wheat, vavilovi; wheat, wild einkorn; wheat, wild emmer; wheatgrass, intermediate; wild rice; wild rice, eastern; cultivars, varieties, and hybrids of these commodities.
15-22A. Wheat subgroup	Wheat	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice).	Amaranth, grain; amaranth, purple; Cañihua; chia; cram cram; huauzontle grain; Inca wheat; prince's feather; psyllium; psyllium, blond; quinoa; rye; triticale; wheat; wheat, club; wheat, common; wheat, durum; wheat, einkorn; wheat, emmer; wheat, macha; wheat, oriental; wheat, Persian; wheat, Polish; wheat, poulard; wheat, shot; wheat, spelt; wheat, timopheevi; wheat, vavilovi; wheat, wild einkorn; wheat, wild emmer; wheatgrass, intermediate; cultivars, varieties, and hybrids of these commodities.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
15-22B. Barley subgroup	Barley	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice).	Barley; buckwheat; buckwheat, tartary; canarygrass, annual; oat; oat, Abyssinian; oat, common; oat, naked; oat, sand; cultivars, varieties, and hybrids of these commodities
15-22C. Field corn subgroup	Field corn	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Corn, field; popcorn; teosinte; cultivars, varieties, and hybrids of these commodities.
15-22D. Sweet corn subgroup	Sweet corn	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Baby corn; corn, sweet; cultivars, varieties, and hybrids of these commodities.
15-22E. Grain sorghum and millet subgroup	Grain sorghum or Proso millet	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Fonio, black; fonio, white; grain sorghum; Job's tears; millet, barnyard; millet, finger; millet, foxtail; millet, little; millet, pearl; millet, proso; teff; cultivars, varieties, and hybrids of these commodities.
15-22F. Rice subgroup	Rice	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Rice; rice, African; wild rice; wild rice, eastern; cultivars, varieties, and hybrids of these commodities.
16-22. FORAGE, HAY, STOVER, AND STRAW OF CEREAL GRAINS	Corn, wheat, and any other cereal grain crop	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or smaller Hobart with cryogen (LN2 or dry ice).	Includes the forage, hay, stover and straw of the commodities in Crop Group 15-22, including cultivars, varieties and/or hybrids of these commodities.
17. GRASS FORAGE, FODDER, AND HAY GROUP	Bermuda grass; bluegrass; and bromegrass or fescue	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). If too much sample bulk to add all at once, process in batches until chopper is full as described in footnote 2.	Forage, fodder, stover, and hay of any grass, Gramineae/Poaceae family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock, all pasture and range grasses and grasses grown for hay or silage.
18. NONGRASS ANIMAL FEEDS (FORAGE, FODDER, STRAW AND HAY)	Alfalfa and clover (Trifolium spp.)	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Alfalfa; bean, velvet; clover (Trifolium spp., Melilotus spp.); kudzu; lespedeza; lupin; sainfoin; trefoil; vetch; vetch, crown; vetch, milk
19. HERBS AND SPICES	Moved to Crop Groups 25 & 26			
20. OILSEEDS	Rapeseed (canola varieties only); sunflower, seed; and cottonseed	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Borage; calendula; castor oil plant; Chinese tallowtree; cottonseed; crambe; cuphea; echium; euphorbia; evening primrose; flax seed; gold of pleasure; hare's ear mustard; jojoba; lesquerella; lunaria; meadowfoam; milkweed; mustard seed; niger seed; oil radish; poppy seed; rapeseed; rose hip; safflower; sesame; stokes aster; sunflower; sweet rocket; tallowwood; tea oil plant; vernonia; cultivars, varieties, and/or hybrids of these
20A. Rapeseed subgroup	Rapeseed, canola varieties only	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Borage; crambe; cuphea; echium; flax seed; gold of pleasure; hare's ear mustard; lesquerella; lunaria; meadowfoam; milkweed; mustard seed; oil radish; poppy seed; rapeseed; sesame; sweet rocket; cultivars, varieties, and/or hybrids of these.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
20B. Sunflower subgroup	Sunflower, seed	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Calendula; castor oil plant; Chinese tallowtree; euphorbia; evening primrose; jojoba; niger seed; rose hip; safflower; stokes aster; sunflower; tallowwood; tea oil plant; vernonia; cultivars, varieties, and/or hybrids of these
20C. Cottonseed subgroup	Cottonseed	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Cottonseed; cultivars, varieties, and/or hybrids of these.
21. EDIBLE FUNGI	White button mushroom and any one oyster mushroom or any Shiitake mushroom	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Blewitt; bunashimeji; Chinese mushroom; enoki; hime-matsutake; hirmeola; maitake; morel; nameko; net bearing; oyster mushroom; pom pom; reishi mushroom; Rodman's agaricus; Shiitake mushroom, shimeji; stropharia; truffle; white button mushroom; white jelly fungi
22. STALK, STEM AND LEAF PETIOLE VEGETABLES	Asparagus and celery	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Agave; aloe vera; asparagus; bamboo, shoots; cardoon; celery; celery, Chinese; celtuce; fennel, Florence, fresh leaves and stalk; fern, edible, fiddlehead; fuki; kale, sea; kohlrabi; palm hearts; prickly pear, pads; prickly pear, Texas, pads; rhubarb; udo; zuiki; cultivars, varieties, and hybrids of these commodities.
22A. Stalk and stem vegetable subgroup	Asparagus	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Agave; aloe vera; asparagus; bamboo, shoots; celtuce; fennel, Florence, fresh leaves and stalk; fern, edible, fiddlehead; kale, sea; kohlrabi; palm hearts; prickly pear, pads; prickly pear, Texas, pads; cultivars, varieties, and hybrids of these commodities.
22B. Leaf petiole vegetable subgroup	Celery	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Cardoon; celery; celery, Chinese; fuki; rhubarb; udo; zuiki; cultivars, varieties, and hybrids of these commodities.
23. TROPICAL AND SUBTROPICAL FRUITS, EDIBLE PEEL	Date, fig, guava and olive	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Acai; acerola; achachairu; African plum; agritos; almondette; ambarella; apak palm; appleberry; araza; arbutus berry; babaco; bacaba palm; bacaba-de-leque; bayberry, red; bignay; bilimbi; borojo; breadnut; cabeluda; cajou, fruit; cambuca; carandas-plum; carob; cashew apple; Ceylon iron wood; Ceylon olive; cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; chirauli-nut; ciruela verde; cocoplum; date; Davidson's plum; desert-date; doum palm coconut; false sandalwood; feijoa; fig; fragant manjack; gooseberry, abyssinian; gooseberry, Ceylon; gooseberry, Indian; gooseberry, otaheite; governor's plum; grumichama; guabiroba; guava; guava berry; guava, Brazilian; guava, cattley; guava, Costa Rican; guava, Para; guava, purple strawberry; guava, strawberry; guava, yellow strawberry; guayabillo; illawarra plum; imbe; imbu; Indian-plum;

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
				jaboticaba; Jamaica-cherry; jambolan; jelly palm; jujube, Indian; kaffir-plum; kakadu plum; kapundung; karanda; kwai muk; lemon aspen; mangaba; Marian plum; mombin, Malayan; mombin, purple; mombin, yellow; monkeyfruit; monos plum; mountain cherry; nance; natal plum; noni; olive; papaya, mountain; pataua; peach palm, fruit; persimmon, black; persimmon, Japanese; pitomba; plum-of-Martinique; pomerac; rambai; rose apple; rukam; rumberry; sea grape; sentul; sete-capotes; silver aspen; starfruit; Surinam cherry; tamarind; uvalha; water apple; water pear; water berry; wax jambu; cultivars, varieties, and hybrids of these commodities
23A. Tropical and subtropical, small fruit, edible peel subgroup	Olive	Pre-processing typically not required. If larger than 1 to 2 in cut or break into smaller pieces.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Acerola; African plum; agritos; almondette; appleberry; arbutus berry; bayberry, red; bignay; breadnut; cabeluda; carandas-plum; Ceylon iron wood; Ceylon olive; cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; chirauli-nut; cocoplum; desert-date; false sandalwood; fragant manjack; gooseberry, abyssinian; gooseberry, Ceylon; gooseberry, otaheite; governor 's plum; grumichama; guabiroba; guava berry; guava, Brazilian; guava, Costa Rican; guayabillo; illawarra plum; Indian-plum; Jamaica-cherry; jambolan; kaffir-plum; kakadu plum; kapundung; karanda; lemon aspen; mombin, yellow; monos plum; mountain cherry; olive; persimmon, black; pitomba; plum-of-Martinique; rukam; rumberry; sea grape; sete-capotes; silver aspen; water apple; water pear; water berry; wax jambu; cultivars, varieties, and hybrids of these commodities.
23B. Tropical and subtropical, medium to large fruit, edible peel subgroup	Fig and guava	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Achachairu; ambarella; araza; babaco; bilimbi; borojo; cajou, fruit; cambuca; carob; cashew apple; ciruela verde; davidson's plum; feijoa; fig; gooseberry, Indian; guava; guava, cattley; guava, Para; guava, purple strawberry; guava, strawberry; guava, yellow strawberry; imbe; imbu; jaboticaba; jujube, Indian; kwai muk; mangaba; Marian plum; mombin, Malayan; mombin, purple; monkeyfruit; nance; natal plum; noni; papaya, mountain; persimmon, Japanese; pomerac; rambai; rose apple; sentul; starfruit; Surinam cherry; tamarind; uvalha; cultivars, varieties, and hybrids of these commodities.
23C. Tropical and subtropical, palm fruit, edible peel subgroup	Date	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Acai; apak palm; bacaba palm; bacaba-de-leque; date; doum palm coconut; jelly palm; pataua; peach palm, fruit; cultivars, varieties, and hybrids of these commodities.
24. TROPICAL AND SUBTROPICAL FRUITS, INEDIBLE PEEL	Atemoya or sugar apple, avocado, banana or	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Abiu; aisen; akee apple; atemoya; avocado; avocado, Guatemalan; avocado, Mexican; avocado, West Indian; bacury; bael fruit; banana; banana, dwarf; binjai; biriba;

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
	pomegranate, dragon fruit, lychee, passionfruit, pineapple and prickly pear, fruit			breadfruit; Burmese grape; canistel; cat's-eyes; champedak; cherimoya; cupuacu; custard apple; dragon fruit; durian; elephant-apple; etambe; granadilla; granadilla, giant; ilama; inga; jackfruit; jatoba; karuka; kei apple; langsat; lanjut; longan; lucuma; lychee; mabolo; madras-thorn; mammy-apple; manduro; mango; mango, horse; mango, Saipan; mangosteen; marang; marmaladebox; matisia; mesquite; mongongo, fruit; monkey-bread-tree; monstera; nicobar-breadfruit; paho; pandanus; papaya; passionflower, winged-stem; passionfruit; passionfruit, banana; passionfruit, purple; passionfruit, yellow; pawpaw, common; pawpaw, small-flower; pelipisan; pequi; pequia; persimmon, American; pineapple; pitahaya; pitaya; pitaya, amarillo; pitaya, roja; pitaya, yellow; plantain; pomegranate; poshte; prickly pear, fruit; prickly pear, Texas, fruit; pulasan; quandong; rambutan; saguaro; sapodilla; sapote, black; sapote, green; sapote, mamey; sapote, white; sataw; satinleaf; screw-pine; Sierra Leone-tamarind; soncoya; soursop; Spanish lime; star apple; sugar apple; sun sapote; tamarind-of-the-Indies; velvet tamarind; wampi; white star apple; wild loquat; cultivars, varieties, and hybrids of these commodities
24A. Tropical and subtropical, small fruit, inedible peel subgroup	Lychee	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Aisen; bael fruit; Burmese grape; cat's-eyes; inga; longan; lychee; madras-thorn; manduro; matisia; mesquite; mongongo, fruit; pawpaw, small-flower; satinleaf; Sierra Leone-tamarind; Spanish lime; velvet tamarind; wampi; white star apple; cultivars, varieties, and hybrids of these commodities.
24B. Tropical and subtropical, medium to large fruit, smooth, inedible peel subgroup	Avocado, plus pomegranate or banana	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Abiu; akee apple; avocado; avocado, Guatemalan; avocado, Mexican; avocado, West Indian; bacury; banana; banana, dwarf; binjai; canistel; cupuacu; etambe; jatoba; kei apple; langsat; lanjut; lucuma; mabolo; mango; mango, horse; mango, Saipan; mangosteen; paho; papaya; pawpaw, common; pelipisan; pequi; pequia; persimmon, American; plantain; pomegranate; poshte; quandong; sapote, black; sapote, green; sapote, white; sataw; screw-pine; star apple; tamarind-of-the-Indies; wild loquat; cultivars, varieties, and hybrids of these commodities.
24C. Tropical and subtropical, medium to large fruit, rough or hairy, inedible peel subgroup	Pineapple, plus atemoya or sugar apple	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Atemoya; biriba; breadfruit; champedak; cherimoya; custard apple; durian; elephant-apple; ilama; jackfruit; karuka; mammy-apple; marang; marmaladebox; monkey-bread tree; nicobar-breadfruit; pandanus; pineapple; pulasan; rambutan; sapodilla; sapote, mamey; soncoya; soursop; sugar apple; sun sapote; cultivars, varieties, and hybrids of these commodities.

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
24D. Tropical and subtropical, cactus, inedible peel subgroup	Dragon fruit and prickly pear fruit	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Dragon fruit; pitahaya; pitaya; pitaya, amarillo; pitaya, roja; pitaya, yellow; prickly pear, fruit; prickly pear, Texas, fruit; saguaro; cultivars, varieties, and hybrids of these commodities.
24E. Tropical and subtropical, vine, inedible peel subgroup	Passionfruit	While inside IR4 bag and frozen break up with a mallet into approx. 2 inch pieces and mix to combine.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	Granadilla; granadilla, giant; monstera; passionflower, winged-stem; passionfruit; passionfruit, banana; passionfruit, purple; passionfruit, yellow; cultivars, varieties, and hybrids of these commodities.
25. HERBS	Basil, fresh leaves and mint, fresh leaves; basil, dried leaves and mint, dried leaves	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Agrimony; amla; angelica; applemint; avarum; balloon pea; balm; barrenwort; basil; bay; bearberry; bisongrass; blue mallow; boneset; borage; burnet; butterbur; calamint; calendula; caltrop; camomile (chamomile); caraway; catnip; cat's claw; celandine; celery; centaury; chaste tree; chervil; chinese blackberry; chinese foxglove; chive; cicely; cilantro; clary; coriander; costmary; creat; culantro; cultivars; curry leaf; curryplant; cut leaf; damiana; dillweed; dokudami; echinacea; epazote; eucommia; evening primrose; eyebright; fennel; fenugreek; feverfew; field pennycress; flowers; fumitory; galbanum; galega; gambir; geranium; germander; goldenrod; goldenseal; gotu kola; greater periwinkle; guayusa; gumweed; gymnema; gypsywort; hawthorn; heal-all; hemp nettle; honewort; honeybush; horehound; horsemint; horsetail; hyssop; indian tobacco; ironwort; ivy; jamaica dogwood; jasmine; labrador tea; lavender; lemon verbena; lemongrass; lovage; love-in-a-mist; mamaki; marigold; marjoram; marshmallow; meadowsweet; mint; monarda; moringa; motherwort; mountainmint; mugwort; mulberry; mullein; mustard; nasturtium; nettle; oregano; oswego tea; pandan leaf; pansy; paracress; parsley; partridge berry; patchouli; pennyroyal; pepper leaf; peppermint; perilla; pill bearing spurge; pipsissewa; plantain; rooibos; rose; rosemary; sage; savory; senna; siberian fir; skullcap; small flower willow head; sorrel; southernwood; spearmint; spilanthes; spotted beebalm; st john's wort; stevia; stoneroot; swamp leaf; tansy; tarragon; thuja; thyme; toon; toothed clubmoss; trailing arbutus; vasaka; verbena; veronica; violet; watermint; waterpepper; wild bergamot; wintergreen; wood betony; woodruff; wormwood; yarrow; yellow gentian; yerba santa; yomogi. Cultivars, varieties, and hybrids of these commodities.
25A. Herb fresh leaves subgroup	Basil, fresh leaves and mint, fresh leaves	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Agrimony; amla; angelica; applemint; avarum; balloon pea; balm; barrenwort; basil; bay; bearberry; bisongrass; blue mallow; boneset; borage; burnet; butterbur; calamint; calendula; caltrop; camomile (chamomile); caraway; cat's claw; catnip; celandine; centaury; chaste tree; chinese

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
				blackberry; chinese foxglove; cicely; clary; coriander; costmary; creat; culantro; curry leaf; curryplant; cut leaf; damiana; dokudami; echinacea; epazote; eucommia; evening primrose; eyebright; fennel; fenugreek; feverfew; field pennycress; flowers; fumitory; galbanum; galega; gambir; geranium; germander; goldenrod; goldenseal; gotu kola; greater periwinkle; guayusa; gumweed; gymnema; gypsywort; hawthorn; heal-all; hemp nettle; honewort; honeybush; horehound; horsemint; horsetail; hyssop; indian tobacco; ironwort; ivy; jamaica dogwood; jasmine; labrador tea; lavender; lemon verbena; lemongrass; lovage; love-in-a-mist; mamaki; marigold; marjoram; marshmallow; meadowsweet; mint; monarda; moringa; motherwort; mountainmint; mugwort; mulberry; mullein; mustard; nasturtium; nettle; oregano; oswego tea; pandan leaf; pansy; paracress; partridge berry; patchouli; pennyroyal; pepper leaf; peppermint; perilla; pill bearing spurge; pipsissewa; plantain; rooibos; rose; rosemary; sage; savory; senna; siberian fir; skullcap; small flower willow head; sorrel; southernwood; spearmint; spilanthes; spotted beebalm; st john's wort; stevia; stoneroot; swamp leaf; tansy; tarragon; thuja; thyme; toon; toothed clubmoss; trailing arbutus; vasaka; verbena; veronica; violet; watermint; waterpepper; wild bergamot; wintergreen; wood betony; woodruff; wormwood; yarrow; yellow gentian; yerba santa; yomogi.
25B. Herb dried leaves subgroup	Basil, dried leaves and mint, dried leaves	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). A coffee grinder can be used for small sample sizes.	Agrimony; amla; angelica; applemint; avarum; balloon pea; balm; barrenwort; basil; bay; bearberry; bisongrass; blue mallow; boneset; borage; burnet; butterbur; calamint; calendula; caltrop; camomile (chamomile); caraway; cat's claw; catnip; celandine; celery; centaury; chaste tree; chervil; chinese blackberry; chinese foxglove; chive; cicely; cilantro; clary; coriander; costmary; creat; culantro; curry leaf; curryplant; cut leaf; damiana; dillweed; dokudami; echinacea; epazote; eucommia; evening primrose; eyebright; fennel; fenugreek; feverfew; field pennycress; flowers; fumitory; galbanum; galega; gambir; geranium; germander; goldenrod; goldenseal; gotu kola; greater periwinkle; guayusa; gumweed; gymnema; gypsywort; hawthorn; heal-all; hemp nettle; honewort; honeybush; horehound; horsemint; horsetail; hyssop; indian tobacco; ironwort; ivy; jamaica dogwood; jasmine; labrador tea; lavender; lemon verbena; lemongrass; lovage; love-in-a-mist; mamaki; marigold; marjoram; marshmallow; meadowsweet; mint; monarda; moringa; motherwort; mountainmint; mugwort; mulberry; mullein; mustard; nasturtium; nettle; oregano; oswego tea; pandan leaf; pansy; paracress; parsley; partridge berry; patchouli;

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
				pennyroyal; pepper leaf; peppermint; perilla; pill bearing spurge; pipsissewa; plantain; rooibos; rose; rosemary; sage; savory; senna; siberian fir; skullcap; small flower willow head; sorrel; southernwood; spearmint; spilanthes; spotted beebalm; st john's wort; stevia; stoneroot; swamp leaf; tansy; tarragon; thuja; thyme; toon; toothed clubmoss; trailing arbutus; vasaka; verbena; veronica; violet; watermint; waterpepper; wild bergamot; wintergreen; wood betony; woodruff; wormwood; yarrow; yellow gentian; yerba santa; yomogi.
26. SPICES	Dill seed or celery seed	Pre-processing not required.	Wiley mill, coffee grinder or Robot Coupe or with cryogen (LN2 or dry ice).	Seeds of the following (where applicable): Ajowan; Alder buckhorn; Allspice; Ambrette; Amla; Angelica, dahuria; Angelica; Angostura, bark; Anise pepper; Anise; Anise, star; Annatto; Asafoetida; Ashwagandha, fruit; Autumn crocus; Balsam, Peruvian; Barberry, bark; Batavia-cassia, bark; Batavia-cassia, fruit; Belleric myrobalan; Betel vine; Birch, bark; Bisnaga; Bitterwood; Black bread weed; Bloodroot; Blue mallee; Blushwood; Boldo, leaf; Buchu; Calamus root; Candlebush; Canella, bark; Caper buds; Caper spurge; Caraway, black; Caraway, fruit; Cardamom, black; Cardamom, Ethiopian; Cardamom, green; Cardamom, Nepal; Cardamom-amomum; Cascara sagrada; Cassia, bark; Cassia, Chinese, bark; Cassia, Chinese, fruit; Cassia, fruit; Cat's claw, bark; Catechu, bark; Celery; Chaste tree, berry; Chaste tree, Chinese, roots; Chervil; Chinese hawthorn; Chinese nutmeg tree; Chinese wineberry, fruit; Chinese-pepper; Cinnamon, bark; Cinnamon, fruit; Cinnamon, Saigon, bark; Cinnamon, Saigon, fruit; Clove buds; Clusterleaf; Comfrey; Copaiba; Coptis; Coriander, fruit; Coriander; Cotton, bark; Crampbark; Cubeb; Culantro; Culvers root; Cumin; Cumin, black; Dill; Dorrigo pepper, berry; Dorrigo pepper, leaf; Dragon blood; Echinacea; Epimedium; Eucalyptus; Eucommia, bark; European beech; Felty germander; Fennel flower; Fennel, common, fruit; Fennel, common; Fennel, Florence, fruit; Fennel, Florence; Fenugreek; Fingerroot; Flame lily; Frankincense; Frankincense, Indian; Fringetree, bark; Galbanum, resin; Gambooge; Grains of paradise; Grains of Selim; Guaiac; Guarana; Guggul; Gum Arabic; Gum ghatti; Gum karaya; Gum tragacanth; Haw, black; Honewort; Imperatoria; Indian tobacco; Iva; Jalap; Jamaica dogwood, bark; Juniper berry; Kaffir lime, leaf; Kewra; Kokam; Linden, leaf; Lovage; Mace; Magnolia, bark; Mahaleb; Malabar cardamom; Malabar-tamarind; Malabathrum; Mastic; Micromeria, white; Milk thistle; Mioga; Miracle fruit; Mistletoe; Mojave yucca; Muira puama; Mustard, black; Mustard, brown; Mustard,; Mustard, white; Myrrh; Myrrh, bisabol; Myrtle, anise; Myrtle, leaf;

Crop Group (Subgroup) Number and Name	Representative Commodities	Pre-Processing Preparation [1]	Processing [2]	Commodities
				Myrtle, lemon; Nasturtium, bush, pods; Nasturtium, garden, pods; Nasturtium, pods; Nettle, stinging; Nutmeg; Osha; Pepper, black; Pepper, Indian long; Pepper, Javanese long; Pepper, leaf; Pepper, pink; Pepper, Sichuan; Pepper, white; Pepperbush, berry; Pepperbush, leaf; Peppercorn, green; Peppertree; Peppertree, Peruvian; Perilla; Phellodendron; Pine, maritime; Poppy; Prickly ash, Chinese; Prickly ash, Southern, bark; Pygeum; Qing hua jiao; Quassia, bark; Quebracho, bark; Quillaja; Quinine; Rauwolfia, bark; Resin spurge; Rue; Saffron crocus; Sandalwood; Sassafras, bark; Sassafras, leaf; Saunders, red; Saw palmetto; Sesame; Silktree, bark; Simaruba, bark; Skunk cabbage, root; Slippery elm; Stemona, root; Suma; Sumac, fragrant; Sumac, smooth, leaf; Taheebo, bark; Tamarind; Tasmanian pepper, berry; Tasmanian pepper, leaf; Threeleaf caper; Tsaoko; Vanilla; Wattleseed; White willow; Willow; Witch hazel; Yaw root; Yellow gentian, roots; Yohimbe; Cultivars, varieties, and hybrids of these commodities.
Miscellaneous Crops				
Cacao	Cacao, fermented dry bean	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	
Hemp	Hemp fiber, flower bud, and seed	Pre-processing typically not required. Use an electric knife if needed.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	
Honey	Bees honey, wax, and honeycomb	While inside IR4 bag add cryogen to make brittle then cut into approx. 2 inch pieces and mix to combine	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice). Excess cryogen helps reduce sticking to equipment.	
Hops	Hops, dry cones	Pre-processing not required.	Robot Coupe, Grinder or Hobart with cryogen (LN2 or dry ice).	

[1] Typical pre-processing tools include, but are not limited to: mallet, hammer, hatchet, cleaver, heavy knife, ginzu type knife, scissors, electric knife, and paper cutter. Caution must be taken when attempting to break samples with mallets while in the IR-4 bags. The sample bag may break. A secondary bag may be used to contain the pieces. Be aware that there may be a possibility of sample contamination with slivers of the bag/plastic lining. Alternatively, break-up of difficult frozen items using a heavy bladed knife, cleaver or heavy hammer/ mallets (2.5-4lb) may be done on a chopping board lined with butcher paper with the edges folded up to contain sample pieces. Care must be exercised when using metal knives, choppers or hammers that pieces do not cause personal injury in the event of breakage. Placing cryogen inside sample bag and allowing time for cooling can make RAC more brittle and ease processing.

[2] Use of serrated S-blades will improve chopping efficiency of Robot Coupe Systems when processing fibrous and hard sample matrices including green coffee bean, roasted coffee beans, and lychee whole fruit (with seed). Use of the Pulse or High speed (~3600 rpm) option for variable speed models is recommended for these difficult frozen matrices. A coffee grinder is useful for dry seeded samples. If there is too much sample bulk to add the entire sample all at once and sub-sampling is not an option, process a portion of the sample, add additional. sample and cryogen (if using), process and repeat until chopper is full. Bulk bag and repeat processing until entire sample is chopped. Combine all chopped matrix in bulk bag, mix well and remove sample for analysis/storage.

Attachment 2

Backlog Response Policy

1. Definition of a backlog

Analytical work should be done within 12 months after the last batch of field samples are received by a lab. A "backlog" exists when the sample analysis and ASR are not completed within 12 months.
Projects will not be considered backlogged if the following situations have occurred:

- HQ management reprioritization of study timeline
- Unable to receive standards from registrant
- Government or University shutdown impacting IR-4 and/or ARS operations

2. Strategy for preventing future backlogs

- Better planning
    - As much as possible, assign projects based on previous experience and expertise, recognizing that workloads need to be balanced and new actives will be analyzed.
    - Each lab should plan for the anticipated projects in advance, for example, to do method development before samples from last trials arrive.
    - Management will assure that personnel, resources, facilities, equipment…are available as scheduled.
    - Management to evaluate status of labs during Spring PMC meeting to determine if all labs have sufficient resources such that IR-4 laboratories may accept outside contract work.

- Better communication and transparency
    - Management to foster a culture where timelines are met, and issues are raised and addressed to prevent backlogs.
    - Cap the time for method development to **3 months**
        i. Suggested Method Development Timeline
            1. After 1st month: LRD contacts AC-AC to engage other chemists for ideas. Concurrently, LRD reaches out to registrant (chemist and IR-4 representative) for assistance. The Study Director (SD) and National Laboratory Director (NLD) are kept in the loop either as part of AC-AC discussions or direct communications.
            2. After 2nd month: LRD re-engages with AC-AC to report back results for various attempts and discusses possible next steps. LRD shares efforts with IR-4 and regional management (Regional Director (RD), NLD and SD).
            3. After 3rd month: LRD meets with RD, NLD and SD to discuss options to facilitate the timely completion of the project.
                a. Transfer project to different IR-4 lab
                b. Transfer project to contract lab
            4. For the purposes of reporting, color levels will be used.
                a. After 1st month: Yellow
                b. After 2nd month: Orange
                c. After 3rd month: Red

3. Consequences for backlog

Once a project or projects become backlogged per the definition above, an email note will be sent by the National Lab Director to the IR-4 Executive Director, the Lab Director and the Regional Director. This note will provide notification that there is a backlog and request a formal response containing an explanation of the current status, and a proposal for corrective actions to meet the analytical timeline(s). The email response will be generated by the Lab director, approved by the Regional Director, and should be sent to the IR-4 Executive Director and National Lab Director within two weeks. HQ will decide if a meeting between the Lab Director, Regional Director, IR-4 Executive Director (and others as requested) is needed to approve the proposal or to discuss alternatives to make corrections to meet study timelines. If a meeting is not deemed necessary, approval for the plan will be provided via email. Once the backlog situation has been successfully addressed, a follow-up email will be sent from the National Lab Director to the Lab Director, with copies to the Regional Director and the IR-4 Executive Director.

Attachment 3

Sample Analytical Summary Report

ANALYTICAL SUMMARY REPORT
Cyantraniliprole: Magnitude of the Residue on Dill

PR# 12401

Author(s)
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Laboratory Research Director
Matt Hengel

Testing Laboratory
IR-4 Western Region Laboratory
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Laboratory ID# 12401.20-CAR14

Study Director
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Sponsor
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Field ID Numbers
12401.18-WA*370
12401.18-NJ249
12401.18-WI388
12401.18-FL136
12401.18-CA96
12401.18-ID167

Study Timetable
Study Initiation Date: 03/12/18
Experimental Termination Date: 06/18/21

Report Date
10/18/21

GLP STANDARDS COMPLIANCE STATEMENT

PR#: 12401 Lab ID#: 12401.20-CAR14

The study reported herein for residues of cyantraniliprole on dill was conducted and reported in compliance with GLP Title 40 CFR, part 160 of the Code of Federal Regulations of the United States of America.

10/18/2021

Signature/Date
Matt Hengel, Analyst
Laboratory Research Director
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IR-4 NATIONAL PESTICIDE CLEARANCE RESEARCH PROGRAM
RESIDUE DATA REPORTING FORM (Part 2)
RESIDUE STUDY QUALITY ASSURANCE REPORT SHEET

INSTRUCTION: For the residue study captioned below, the Quality Assurance Unit (QAU) must enter the type of inspections or audits performed, the date each was done, and the date the findings were reported to Management and the Study Director. The completed form becomes part of the study record. QAU records are to be maintained and indexed as per 40 CFR Part 160.

PR#: 12401
Lab ID #: 12401.20-CAR14
Commodity: Dill
Analysis for residues of: Cyantraniliprole
Laboratory Research Director: Matt Hengel

INSPECTION/AUDIT**

TYPE	DATE	BY	DATE REPORTED*
1. CPI-L	4/2/21	M. Beran	4/5/21
2. CPI-L	5/13/21	M. Beran	5/19/21
3. CPI-L	6/3/21	S. Normington	6/4/21
4. RDA -ASR	9/2,3,7,9,13-15/21	M. Beran	9/16/21

*Date findings reported to management and study director
**CPI= Critical Phase Inspection; RDA= Raw Data Audit; ASR= Analytical Summary Report.

Signature: _____ Date: 10/12/21

Name: (Print): Martin Beran Phone: (530) 754-8525
Quality Assurance Coordinator

Address: Dept of Environmental Toxicology, University of California. Davis, CA 95616-8588

LABORATORY PERSONNEL

Name	Designation
Matt Hengel	Laboratory Research Director
Bronson Hung	Analyst, Sample Control Officer
Paul Kuzmicky	Analyst
Alexander McFall	Analyst
Tey Montalvo	Analyst
Riza Punongbayan	Analyst, Report Preparation
Salvador Chava Torres	Asst. Sample Control Officer
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LOCATION OF RAW DATA

Original raw data, a certified copy of the signed protocol, amendments, correspondence logs and all relevant information for the study titled: "Cyantraniliprole: Magnitude of the Residue on Dill, PR# 12401" along with a certified copy of the signed analytical summary report will be maintained in the archives of the testing laboratory. The original copy of the analytical summary report will be forwarded to the sponsor. Original raw facility data from the Michigan State University (MSU) laboratory will be maintained in the archives of the laboratory at MSU.

Portions of the field samples will be retained at the testing laboratory in a freezer generally –20°C for at least 12 months after submission of the laboratory report. The long term storage stability samples will be stored for at least 5 years at generally –20°C. The study director will be consulted before the field samples or the storage stability samples are discarded.

Laboratory Research Director:	Matt Hengel
Testing Laboratory:	IR-4 Western Region Laboratory Department of Environmental Toxicology 4218 Meyer Hall University of California, Davis Davis, CA 95616

IR-4 NATIONAL PESTICIDE CLEARANCE RESEARCH PROGRAM ANALYTICAL SUMMARY REPORT PR#12401: CYANTRANILIPROLE/DILL

I. Objective/Introduction

At the request of IR-4 Headquarters, the Western Region Laboratory at the University of California, Davis (UCD) has assayed dill for residues of cyantraniliprole (EPA Reg. No. 352-859, CAS# 736994-63-1) to provide data to support the establishment of a pesticide tolerance. The method used in this study was derived from "Analytical Method for Determination of DPX-HGW86 and metabolites in crops using LC/MS/MS"; Joseph P. McClory, Robert M. Henze, Sheila Stevens-Shrieve; DuPont Project Identification Number DuPont-15736; dated October 16, 2007. Steps where the UCD working method significantly diverges from the method referenced in the protocol are noted in Section V. Modifications. The study followed IR-4 National Pesticide Clearance Laboratory Phase Protocol PR# 12401 as amended. The validated method sensitivity is 0.01 ppm cyantraniliprole and IN-J9Z38.

II. Sample Inventory/History

Samples were originally shipped via ACDS freezer truck to the IR-4 Laboratory at Michigan State University (MSU) where they were chopped and subsampled. Upon receipt at the MSU laboratory, samples were inventoried, verified against the Residue Sample Shipping Form and IR-4 study protocol, assigned a unique sample ID and stored in a freezer. Each sample was chopped in a Robot Coupe food chopper. The chopped sample was placed in glass jars and stored frozen.

When the analysis was re-assigned to the UCD laboratory, the samples (2 jars per field sample and storage stability samples) were shipped to UCD via ACDS. Upon arrival at the UCD laboratory, the samples were placed in the freezer. The sample jars were checked against the documents sent by the shipping laboratory and their condition was checked. Unique laboratory sample ID numbers were assigned and each jar was labelled with the new sample ID numbers as listed in Table II.1. There were 2 jars received for each field sample that were labelled "A" and "B." The "A" jars were stored as primary samples and the "B" samples were kept as secondary backup samples. All samples were stored frozen (generally -20°C).

Table II.1: Sample Inventory

Field Trial	Crop Fraction	Field Sample ID	Sampling Date	Lab Receipt Date (MSU)	Lab Sample ID (MSU)	Chopping Date (MSU)	Lab Sample ID (UCD)	Lab Receipt Date (UCD)
WA*370	Fresh Leaves & Stems	FA	07/16/18	09/27/18	22828	01/13/20	28396	09/24/20
		FB	07/16/18	09/27/18	22829	01/13/20	28397	09/24/20
		FC	07/18/18	09/27/18	22830	02/03/20	28398	09/24/20
		FD	07/18/18	09/27/18	22831	02/04/20	28399	09/24/20
	Dried Leaves & Stems	DA	07/17/18	09/27/18	22832	01/22/20	28400	09/24/20
		DB	07/17/18	09/27/18	22833	01/22/20	28401	09/24/20
		DC	07/19/18	09/27/18	22834	02/07/20	28402	09/24/20
		DD	07/19/18	09/27/18	22835	02/07/20	28403	09/24/20
	Mature seed	SA	09/05/18	09/27/18	22836	01/29/20	28404	09/24/20
		SB	09/05/18	09/27/18	22837	01/29/20	28405	09/24/20
		SC	09/05/18	09/27/18	22838	02/12/20	28406	09/24/20
		SD	09/05/18	09/27/18	22839	02/12/20	28407	09/24/20
	Fresh Leaves, Stems & Green Seeds	GA	08/16/18	09/27/18	22840	01/23/20	28408	09/24/20
		GT	08/16/18	09/27/18	22842	02/04/20	28409	09/24/20
	Oil	OA	08/16/18	09/27/18	22841	---	28410	09/24/20
		OT	08/16/18	09/27/18	22843	---	28411	09/24/20
NJ249	Fresh Leaves & Stems	FA	10/18/18	11/27/18	22968	01/10/20	28412	09/24/20
		FB	10/18/18	11/27/18	22969	01/10/20	28413	09/24/20
		FC	10/18/18	11/27/18	22970	02/02/20	28414	09/24/20
		FD	10/18/18	11/27/18	22971	02/02/20	28415	09/24/20
	Dried Leaves & Stems	DA	10/21/18	11/27/18	22972	01/21/20	28416	09/24/20
		DB	10/21/18	11/27/18	22973	01/22/20	28417	09/24/20
		DC	10/21/18	11/27/18	22974	02/07/20	28418	09/24/20
		DD	10/21/18	11/27/18	22975	02/07/20	28419	09/24/20
	Mature seed	SA	10/03/18	11/27/18	22976	01/29/20	28420	09/24/20
		SB	10/03/18	11/27/18	22977	01/29/20	28421	09/24/20
		SC	10/03/18	11/27/18	22978	02/12/20	28422	09/24/20
		SD	10/04/18	11/27/18	22979	02/12/20	28423	09/24/20
WI388	Fresh Leaves & Stems	FA	08/03/18	08/20/18	22636	01/13/20	28424	09/24/20
		FB	08/03/18	08/20/18	22637	01/13/20	28425	09/24/20
		FC	08/03/18	08/20/18	22638	02/04/20	28426	09/24/20
		FD	08/03/18	08/20/18	22639	02/04/20	28427	09/24/20
	Dried Leaves & Stems	DA	08/03/18	08/20/18	22640	01/14/20	28428	09/24/20
		DB	08/03/18	08/20/18	22641	01/22/20	28429	09/24/20
		DC	08/04/18	08/20/18	22642	02/10/20	28430	09/24/20
		DD	08/04/18	08/20/18	22643	02/10/20	28431	09/24/20
	Mature seed	SA	09/15/18	10/23/18	22864	01/29/20	28432	09/24/20
		SB	09/15/18	10/23/18	22865	01/29/20	28433	09/24/20
		SC	09/15/18	10/23/18	22866	02/13/20	28434	09/24/20
		SD	09/15/18	10/23/18	22867	02/13/20	28435	09/24/20
	Fresh Leaves, Stems and Green Seeds	GA	08/03/18	08/20/18	22644	01/23/20	28436	09/24/20
		GT	08/03/18	08/20/18	22645	02/04/20	28437	09/24/20
	Oil	OA	08/04/18	08/20/18	22646	---	28438	09/24/20
		OT	08/04/18	08/20/18	22647	---	28439	09/24/20
FL136	Fresh Leaves & Stems	FA	07/10/18	08/07/18	22524	09/28/18	28440	09/24/20
		FB	07/10/18	08/07/18	22525	01/07/20	28441	09/24/20
		FC	07/10/18	08/07/18	22526	01/31/20	28442	09/24/20
		FD	07/10/18	08/07/18	22527	01/31/20	28443	09/24/20

Table II.1: Sample Inventory (cont.)

Field Trial	Crop Fraction	Field Sample ID	Sampling Date	Lab Receipt Date (MSU)	Lab Sample ID (MSU)	Chopping Date (MSU)	Lab Sample ID (UCD)	Lab Receipt Date (UCD)
FL136 (cont.)	Dried Leaves & Stems	DA	07/12/18	08/07/18	22528	09/28/18	28444	09/24/20
		DB	07/12/18	08/07/18	22529	01/14/20	28445	09/24/20
		DC	07/12/18	08/07/18	22530	02/06/20	28446	09/24/20
		DD	07/12/18	08/07/18	22531	02/06/20	28447	09/24/20
	Mature seed	SA	07/10/18	08/07/18	22532	09/28/18	28448	09/24/20
		SB	07/10/18	08/07/18	22533	01/24/20	28449	09/24/20
		SC	07/10/18	08/07/18	22534	02/11/20	28450	09/24/20
		SD	07/10/18	08/07/18	22535	02/11/20	28451	09/24/20
CA96	Fresh Leaves & Stems	FA	06/12/18	08/07/18	22516	01/06/20	28452	09/24/20
		FB	06/12/18	08/07/18	22517	01/06/20	28453	09/24/20
		FC	06/12/18	08/07/18	22518	01/30/20	28454	09/24/20
		FD	06/12/18	08/07/18	22519	01/30/20	28455	09/24/20
	Dried Leaves & Stems	DA	06/13/18	08/07/18	22520	01/14/20	28456	09/24/20
		DB	06/13/18	08/07/18	22521	01/14/20	28457	09/24/20
		DC	06/13/18	08/07/18	22522	02/06/20	28458	09/24/20
		DD	06/13/18	08/07/18	22523	02/06/20	28459	09/24/20
	Mature seed	SA	08/07/18	09/05/18	22706	01/23/20	28460	09/24/20
		SB	08/07/18	09/05/18	22707	01/24/20	28461	09/24/20
		SC	08/07/18	09/05/18	22708	02/11/20	28462	09/24/20
		SD	08/07/18	09/05/18	22709	02/11/20	28463	09/24/20
ID167	Fresh Leaves & Stems	FA	08/22/18	11/27/18	23023	01/09/20	28464	09/24/20
		FB	08/22/18	11/27/18	23024	01/10/20	28465	09/24/20
		FE	08/22/18	11/27/18	23027	02/05/20	28466	09/24/20
		FF	08/22/18	11/27/18	23028	02/05/20	28467	09/24/20
		FC	08/23/18	11/27/18	23025	01/31/20	28468	09/24/20
		FD	08/23/18	11/27/18	23026	01/31/20	28469	09/24/20
		FG	08/28/18	11/27/18	23029	02/05/20	28470	09/24/20
		FH	08/28/18	11/27/18	23030	02/05/20	28471	09/24/20
		FI	08/31/18	11/27/18	23031	02/05/20	28472	09/24/20
		FJ	08/31/18	11/27/18	23032	02/05/20	28473	09/24/20
	Dried Leaves & Stems	DA	08/24/18	11/27/18	23033	01/21/20	28474	09/24/20
		DB	08/24/18	11/27/18	23034	01/21/20	28475	09/24/20
		DC	08/24/18	11/27/18	23035	02/06/20	28476	09/24/20
		DD	08/24/18	11/27/18	23036	02/07/20	28477	09/24/20
	Mature Seed	SA	09/25/18	11/27/18	23037	01/24/20	28478	09/24/20
		SB	09/25/18	11/27/18	23038	01/28/20	28479	09/24/20
		SC	09/25/18	11/27/18	23039	02/11/20	28480	09/24/20
		SD	09/25/18	11/27/18	23040	02/12/20	28481	09/24/20

III. Preparation of Storage Stability Samples

Storage stability samples were prepared by the MSU laboratory and shipped to UCD with the field samples.

Table III.1: Preparation of Storage Stability Samples

Field Trial	Field Sample ID	Crop Fraction	No. Prepared	Sample Size (g)	Std #	Conc. µg/mL	µL Added	µg Added	Fort. Level ppm	Date Fortified
FL136	FA	Fresh Leaves & Stems	9	5.00	F445BG-1	1.017[1] 1.039[2]	0.50	0.5085[1] 0.5195[2]	0.1017[1] 0.1039[2]	10/18/18
FL136	DA	Dried Leaves & Stems	9	2.50	F445BG-1	1.017[1] 1.039[2]	0.25	0.25425[1] 0.25975[2]	0.1017[1] 0.1039[2]	10/18/18
FL136	SA	Mature Seed	9	2.50	F445BG-1	1.017[1] 1.039[2]	0.25	0.25425[1] 0.25975[2]	0.1017[1] 0.1039[2]	10/18/18
WA*370	OA	Oil	9	5.00	F445BG-1	1.017[1] 1.039[2]	0.50	0.5085[1] 0.5195[2]	0.1017[1] 0.1039[2]	11/30/18

Note: All samples were weighed into 50 mL PE centrifuge tubes and stored in a freezer at generally -20° C.
[1]Cyantraniliprole [2] IN-J9Z38

IV. Standard Preparation

Standards prepared for storage stability fortification at the MSU laboratory are prepared in the following manner:

Stock Solutions:
Individual stock solutions are required for each analyte. Typically, 10 mg of cyantraniliprole (DPX-HGW86) and IN-J9Z38 are accurately weighed and brought to a volume of 100 mL with acetonitrile. The final concentration is corrected for purity. Stock solutions are stored in in a freezer (at generally <0°C).

Fortification Standards:
1 µg/mL (mixed fortification standard): Transfer 1.00 mL of each stock solution and make it up to 100 mL with acetonitrile. Solutions are stored in a freezer (at generally <0°C).

Standards prepared for sample analysis at the UCD laboratory are prepared in the following manner:

Stock Solutions:
Individual stock solutions are required for each analyte. Typically, 10 mg (corrected for purity) of cyantraniliprole (DPX-HGW86) and IN-J9Z38 are accurately weighed and quantitatively transferred to a 100 mL volumetric flask. The standards are brought to volume with acetonitrile. The resulting concentration of the solutions is 100 µg/mL. These

solutions are stored in amber bottles in the refrigerator (~ 5 °C) when not in use. The solutions are good for 6 months according to the reference method.

Fortification Standards:
All solutions are stored in amber bottles in the refrigerator (~ 5 °C) when not in use. The solutions are good for 6 months according to the reference method.
10 µg/mL: Transfer 2.5 mL of the 100 µg/mL stock solutions (cyantraniliprole & IN-J9Z38) into a 25 mL volumetric flask. Bring to volume with acetonitrile. Mix well.

1.0 µg/mL: Transfer 2.5 mL of the 10 µg/mL mixed standard solution into a 25 mL volumetric flask. Bring to volume with acetonitrile. Mix well.

0.10 µg/mL: Transfer 2.5 mL of the 1.0 µg/mL mixed standard solution into a 25 mL volumetric flask. Bring to volume with acetonitrile. Mix well.

0.010 µg/mL: Transfer 2.5 mL of the 0.10 µg/mL standard solution into a 25 mL volumetric flask. Bring to volume with acetonitrile. Mix well.

LC-MS (Calibration) Standard Solutions:
All standard solutions prepared in this section are stored in amber bottles in the refrigerator (~ 5 °C) when not in use. Solutions are good for 7 days according to the reference method. Typically, the following concentrations of calibration standard solution mixtures are prepared.

0.50 pg/µL: Transfer 125 µL of 0.10 µg/mL standard solutions to a 25 mL volumetric flask. Bring to volume in 50:50 methanol:water (v/v). Mix well.

0.20 pg/µL: Transfer 500 µL of 0.010 µg/mL standard solutions to a 25 mL volumetric flask. Bring to volume in 50:50 methanol:water (v/v). Mix well. Mix well.

0.10 pg/µL: Transfer 250 µL of 0.010 µg/mL standard solutions to a 25 mL volumetric flask. Bring to volume in 50:50 methanol:water (v/v). Mix well.

0.050 pg/µL: Transfer 125 µL of 0.010 µg/mL standard solutions to a 25 mL volumetric flask. Bring to volume in 50:50 methanol:water (v/v). Mix well.

0.0250 pg/µL: Transfer 125 µL of 0.010 µg/mL standard solutions to a 50 mL volumetric flask. Bring to volume in 50:50 methanol:water (v/v). Mix well.

V. Analytical Procedure

Principle of Method

Residues of cyantraniliprole (DPX-HGW86) are extracted from fresh dill, oil, and seed with 90:10 acetonitrile-water (v/v). Following extraction, an aliquot of the extract is cleaned up using C_{18} solid phase extraction columns (SPE) and then submitted to LC-MS/MS for analysis.

For dried dill, residues of cyantraniliprole (DPX-HGW86) and IN-J9Z38 metabolite are extracted with 90:10 acetonitrile-water (v/v). Following extraction, an aliquot of the extract is cleaned up using SCX & C_{18} SPE and then submitted to LC-MS/MS for analysis.

Lowest level of method validation (LLMV) for cyantraniliprole (DPX-HGW86) and IN-J9Z38 is 0.010 ppm. The limit of detection (LOD) is defined as 10% below the smallest concentration within the standard curve, equivalent to 0.00225 ppm (cyantraniliprole), 0.0225 (IN-J0Z38 dry) and 0.0090 ppm (IN-J9Z38, oil).

Materials and Reagents

Acetonitrile, Omnisolv, EMD Chemicals
Water, Type I (Milli-Q)
Formic acid LC-MS grade, Thermo Scientific
Ammonium formate, HPLC Grade, Fisher
Methanol, Optima LC-MS grade, Fisher
SPE column: HF Mega Bond Elut C_{18} (1 g/6 mL), Agilent
SPE column: Strata SCX (0.5g/6mL), Phenomenex (for dry only)
Disposable polypropylene (PPE) centrifuge tube (50 mL, screw top), Corning and VWR
Disposable polypropylene (PPE) centrifuge tube (15 mL, screw top), Corning and VWR
Disposable glass tubes (16 x 100mm), Pyrex
Filter, 0.2 µm PTFE (13 mm), VWR International
LC columns:

1) Fresh, dry, oil, and seed (cyantraniliprole): InfinityLab Poroshell 120 Phenyl Hexyl (100 x 2.1 mm, 2.7 µm packing) with Poroshell 120 EC-C18 guard column (5 x 2.1 mm, 2.7 µm packing), Agilent Technologies
2) Dry (IN-J9Z38): Zorbax SB-C18 (50 x 2.1 mm, 1.8 µm packing) with Poroshell 120 EC-C18 guard column (5 x 2.1 mm, 4.0 µm packing), Agilent Technologies

Fresh Leaves & Stems

1. Extraction
   1.1 Weigh 5.0 g of the frozen sample into a 50 mL disposable centrifuge tube. Fortify at this point for recovery determination. Allow the solvent to dry in a fume hood for 15 min.

1.2 Add 10 mL of 90:10 acetonitrile:water (v/v), a ceramic grinding bit (ca. ½ inch in length) and shake for 2 minutes using a Geno/Grinder (700 RPM).
1.3 Centrifuge the sample at approximately 4000 rpm for 5 minutes.
1.4 Decant the supernatant into a 50 mL disposable centrifuge tube.
1.5 Add a fresh 10 mL aliquot of extraction solvent to the sample pellet and repeat steps 1.2 - 1.4.
1.6 Make extract up to 25 mL with 90:10 acetonitrile-water. Extracts are stored in the refrigerator when not in use. If fines are suspended in the final extract, the sample can be centrifuged for 5 min. at 4000 rpm prior to sample cleanup.

2. Sample Cleanup
2.1 Condition HF Mega Bond Elut C_{18} SPE column with 1 column volume (CV) of acetonitrile followed by 1 CV of water. Mild vacuum maybe used.
2.2 Transfer 0.5 mL aliquot of fresh extract to a disposable glass tube and dilute with 2 mL of water. Mix briefly.
2.3 Load sample extract to SPE column and discard the eluent.
2.4 Once the sample extract has entered the packing of the SPE column, wash the tube from step 2.2 with 5 mL of 80:20 water:acetonitrile (v/v) and add to the SPE column. Discard the eluent. Note #1
2.5 After the 80:20 water:acetonitrile wash has entered the packing, wash the SPE column with an additional 5 mL of 80:20 water:acetonitrile. Discard the eluent. Note #1
2.6 Elute cyantraniliprole with 2 CVs of 40:60 water:acetonitrile (v/v) and collect the eluent into a disposable tube. Note #1.
2.7 Dilute sample to an appropriate volume with 50:50 methanol:water and submit to LC-MS/MS for analysis. If necessary, filter the sample through a filter 0.2 µm PTFE (13 mm). Note #2

Dried Leaves & Stems

1. Extraction
1.1 Weigh 2.5 g of the frozen sample into a 50 mL disposable centrifuge tube. Fortify at this point for recovery determination. Allow the solvent to dry in a fume hood for 15 min.
1.2 Add 5 mL of water and allow sample to soak for at least 10 minutes.
1.3 Add 15 mL of 90:10 acetonitrile-water, a ceramic grinding bit (ca. ½ inch in length) and shake for 2 minutes using a Geno/Grinder (700 RPM).
1.4 Centrifuge the sample at approximately 4000 rpm for 5 minutes.
1.5 Decant the supernatant into a 50 mL graduated cylinder.
1.6 Repeat (2X) steps 1.3-1.5.
1.7 Make extract up to 50 mL with 90:10 acetonitrile:water. Extracts are stored in the refrigerator when not in use. If fines are suspended in the final extract, the sample can be centrifuged for 5 min. at 4000 rpm prior to sample cleanup.

2. Sample Cleanup
   2.1 Condition Strata SCX and HF Mega Bond Elut C_{18} SPEcolumns with 1 column volume (CV) of acetonitrile followed by 1 CV of water. Mild vacuum maybe used.
   2.2 Transfer 2 mL aliquot of extract to a disposable glass tube and dilute with 8 mL of water. Mix briefly.
   2.3 Attach C_{18} SPE column to manifold and close the valve. Add 2 mL of 80:20 water:acetonitrile (v/v) to the SPE and attach SCX SPE column with an adapter.
   2.4 Load sample extract to upper SPE column, open valve and discard the eluent.
   2.5 Once the sample extract has entered the packing of the upper SPE column, wash the tube from step 2.2 with 5 mL of 80:20 water:acetonitrile (v/v) and add to the SPE column. Discard the eluent.
   2.6 Once the wash has entered the packing of the upper SPE column, wash the column with 1 CV of 80:20 water:acetonitrile (v/v). Discard eluent. Note #1
   2.7 After the last of the sample has entered the upper SPE column, remove the upper column and allow the remaining sample to load to the lower SPE column.
   2.8 Elute cyantraniliprole and IN-J9Z38 with 2 CVs of 40:60 water:acetonitrile (v/v) and collect the eluent into a disposable tube. Note #1
   2.9 Dilute sample to an appropriate volume with 50:50 methanol:water and submit to LC-MS/MS for analysis. If necessary, filter the sample through a filter 0.2 µm PTFE (13 mm). Note #2

Dill Seed

1. Extraction
   1.1 Weigh 2.5 g of the frozen sample into a 50 mL disposable centrifuge tube. Fortify at this point for recovery determination. Allow the solvent to dry in a fume hood for 15 min.
   1.2 Add 5 of water and allow sample to soak for at least 10 minutes
   1.3 Add 15 mL of 90:10 acetonitrile:water (v/v), a ceramic grinding bit (ca. ½ inch in length) and shake for 2 minutes using a Geno/Grinder (700 RPM).
   1.4 Centrifuge the sample at approximately 4000 rpm for 5 minutes.
   1.5 Decant the supernatant into a 50 mL disposable centrifuge tube.
   1.6 Repeat (2X) steps 1.3 to 1.5
   1.7 Make extract up to 50 mL with 90:10 acetonitrile-water. Extracts are stored in the refrigerator when not in use. If fines are suspended in the final extract, the sample can be centrifuged for 5 min. at 4000 rpm prior to sample cleanup.

2. Cleanup
   2.1 Condition HF Mega Bond Elut C_{18} SPE column with 1 column volume (CV) of acetonitrile followed by 1 CV of water. Mild vacuum maybe used.
   2.2 Transfer 2.0 mL aliquot of fresh extract to a disposable glass tube and dilute with 8 mL of water. Mix briefly.
   2.3 Load sample extract to SPE column and discard the eluent.
   2.4 Once the sample extract has entered the packing of the SPE column, wash the tube from step 2.2 with 5 mL of 80:20 water:acetonitrile (v/v) and add to the column. Discard the eluent. Note #1

2.5 After the 80:20 water:acetonitrile wash has entered the packing, wash the SPE column with an additional 5 mL of 80:20 water:acetonitrile. Discard the eluent. Note #1
2.6 Elute cyantraniliprole with 2 CVs of 40:60 water:acetonitrile (v/v) and collect the eluent into a disposable tube. Note #1
2.7 Dilute sample to an appropriate volume with 50:50 methanol:water and submit to LC-MS/MS for analysis. If necessary, filter the sample through a filter 0.2 µm PTFE (13 mm). Note #2

Dill Oil

1. Extraction
   1.1 Weigh 1.0 g of the thawed sample into a 15 mL disposable centrifuge tube. Fortify at this point for recovery determination. Add 5 of water and allow sample to soak for at least 10 minutes
   1.2 Dilute sample to 10 mL with 90:10 acetonitrile-water (v/v) and mix briefly.

2. Sample Cleanup
   2.1 Condition HF Mega Bond Elut C_{18} SPE column with 1 column volume (CV) of acetonitrile followed by 1 CV of water. After conditioning, close SPE valve. Mild vacuum maybe used.
   2.2 Transfer 1 mL aliquot of sample extract directly to the C_{18} SPE column.
   2.3 Open the SPE manifold valve and begin collecting eluent into a disposable tube.
   2.4 Once the initial load has entered the packing of the SPE column continue elution with 2 CVs of 40:60 water:acetonitrile (v/v) into the disposable tube from step 2.3. Note #1
   2.5 Dilute sample to an appropriate volume with 50:50 methanol:water and submit to LC-MS/MS for analysis. If necessary, filter the sample through a filter 0.2 µm PTFE (13 mm). Note #2

Modifications

1. Reduce initial sample for fresh Dill from 10 g to 5.0 g and reduced extraction solvent volume accordingly. Only a small aliquot is necessary for cleanup and reduction in sample size saves solvent.
2. Reduce water addition to dry Dill and seed from 10 to 5 mL. Five mL allows for adequate hydration of dry Dill and allows for a final volume of 50 mL following extraction.
3. Reduce initial sample for oil from 5.0 g to 1.0 g and diluted to 10 mL with extraction solvent. Since the oil is already an extracted sample, the single use of extraction solvent serves to solubilize the oil for cleanup. As only a small aliquot of the initial sample is necessary for cleanup the reduction in sample size reduces the overall usage of the limited Oil sample.
4. After each extraction (fresh, dry, and seed), sample was centrifuged at 4000 rpm for 5 minutes instead of 5 minutes at 3000 rpm. With a higher speed the solids can be separated more efficiently.
5. To minimize matrix effects (enhancement or suppression), samples were cleaned with C_{18} SPE instead of SAX SPE.

6. Modified mobile phase composition to aid in preparation and optimize chromatography on LC-MS/MS.

Notes

1. May adjust elution solvent to account for SPE variability between boxes and lots.
2. Typically, fortification samples at LLMV (0.010 ppm) and unknowns will be diluted 20 mL with 50:50 methanol:water.
3. For IN-J9Z38 analysis, treated samples will be diluted shortly before analysis. Previous work suggests that the large cyantraniliprole residues present might be degrading into IN-J9Z38 in the autosampler vial while waiting for analysis (on the order of 2-3 hours). This effect was not apparent in the clean extracts stored in PPE tubes.

VI. Quantitation:

Calculations:

Prepare a five-point standard curve by injecting constant volumes of standard solutions. Use constant volume injections for sample extracts as well. . If the sample injections are not within 10% of the standard curve, adjust the volume accordingly so the response falls within the curve. Samples will not be adjusted below the equivalent volume of the LLMV. Inject a calibration standard at least every 4-5 sample injections. Calculations for instrumental analysis are conducted by Agilent "MassHunter" software to create a standard curve based on linear regression. The regression functions are used to calculate a best fit line (from a set of standard concentrations in pg/µL versus peak response) and to determine concentrations of the analyte found during sample analysis from the calculated best fit line.

The equation used for the least squares fit is: $y = mx + b$, where y=peak response, x = pg/µL found for peak of interest, m= slope and b= y-intercept.
Control samples are fortified with known amounts of standard prior to extraction.

Percent recovery (if calculated by measuring the peak area) is calculated as shown by example:

$$\frac{\text{pg/µL determined X µL injected}}{\text{mg crop injected * 1000 conv. factor}} = \text{ppm found}$$

$$\frac{\text{ppm found}}{\text{ppm expected}} \times 100\% = \% \text{ Recovery}$$

Example Calculation (Cyantraniliprole):

Sample FA-CA96 28452V0.01R1 (03232021a030.d)

$$\frac{0.0515\ \text{pg}/\mu\text{L} \times 15\ \mu\text{L injected}}{0.0750\ \text{mg injected} * 1000} = 0.0103\ \text{ppm found}$$

$$\frac{0.0103\ \text{ppm}}{0.010\ \text{ppm}} \times 100\% = 103\ \%\ \text{Recovery}$$

Instrument Parameters:

Instrumentation:	"Falcon" Agilent 6460 LC-MS/MS
Autosampler:	Agilent 1290 Infinity II
Pumps:	Agilent 1260 Infinity II
Column Compartment:	Agilent 1260 Infinity II
Data System:	Agilent "MassHunter" software on a computer running Windows 10. Data exported to Microsoft "Excel".
Mobile Phase A:	0.01% formic acid and 5 mM ammonium formate in water
Mobile Phase B:	0.01% formic acid and 5 mM ammonium formate in methanol
Column temperature:	45 °C
Injection size:	15 µL
LC-MS/MS Interface:	Jet Stream Electrospray (ESI)
Mode:	Positive Ionization
Gas Temperature:	300 °C
Gas Flow:	10 L/min (N_2)
Nebulizer:	45 psi (N_2)
Sheath Gas Temperature:	250 °C
Sheath Gas Flow:	11 (L/min)
Nozzle Voltage:	500 V
Capillary:	4000 V (+)

Analyte Parameters:

Compound	Transition	Q1 (m/z)	Q2 (m/z)	Dwell	Frag (V)	CE (V)	Rt (min) Fresh	Rt (min) Dry	Rt (min) Oil
Cyantraniliprole	Primary	475	286	200	105	8	4.7	4.7	4.7
	Secondary	475	444	200	105	12	4.7	4.7	4.7
IN-J9Z38	Primary	457	188	200	200	34	N/A	1.7	6.2
	Secondary	457	112	200	200	60	N/A	1.7	6.2

Gradient Program (Fresh):

Total Time (min)	Flow Rate (mL/min)	Solvent A (%)	Solvent B (%)
0.00	0.500	60	40
0.50	0.500	60	40
6.00	0.500	1.0	99
15.00	0.500	1.0	99
15.10	0.500	60	40
20.00	0.500	60	40

Diverter Valve Program (Fresh):

Total Time (min)	Valve Position
0.0	Waste
4.0	MS
6.0	Waste

Gradient Program (Dry, Seed-Cyantraniliprole):

Total Time (min)	Flow Rate (mL/min)	Solvent A (%)	Solvent B (%)
0.00	0.500	60	40
0.50	0.500	60	40
6.00	0.500	1.0	99
15.00	0.500	1.0	99
15.10	0.500	60	40
20.00	0.500	60	40

Diverter Valve Program (Dry-Cyantraniliprole):

Total Time (min)	Valve Position
0.0	Waste
4.0	MS
6.0	Waste

Gradient Program (Dry-IN-J9Z38):

Total Time (min)	Flow Rate (mL/min)	Solvent A (%)	Solvent B (%)
0.00	0.500	35	65
3.00	0.500	35	65

Diverter Valve Program (Dry-IN-J9Z38):

Total Time (min)	Valve Position
0.0	Waste
1.3	MS

Gradient Program (Oil):

Total Time (min)	Flow Rate (mL/min)	Solvent A (%)	Solvent B (%)
0.00	0.500	60	40
0.50	0.500	60	40
6.00	0.500	1.0	99
15.00	0.500	1.0	99
15.10	0.500	60	40
20.00	0.500	60	40

Diverter Valve Program (Oil):

Total Time (min)	Valve Position
0.0	Waste
4.0	MS
6.7	Waste

Diverter program, column wash and re-equilibration may be adjusted as column ages and retention time shifts.

VII. Results and Discussion:

Results are reported below as ppm cyantraniliprole and IN-J9Z38. There were out of range recoveries of IN-J9Z38 for oil at 0.01 pm. After the initial validation attempt, the final extracts were further diluted which yielded improved recoveries of 64% and 63%. Due to the complex nature of the oil matrix, the low method validation recoveries were accepted by the Study Director. The other out of range recovery (concurrent recovery at 121%) may have been caused by enhancement due to matrix effects and was also approved by the Study Director.

Table VII.1.1: Summary of Recoveries, Cyantraniliprole

Crop Fraction	Spike Level ppm	Lab Sample ID	Type of Recovery[1]	Cyantraniliprole Found ppm	Average ppm	Recoveries (%)	Average Recovery (%)[2]
Fresh Leaves & Stems	0.01	28452V0.01R1	MV	0.0104	0.00817	104	82±12
		28452V0.01R2	MV	0.00820		82	
		28452V0.01R3	MV	0.00777		78	
		28452V0.01R4	MV	0.00816		82	
		28452V0.01R5	MV	0.00750		75	
		28452V0.01R6	MV	0.00699		70	
	0.1	28452V0.1R1	MV	0.0779	0.0892	78	89±11
		28452V0.1R2	MV	0.0869		87	
		28452V0.1R3	MV	0.0785		79	
		28464C0.1R1	CR	0.0809		81	
		28440C0.1R2	SSCR	0.0989		99	
		28440C0.1R3	SSCR	0.0965		97	
		28440C0.1R4	SSCR	0.105		105	
	5.0	28452V5.0R1	MV	4.59	4.31	92	86±8
		28452V5.0R2	MV	4.58		92	
		28452V5.0R3	MV	3.94		79	
		28464C5.0R1	CR	4.70		94	
		28412C5.0R2	CR	4.35		87	
		28412C5.0R3	CR	4.73		95	
		28408C5.0R4	CR	3.68		74	
		28408C5.0R5	CR	3.87		77	
	25	28440C25R1	CR	23.0	23.8	92	95±4
		28440C25R2	CR	24.9		100	
		28440C25R3	CR	23.5		94	
Dried Leaves & Stems	0.01	28444V0.01R1	MV	0.0111	0.0105	111	105±7
		28444V0.01R2	MV	0.00979		98	
		28444V0.01R3	MV	0.00935		94	
		28444V0.01R4	MV	0.0110		110	
		28444V0.01R5	MV	0.0111		111	
		28444V0.01R6	MV	0.0108		108	
	0.1	28444V0.1R1	MV	0.0831	0.0828	83	83±8
		28444V0.1R2	MV	0.0812		81	
		28444V0.1R3	MV	0.0774		77	
		28400C0.1R1	CR	0.0827		83	
		28416C0.1R2	CR	0.0745		75	
		28416C0.1R3	CR	0.0753		75	
		28444C0.1R4	SSCR	0.0920		92	
		28444C0.1R5	SSCR	0.0820		82	
		28444C0.1R6	SSCR	0.0969		97	

Table VII.1.1: Summary of Recoveries, Cyantraniliprole (cont.)

Crop Fraction	Spike Level ppm	Lab Sample ID	Type of Recovery[1]	Cyantraniliprole Found ppm	Average ppm	Recoveries (%)	Average Recovery (%)2
Dried Leaves & Stems (cont.)	5.0	28444V5.0R1	MV	4.00	4.07	80	81±4
		28444V5.0R2	MV	4.22		84	
		28444V5.0R3	MV	4.24		85	
		28400C5.0R1	CR	3.81		76	
	100	28416C100R1	CR	99.4	95.3	99	95±15
		28416C100R2	CR	108		108	
		28416C100R3	CR	78.5		78	
Mature seed	0.01	28460V0.01R1	MV	0.00894	0.00843	89	84±7
		28460V0.01R2	MV	0.00799		80	
		28460V0.01R3	MV	0.00840		84	
		28460V0.01R4	MV	0.00857		86	
		28460V0.01R5	MV	0.00928		93	
		28460V0.01R6	MV	0.00738		74	
	0.1	28460V0.1R1	MV	0.0846	0.0892	85	89±14
		28460V0.1R2	MV	0.0732		73	
		28460V0.1R3	MV	0.0714		71	
		28478C0.1R1	CR	0.0996		100	
		28448C0.1R2	SSCR	0.105		105	
		28448C0.1R3	SSCR	0.104		104	
		28448C0.1R4	SSCR	0.0863		86	
	5.0	28460V5.0R1	MV	4.01	4.46	80	89±7
		28460V5.0R2	MV	4.61		92	
		28460V5.0R3	MV	4.83		97	
		28478C5.0R1	CR	4.37		87	
	50	28420C50R1	CR	41.6	46.8	83	94±9
		28420C50R2	CR	49.8		100	
		28420C50R3	CR	48.9		98	
Oil	0.01	28410V0.01R1	MV	0.00866	0.00890	87	89±11
		28410V0.01R2	MV	0.0102		102	
		28410V0.01R3	MV	0.0101		101	
		28438C0.01R1	CR	0.00767		77	
		28438C0.01R2	CR	0.00908		91	
		28438C0.01R3	CR	0.00768		77	
	0.1	28410V0.1R1	MV	0.0834	0.0921	83	92±12
		28410V0.1R2	MV	0.0927		93	
		28410V0.1R3	MV	0.111		111	
		28410C0.1R1	SSCR	0.0987		99	
		28410C0.1R2	SSCR	0.0873		87	
		28410C0.1R3	SSCR	0.0793		79	
	5.0	28410V5.0R1	MV	4.32	4.54	86	91±5
		28410V5.0R2	MV	4.79		96	
		28410V5.0R3	MV	4.50		90	

[1]MV=Method Validation, CR=Concurrent Recovery, SSCR=Storage Stability Concurrent Recovery
[2]Average % recovery and standard deviation calculations are based on rounded % recoveries.

Table VII.1.2: Summary of Recoveries, IN-J9Z38

Crop Fraction	Spike Level ppm	Lab Sample ID	Type of Recovery[1]	IN-J9Z38 Found ppm	Average ppm	Recoveries (%)	Average Recovery (%)[2]
Dried Leaves & Stems	0.01	28444V0.01R1	MV	0.0103	0.00971	103	97±5
		28444V0.01R2	MV	0.0103		103	
		28444V0.01R3	MV	0.00949		95	
		28444V0.01R4	MV	0.00912		91	
		28444V0.01R5	MV	0.00945		94	
		28444V0.01R6	MV	0.00958		96	
	0.1	28444V0.1R1	MV	0.0968	0.0945	97	95±11
		28444V0.1R2	MV	0.0775		78	
		28444V0.1R3	MV	0.0752		75	
		28400C0.1R1	CR	0.0983		98	
		28416C0.1R2	CR	0.0997		100	
		28416C0.1R3	CR	0.0985		99	
		28444C0.1R4	SSCR	0.105		105	
		28444C0.1R5	SSCR	0.0996		100	
		28444C0.1R6	SSCR	0.100		100	
	5.0	28444V5.0R1	MV	4.42	4.52	88	90±5
		28444V5.0R2	MV	4.42		88	
		28444V5.0R3	MV	4.38		88	
		28400C5.0R1	CR	4.87		97	
	10	28429C10R1	CR	9.00	9.15	90	92±2
		28429C10R2	CR	9.36		94	
		28429C10R3	CR	9.09		91	
Oil	0.01	28410V0.01R1	MV	0.00717	0.00903	72	90±27
		28410V0.01R2	MV	0.00639		64	
		28410V0.01R3	MV	0.00629		63	
		28438C0.01R1	CR	0.0107		107	
		28438C0.01R2	CR	0.0115		115	
		28438C0.01R3	CR	0.0121		121	
	0.1	28410V0.1R1	MV	0.0919	0.0922	92	92±8
		28410V0.1R2	MV	0.0864		86	
		28410V0.1R3	MV	0.0807		81	
		28410C0.1R1	SSCR	0.0955		95	
		28410C0.1R2	SSCR	0.0944		94	
		28410C0.1R3	SSCR	0.104		104	
	5.0	28410V5.0R1	MV	4.87	4.85	97	97±4
		28410V5.0R2	MV	4.65		93	
		28410V5.0R3	MV	5.03		101	

[1]MV=Method Validation, CR=Concurrent Recovery, SSCR=Storage Stability Concurrent Recovery
[2]Average % recovery and standard deviation calculations are based on rounded % recoveries.

Table VII.2.1: Summary of Storage Stability, Cyantraniliprole

Crop Fraction	Lab Sample ID	Storage Stability Recoveries		Date Fortified	Date Extracted	Maximum Actual Samples Storage Duration (days) [2]	Limit of Demonstrated Storage Stability (days) [3]
		ppm[1]	(%)				
Fresh Leaves & Stems	28440S0.1R1	0.111	109	10/18/18	04/21/21	1017	916
	28440S0.1R2	0.0819	81				
	28440S0.1R3	0.0746	73				
Dried Leaves & Stems	28444S0.1R10	0.0792	78	10/18/18	05/26/21	1058	951
	28444S0.1R11	0.0904	89				
	28444S0.1R12	0.0782	77				
Mature Seed	28448S0.1R19	0.0873	86	10/18/18	04/15/21	1003	910
	28448S0.1R20	0.0963	95				
	28448S0.1R21	0.0835	82				
Oil	28410S0.1R28	0.0810	80	11/30/18	06/17/21	1034	930
	28410S0.1R29	0.0788	77				
	28410S0.1R30	0.0797	78				

[1]Samples were fortified at 0.1017 ppm
[2]Calculated from sampling to extraction of treated samples
[3]Calculated from fortification to extraction

Table VII.2.2: Summary of Storage Stability, IN-J9Z38

Crop Fraction	Lab Sample ID	Storage Stability Recoveries		Date Fortified	Date Extracted	Maximum Actual Samples Storage Duration (days) [2]	Limit of Demonstrated Storage Stability (days) [3]
		ppm[1]	(%)				
Dried Leaves & Stems	28444S0.1R10	0.110	106	10/18/18	05/26/21	1058	951
	28444S0.1R11	0.106	102				
	28444S0.1R12	0.106	102				
Oil	28410S0.1R28	0.0775	75	11/30/18	06/17/21	1034	930
	28410S0.1R29	0.0707	68				
	28410S0.1R30	0.0709	68				

[1]Samples were fortified at 0.1039 ppm
[2]Calculated from sampling to extraction of treated samples
[3]Calculated from fortification to extraction

Table VII.3: Residue Data Results, Cyantraniliprole and IN-J9Z38

Trial ID	Crop Fraction	Field Sample ID	Lab Sample ID	Sampling Date	Extraction Date	Analysis Date[1]		Storage Interval[2]	Residue Results (ppm)	
						Cyantraniliprole	IN-J9Z38		Cyantraniliprole	IN-J9Z38
WA*370	Fresh Leaves & Stems	FA	28396	07/16/18	03/30/21	03/30/21	N/A		<0.010	---
		FB	28397	07/16/18	N/A	N/A	N/A		---	---
		FC	28398	07/18/18	03/30/21	03/30/21	N/A	986	2.2	---
		FD	28399	07/18/18	03/30/21	03/30/21	N/A	986	2.3	---
	Dried Leaves & Stems	DA	28400	07/17/18	05/06/21	05/06/21	05/06/21		<0.010	<0.010
		DB	28401	07/17/18	N/A	N/A	N/A		---	---
		DC	28402	07/19/18	05/06/21	05/06/21	05/06/21	1022	18	0.25
		DD	28403	07/19/18	05/06/21	05/06/21	05/06/21	1022	13	0.22
	Mature seed	SA	28404	09/05/18	04/08/21	04/08/21	N/A		<0.010	---
		SB	28405	09/05/18	N/A	N/A	N/A		---	---
		SC	28406	09/05/18	04/08/21	04/08/21	N/A	946	14	---
		SD	28407	09/05/18	04/08/21	04/08/21	N/A	946	17	---
	Fresh Leaves, Stems and Green Seeds	GA	28408	08/16/18	04/16/21	04/16/21	N/A	974	<0.010	---
		GT	28409	08/16/18	04/16/21	04/16/21	N/A	974	3.2	---
	Oil	OA	28410	08/16/18	05/21/21	05/21/21	05/21/21		<0.010	<0.010
						N/A	05/27/21		---	<0.010
					06/17/21	06/17/21	06/17/21		<0.010	<0.010
		OT	28411	08/16/18	06/03/21	06/03/21	06/03/21	1022	<0.010	<0.010
NJ249	Fresh Leaves & Stems	FA	28412	10/18/18	04/02/21	04/02/21	N/A		<0.010	---
		FB	28413	10/18/18	N/A	N/A	N/A		---	---
		FC	28414	10/18/18	04/02/21	04/02/21	N/A	897	7.3	---
		FD	28415	10/18/18	04/02/21	04/02/21	N/A	897	8.8	---
	Dried Leaves & Stems	DA	28416	10/21/18	05/13/21	05/13/21	05/13/21		<0.010	<0.010
		DB	28417	10/21/18	N/A	N/A	N/A		---	---
		DC	28418	10/21/18	05/13/21	05/13/21	05/13/21	935	59	4.9
		DD	28419	10/21/18	05/13/21	05/13/21	05/13/21	935	44	5.5
	Mature seed	SA	28420	10/03/18	04/12/21	04/12/21	N/A		<0.010	---
		SB	28421	10/03/18	N/A	N/A	N/A		---	---
		SC	28422	10/03/18	04/12/21	04/12/21	N/A	922	24	---
		SD	28423	10/04/18	04/12/21	04/12/21	N/A	921	22	---

Table VII.3: Residue Data Results, Cyantraniliprole and IN-J9Z38 (cont.)

Trial ID	Crop Fraction	Field Sample ID	Lab Sample ID	Sampling Date	Extraction Date	Analysis Date[1]		Storage Interval[2]	Residue Results (ppm)	
						Cyantraniliprole	IN-J9Z38		Cyantraniliprole	IN-J9Z38
WI388	Fresh Leaves & Stems	FA	28424	08/03/18	03/30/21	03/30/21	N/A		<0.010	---
		FB	28425	08/03/18	N/A	N/A	N/A		---	---
		FC	28426	08/03/18	03/30/21	03/30/21	N/A	970	4.7	---
		FD	28427	08/03/18	03/30/21	03/30/21	N/A	970	2.7	---
	Dried Leaves & Stems	DA	28428	08/03/18	05/13/21	05/13/21	05/13/21		<0.010	<0.010
		DB	28429	08/03/18	05/14/21	---	05/14/21		N/A	<0.010
		DC	28430	08/04/18	05/13/21	05/13/21	05/13/21	1013	15	0.31
		DD	28431	08/04/18	05/13/21	05/13/21	05/13/21	1013	8.6	0.24
	Mature seed	SA	28432	09/15/18	04/12/21	04/12/21	N/A		<0.010	---
		SB	28433	09/15/18	N/A	N/A	N/A		---	---
		SC	28434	09/15/18	04/12/21	04/12/21	N/A	940	32	---
		SD	28435	09/15/18	04/12/21	04/12/21	N/A	940	47	---
	Fresh Leaves, Stems and Green Seeds	GA	28436	08/03/18	04/16/21	04/16/21	N/A	987	<0.010	---
		GT	28437	08/03/18	04/16/21	04/16/21	N/A	987	3.4	---
	Oil	OA	28438	08/04/18	06/03/21	06/03/21	06/03/21	1034	<0.010	<0.010
		OT	28439	08/04/18	06/03/21	06/03/21	06/03/21	1034	<0.010	<0.010
FL136	Fresh Leaves & Stems	FA	28440	07/10/18	03/30/21	03/30/21	N/A		<0.010	---
					04/21/21	04/21/21	N/A		<0.010	---
		FB	28441	07/10/18	N/A	N/A	N/A		---	---
		FC	28442	07/10/18	03/30/21	03/30/21	N/A	994	1.5	---
		FD	28443	07/10/18	03/30/21	03/30/21	N/A	994	1.2	---
	Dried Leaves & Stems	DA	28444	07/12/18	04/29/21	05/01/21	04/29/21		<0.010	<0.010
					05/26/21	05/26/21	05/26/21		<0.010	<0.010
		DB	28445	07/12/18	N/A	N/A	N/A		---	---
		DC	28446	07/12/18	05/06/21	05/06/21	05/06/21	1029	4.6	0.97
		DD	28447	07/12/18	05/06/21	05/06/21	05/06/21	1029	3.3	0.80
	Mature seed	SA	28448	07/10/18	04/08/21	04/08/21	N/A		<0.010	---
					04/15/21	04/15/21	N/A		<0.010	---
		SB	28449	07/10/18	N/A	N/A	N/A		---	---
		SC	28450	07/10/18	04/08/21	04/08/21	N/A	1003	9.5	---
		SD	28451	07/10/18	04/08/21	04/08/21	N/A	1003	10	---

Table VII.3: Residue Data Results, Cyantraniliprole and IN-J9Z38 (cont.)

Trial ID	Crop Fraction	Field Sample ID	Lab Sample ID	Sampling Date	Extraction Date	Analysis Date[1]		Storage Interval[2]	Residue Results (ppm)	
						Cyantraniliprole	IN-J9Z38		Cyantraniliprole	IN-J9Z38
CA96	Fresh Leaves & Stems	FA	28452	06/12/18	03/22/21	03/23/21	N/A		<0.010	---
		FB	28453	06/12/18	N/A	N/A	N/A		---	---
		FC	28454	06/12/18	03/25/21	03/25/21	N/A	1017	13	---
		FD	28455	06/12/18	03/25/21	03/25/21	N/A	1017	7.5	---
	Dried Leaves & Stems	DA	28456	06/13/18	05/06/21	05/06/21	05/06/21		<0.010	<0.010
		DB	28457	06/13/18	N/A	N/A	N/A		---	---
		DC	28458	06/13/18	05/06/21	05/06/21	05/06/21	1058	53	0.42
		DD	28459	06/13/18	05/06/21	05/06/21	05/06/21	1058	74	0.58
	Mature seed	SA	28460	08/07/18	04/05/21	04/05/21	N/A		<0.010	---
		SB	28461	08/07/18	N/A	N/A	N/A		---	---
		SC	28462	08/07/18	04/08/21	04/08/21	N/A	975	47	---
		SD	28463	08/07/18	04/08/21	04/08/21	N/A	975	38	---
ID167	Fresh Leaves & Stems	FA	28464	08/22/18	03/25/21	03/25/21	N/A		<0.010	---
		FB	28465	08/22/18	N/A	N/A	N/A		---	---
		FE	28466	08/22/18	03/25/21	03/25/21	N/A	946	7.2	---
		FF	28467	08/22/18	03/25/21	03/25/21	N/A	946	7.8	---
		FC	28468	08/23/18	03/25/21	03/25/21	N/A	945	6.4	---
		FD	28469	08/23/18	03/25/21	03/25/21	N/A	945	6.3	---
		FG	28470	08/28/18	03/25/21	03/25/21	N/A	940	0.53	---
		FH	28471	08/28/18	03/25/21	03/25/21	N/A	940	0.39	---
		FI	28472	08/31/18	03/25/21	03/25/21	N/A	937	0.34	---
		FJ	28473	08/31/18	03/25/21	03/25/21	N/A	937	0.21	---
	Dried Leaves & Stems	DA	28474	08/24/18	05/06/21	05/06/21	05/06/21		<0.010	<0.010
		DB	28475	08/24/18	N/A	N/A	N/A		---	---
		DC	28476	08/24/18	05/06/21	05/06/21	05/06/21	986	14	0.060
		DD	28477	08/24/18	05/06/21	05/06/21	05/06/21	986	9.1	0.052
	Mature Seed	SA	28478	09/25/18	04/08/21	04/08/21	N/A		<0.010	---
		SB	28479	09/25/18	N/A	N/A	N/A		---	---
		SC	28480	09/25/18	04/08/21	04/08/21	N/A	926	10	---
		SD	28481	09/25/18	04/08/21	04/08/21	N/A	926	14	---

N/A=Not Analyzed

[1]The Analysis Date is the date of the first injection of the analytical run.

[2]Storage Interval calculated from sampling to extraction of treated samples.

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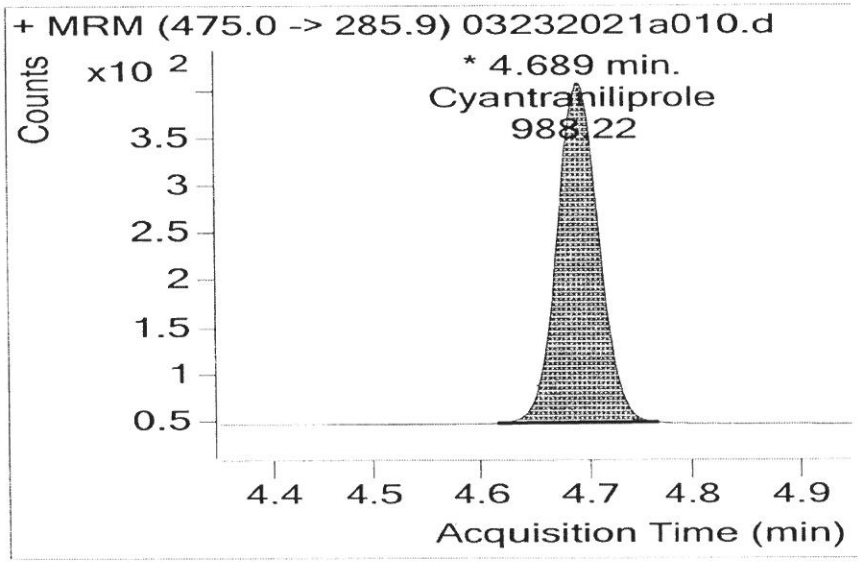
K. Treated Samples 112

Each chromatogram represents a 15.0 µL injection.
An asterisk (*) next to the retention time on a chromatogram indicates that the peak was manually integrated.

Acq Time	3/23/2021 14:32	**Data File**	03232021a010.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	718-2M25 0.50 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 1		

Compound Graphics

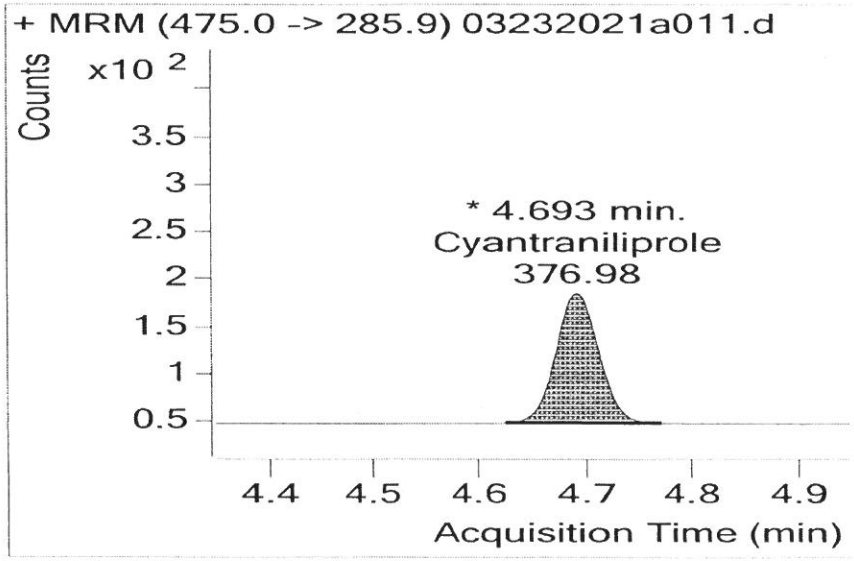
Cyantraniliprole



Acq Time	3/23/2021 14:53	**Data File**	03232021a011.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	718-2M26 0.20 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 2		

Compound Graphics

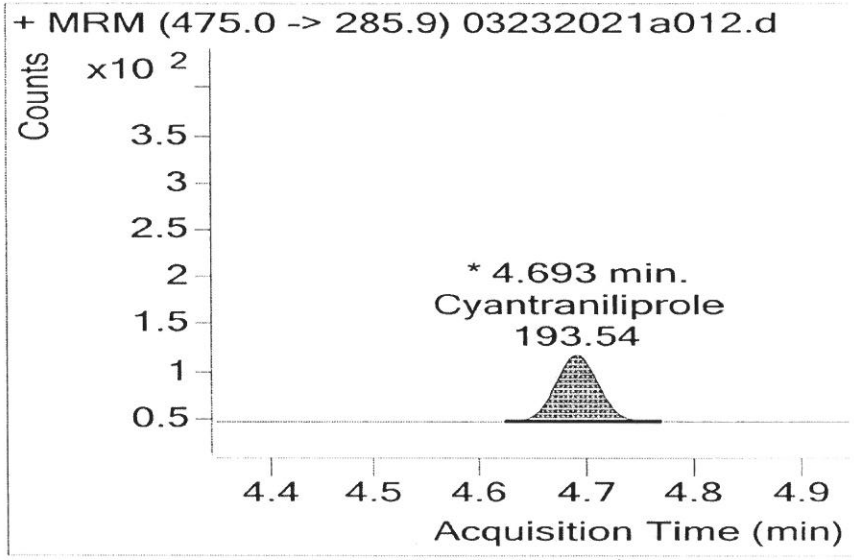
Cyantraniliprole



Acq Time	3/23/2021 15:13	**Data File**	03232021a012.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	718-2M27 0.10 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 3		

Compound Graphics

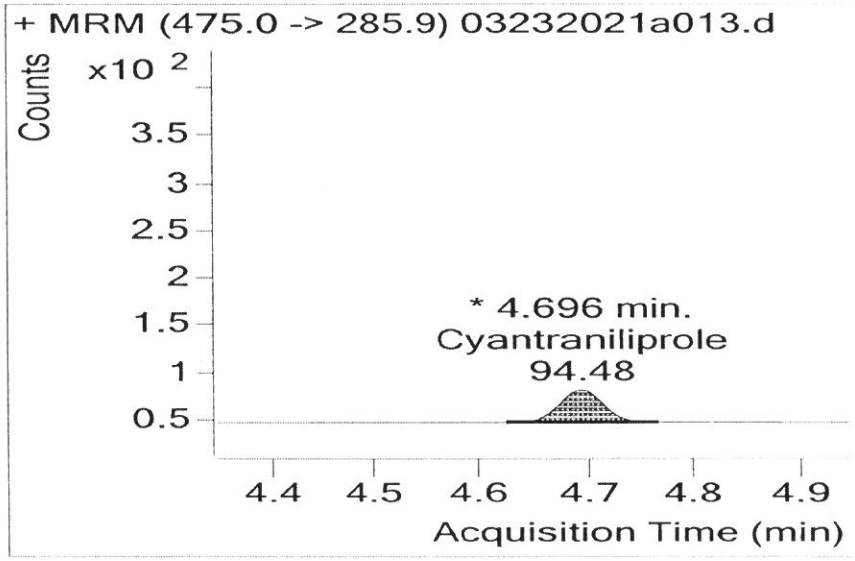
Cyantraniliprole



Acq Time	3/23/2021 15:34	**Data File**	03232021a013.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	718-2M28 0.050 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 4		

Compound Graphics

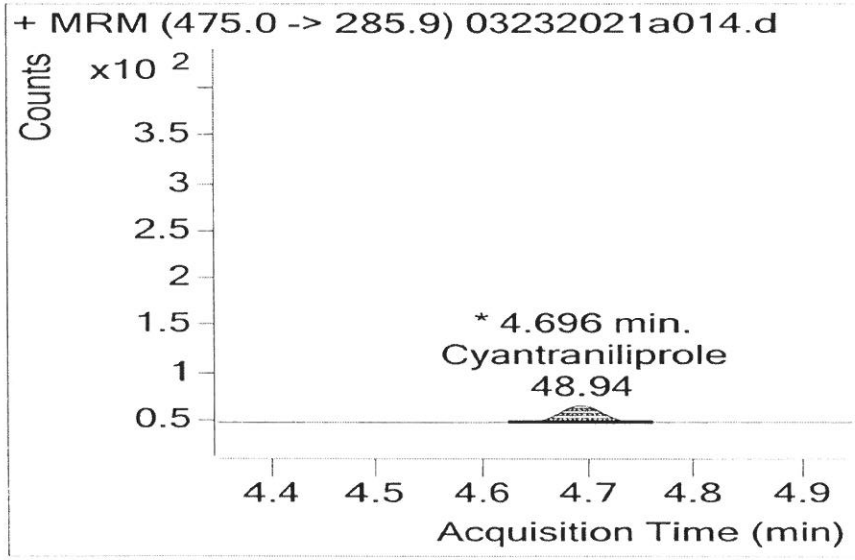
Cyantraniliprole



Acq Time	3/23/2021 15:54	**Data File**	03232021a014.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	718-2M29 0.0250 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 5		

Compound Graphics

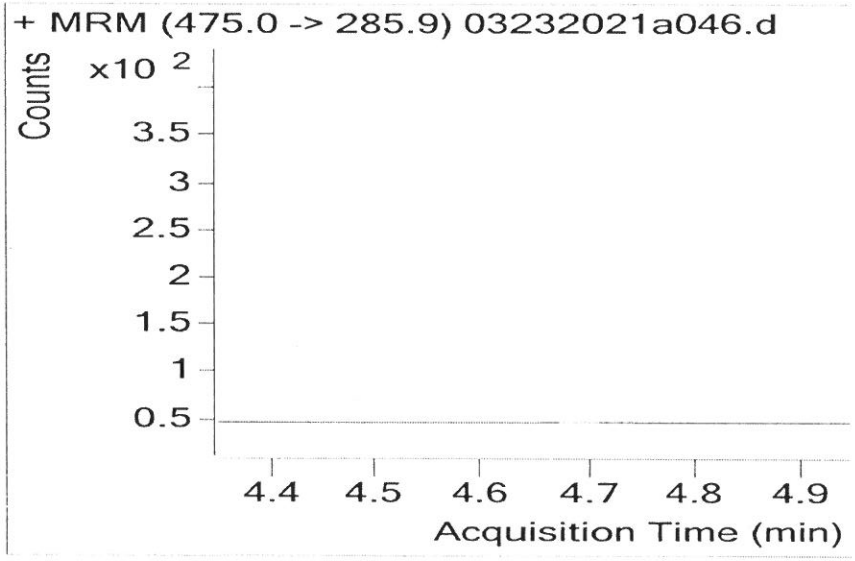
Cyantraniliprole



Acq Time	3/24/2021 2:53	**Data File**	03232021a046.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28452
Sample Info	FA-CA96	**Sample Type**	Sample
Position	P1-B4		

Compound Graphics

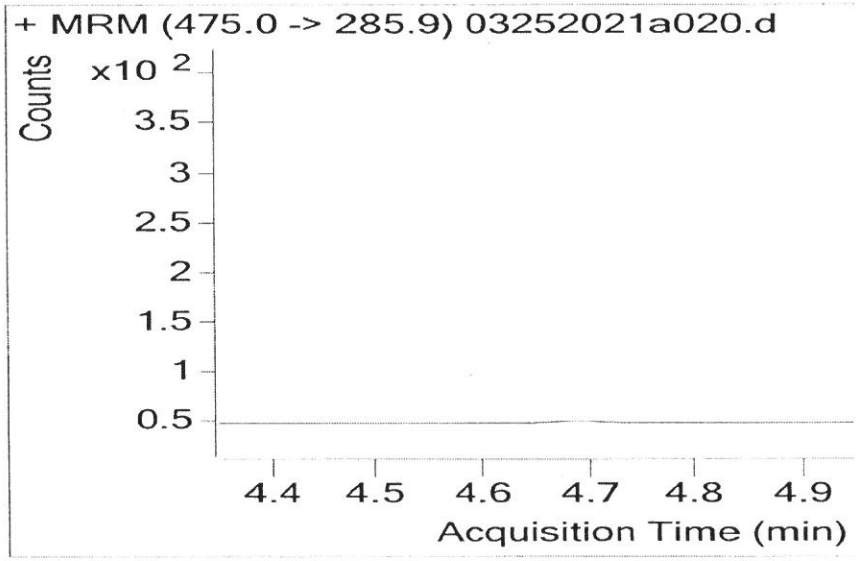
Cyantraniliprole



Acq Time	3/25/2021 17:44	**Data File**	03252021a020.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28464
Sample Info	FA-ID167	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

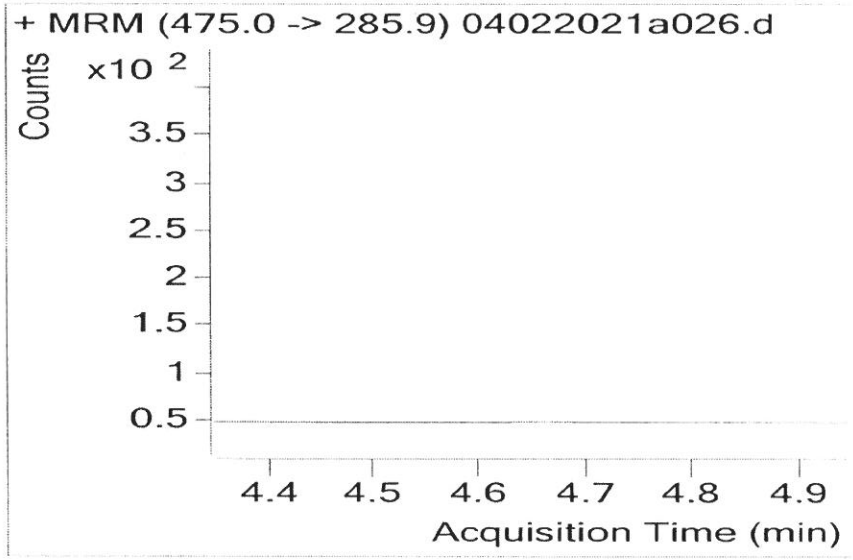
Cyantraniliprole



Acq Time	4/2/2021 19:58	**Data File**	04022021a026.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28412
Sample Info	FA-NJ249	**Sample Type**	Sample
Position	P1-A5		

Compound Graphics

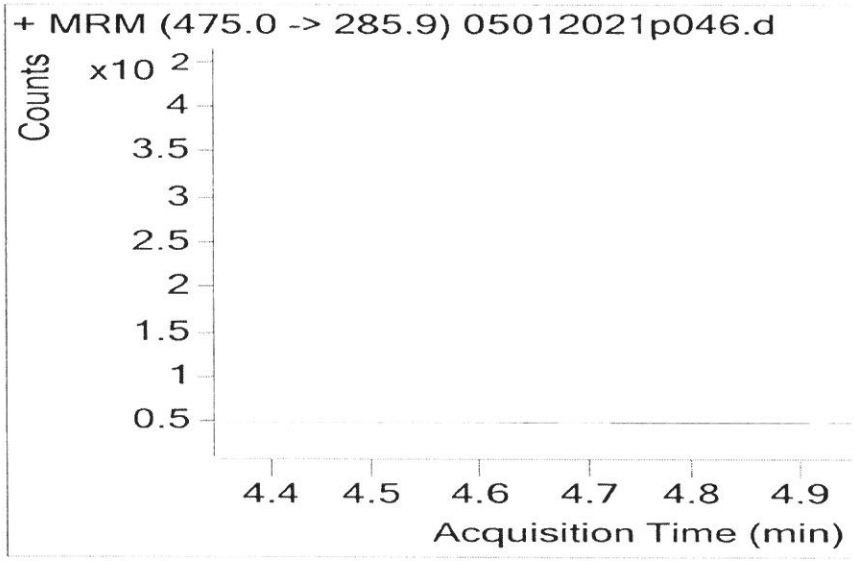
Cyantraniliprole



Acq Time	5/2/2021 2:32	**Data File**	05012021p046.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28444
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-B4		

Compound Graphics

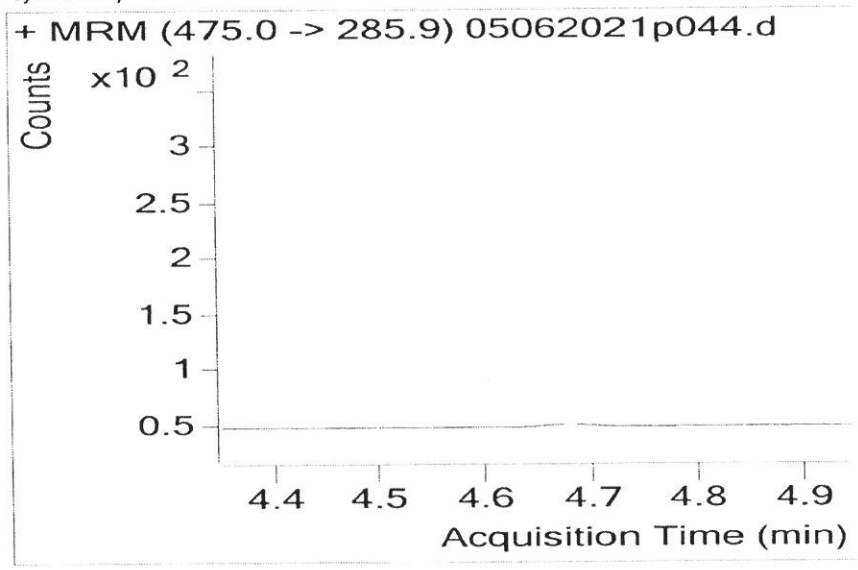
Cyantraniliprole



Acq Time	5/7/2021 6:34	**Data File**	05062021p044.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28474
Sample Info	DA-ID167	**Sample Type**	Sample
Position	P1-B3		

Compound Graphics

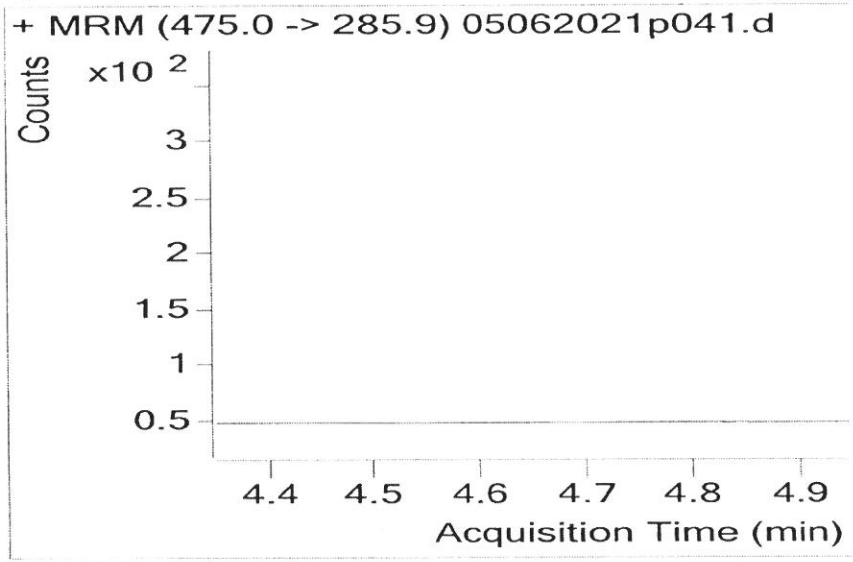
Cyantraniliprole



Acq Time	5/7/2021 5:32	**Data File**	05062021p041.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28400
Sample Info	DA-WA*370	**Sample Type**	Sample
Position	P1-B2		

Compound Graphics

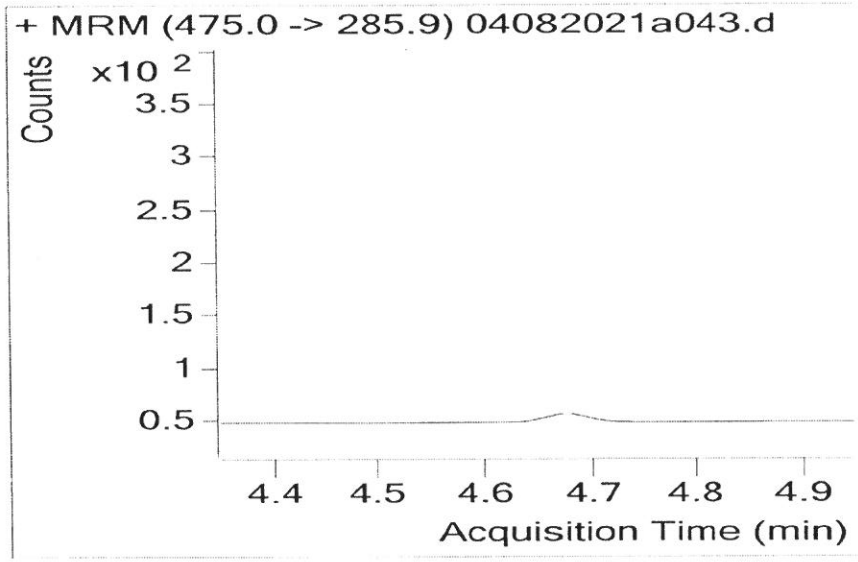
Cyantraniliprole



Acq Time	4/9/2021 2:32	**Data File**	04082021a043.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28404
Sample Info	SA-WA*370	**Sample Type**	Sample
Position	P1-B3		

Compound Graphics

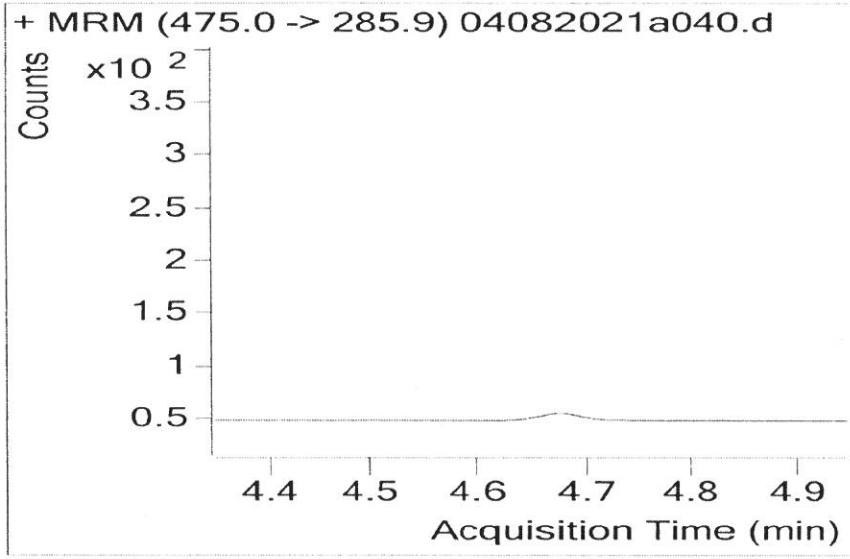
Cyantraniliprole



Acq Time	4/9/2021 1:30	**Data File**	04082021a040.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28478
Sample Info	SA-ID167	**Sample Type**	Sample
Position	P1-B2		

Compound Graphics

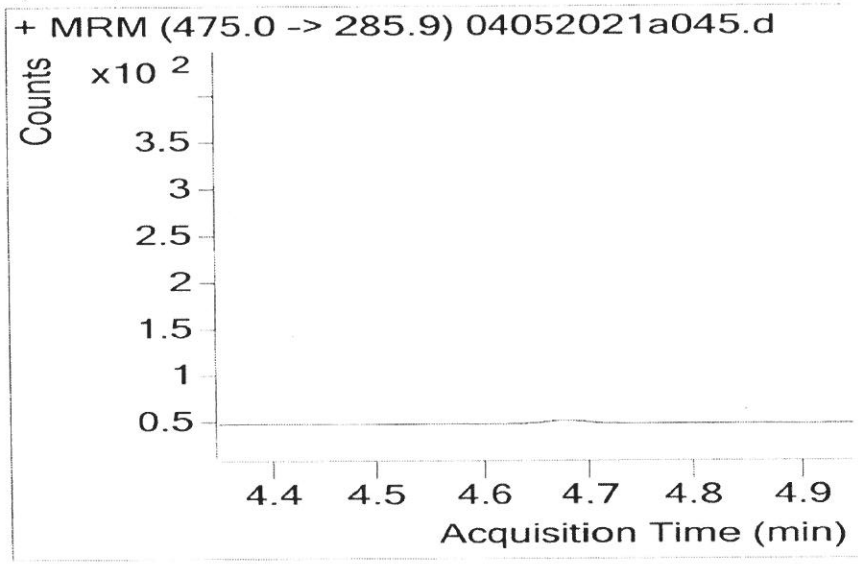
Cyantraniliprole



Acq Time	4/6/2021 4:48	**Data File**	04052021a045.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28460
Sample Info	SA-CA96	**Sample Type**	Sample
Position	P1-B4		

Compound Graphics

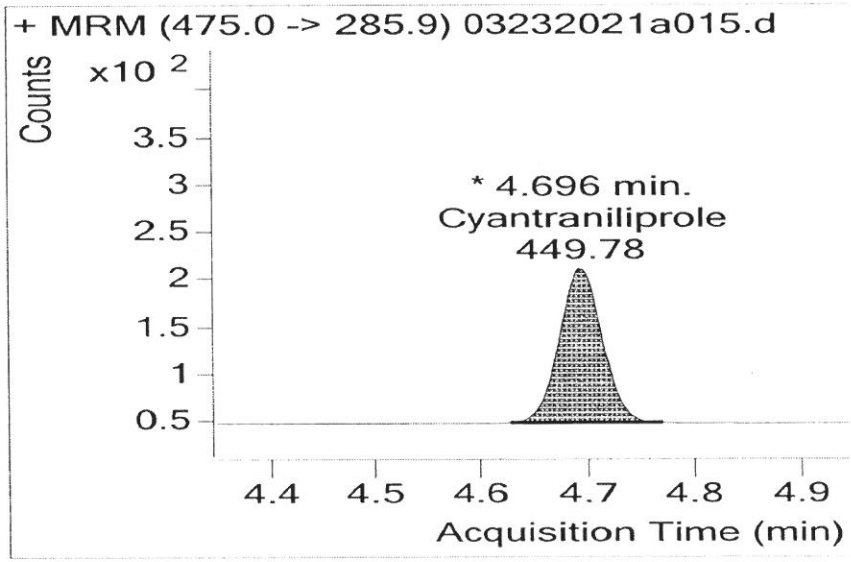
Cyantraniliprole



Acq Time	3/23/2021 16:15	**Data File**	03232021a015.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28452V5.0R1
Sample Info	FA-CA96	**Sample Type**	Sample
Position	P1-A1		

Compound Graphics

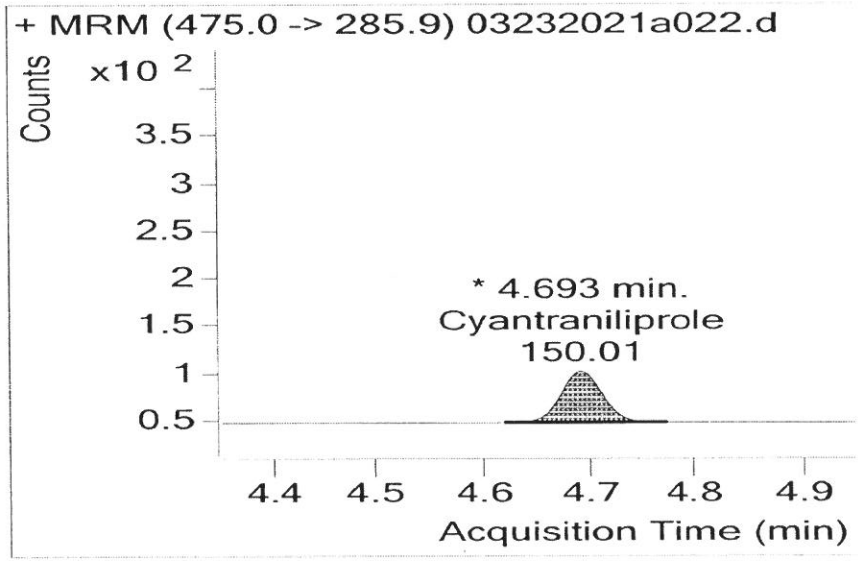
Cyantraniliprole



Acq Time	3/23/2021 18:39	**Data File**	03232021a022.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28452V0.1R1
Sample Info	FA-CA96	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

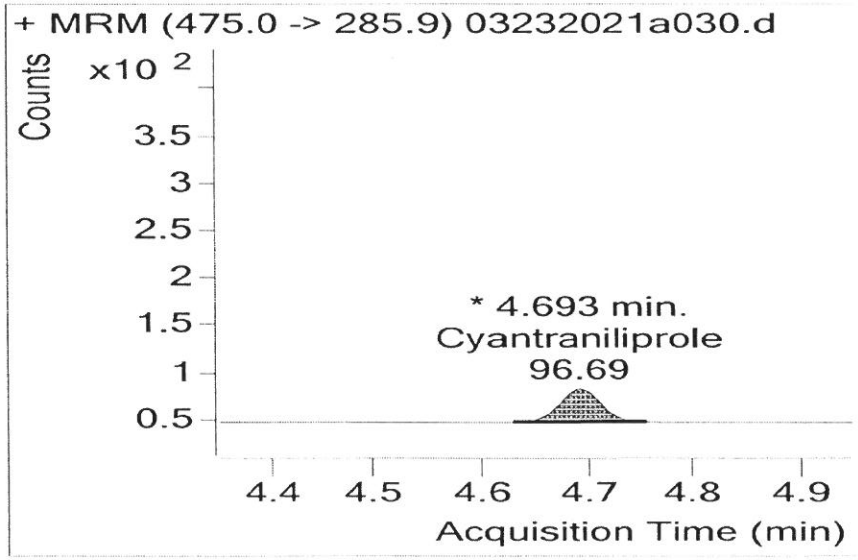
Cyantraniliprole



Acq Time	3/23/2021 21:23	**Data File**	03232021a030.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28452V0.01R1
Sample Info	FA-CA96	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

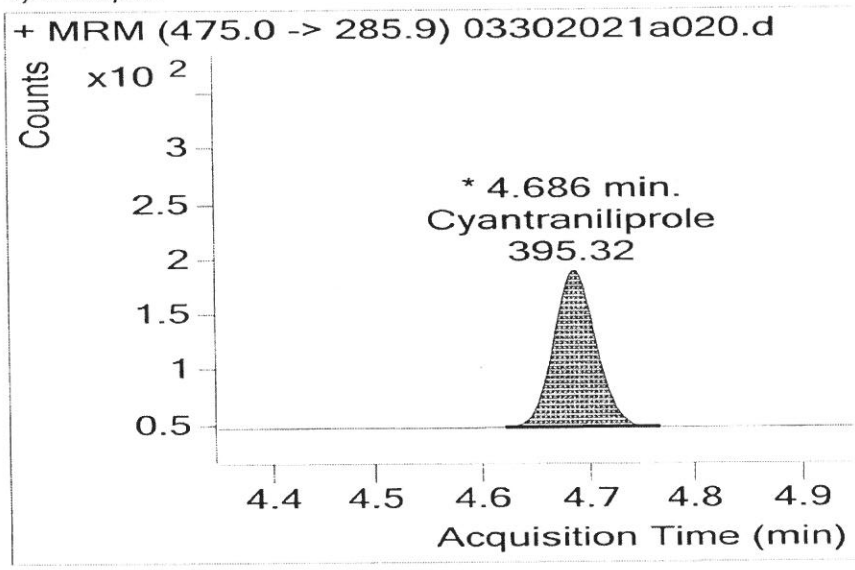
Cyantraniliprole



Acq Time	3/30/2021 20:51	**Data File**	03302021a020.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28440C25R3
Sample Info	FA-FL136	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

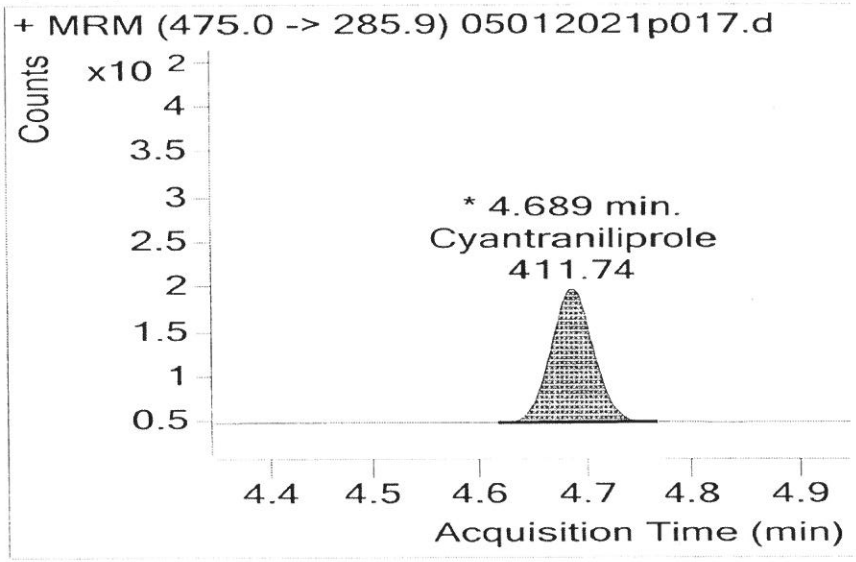
Cyantraniliprole



Acq Time	5/1/2021 16:36	**Data File**	05012021p017.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28444V5.0R1
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-A1		

Compound Graphics

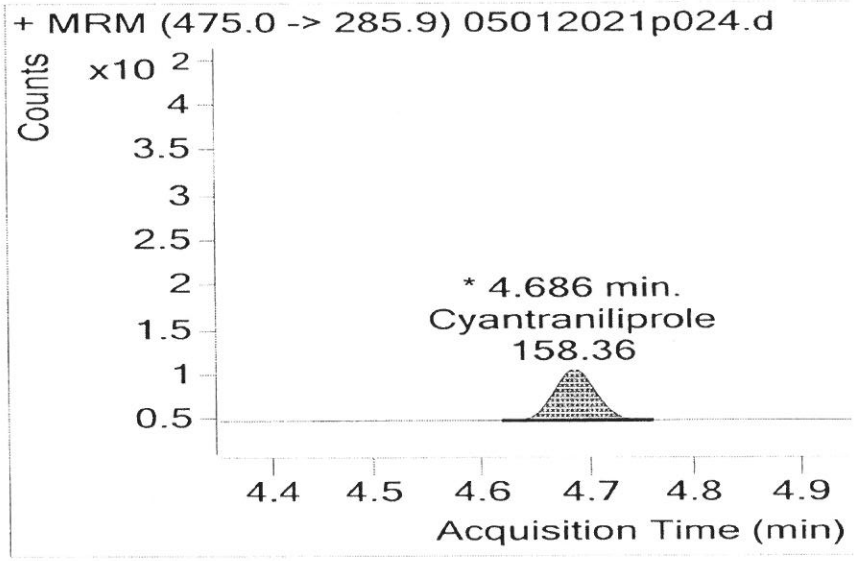
Cyantraniliprole



Acq Time	5/1/2021 19:00	**Data File**	05012021p024.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28444V0.1R1
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

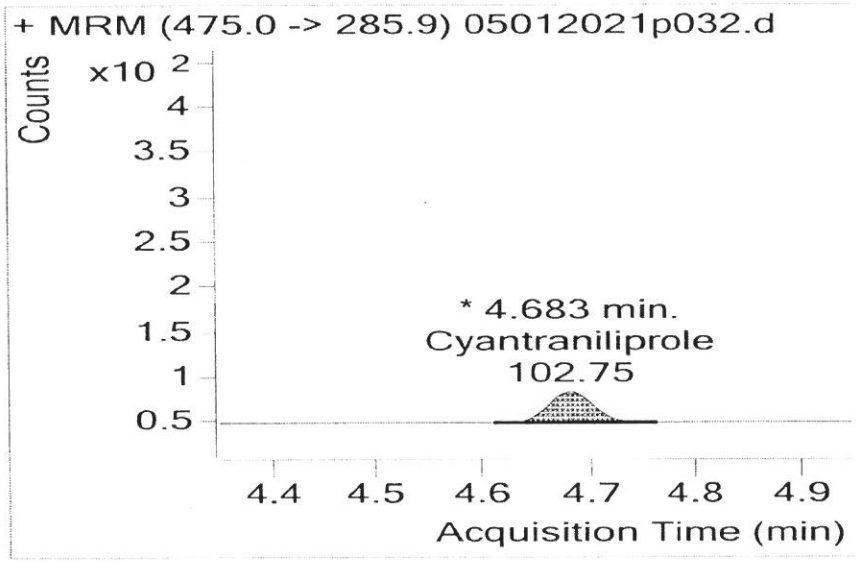
Cyantraniliprole



Acq Time	5/1/2021 21:45	**Data File**	05012021p032.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28444V0.01R1
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

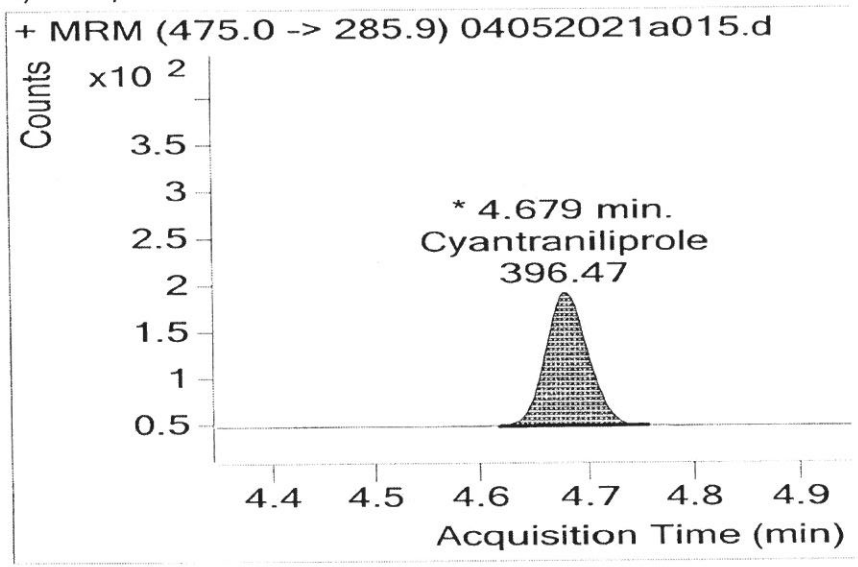
Cyantraniliprole



Acq Time	4/5/2021 18:31	**Data File**	04052021a015.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28460V5.0R1
Sample Info	SA-CA96	**Sample Type**	Sample
Position	P1-A1		

Compound Graphics

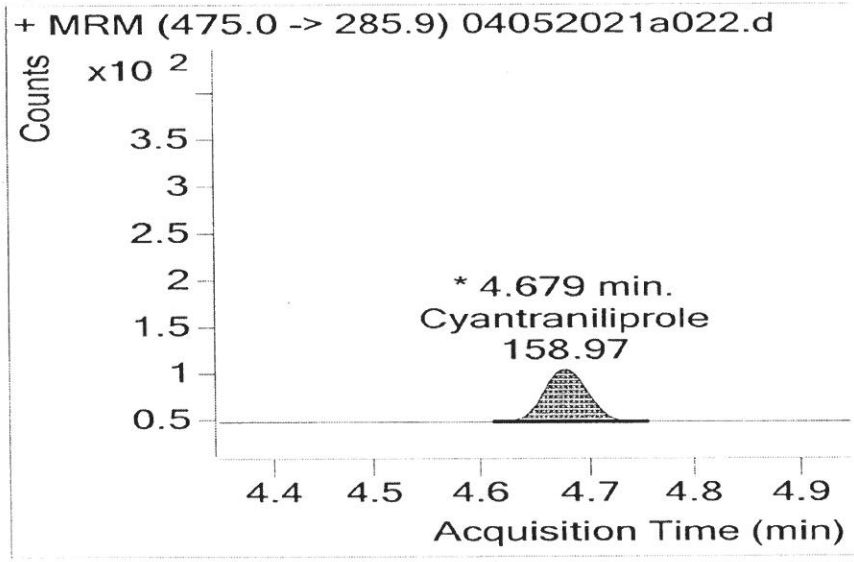
Cyantraniliprole



Acq Time	4/5/2021 20:55	**Data File**	04052021a022.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28460V0.1R1
Sample Info	SA-CA96	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

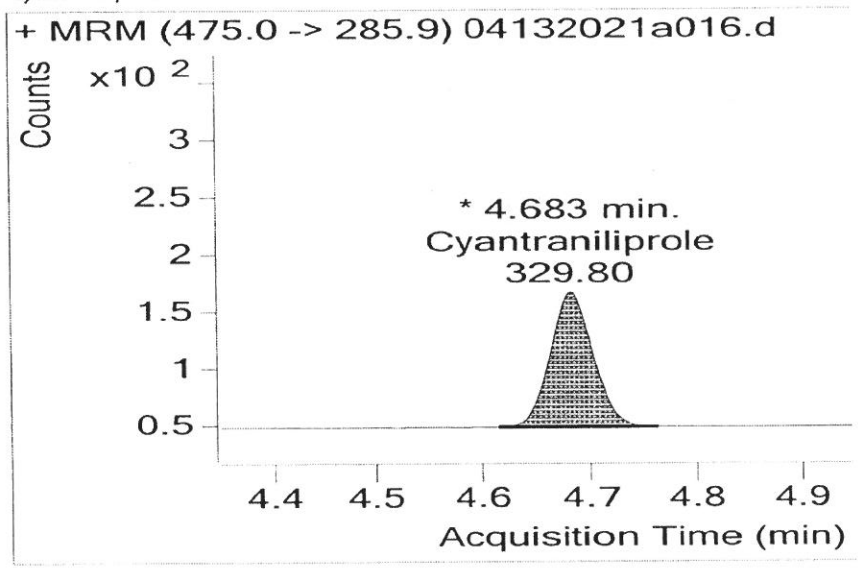
Cyantraniliprole



Acq Time	4/13/2021 13:59	**Data File**	04132021a016.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28420C50R1
Sample Info	SA-NJ249	**Sample Type**	Sample
Position	P1-A1		

Compound Graphics

Cyantraniliprole

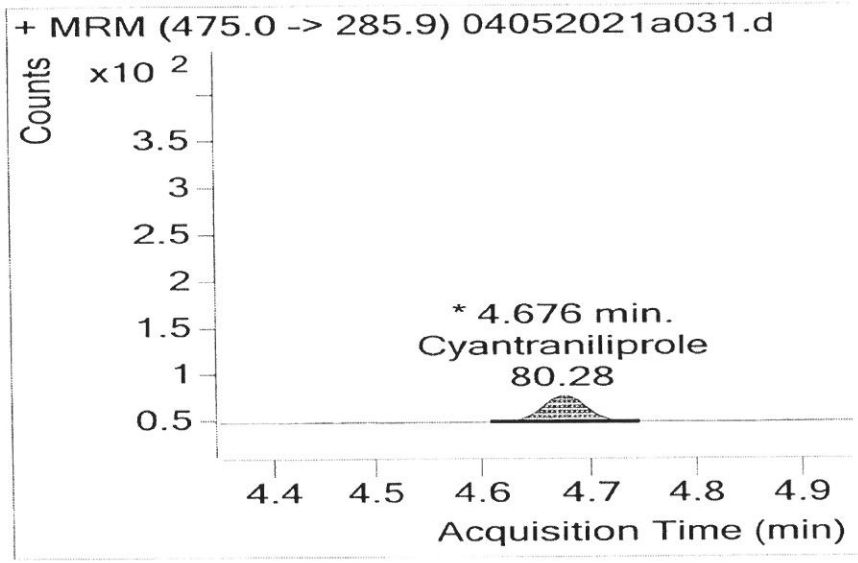


50

Acq Time	4/6/2021 0:00	**Data File**	04052021a031.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28460V0.01R1
Sample Info	SA-CA96	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

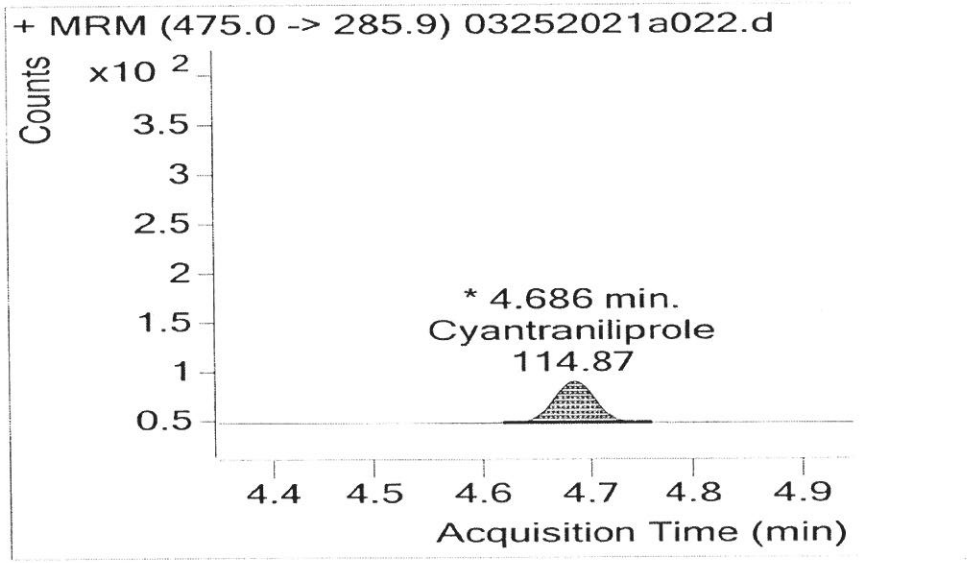
Cyantraniliprole



Acq Time	3/25/2021 18:25	**Data File**	03252021a022.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28466
Sample Info	FE-ID167	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

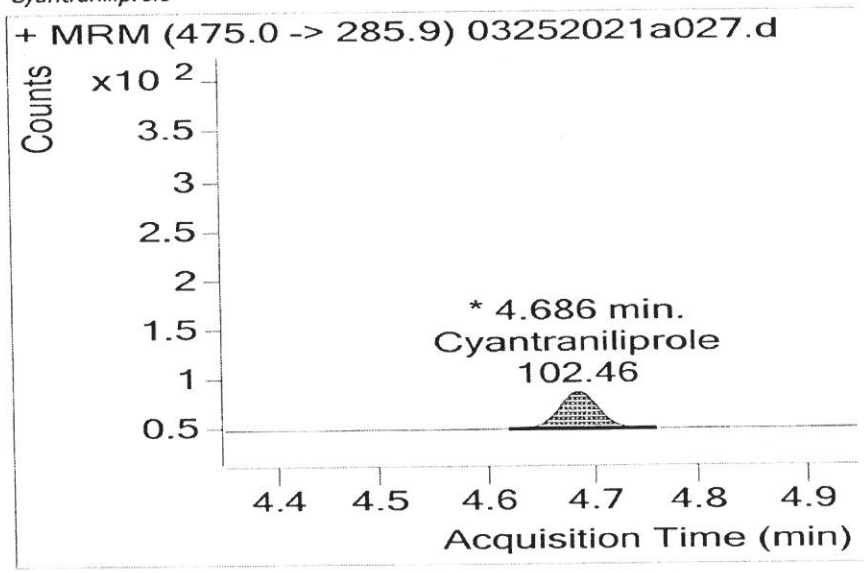
Cyantraniliprole



Acq Time	3/25/2021 20:08	**Data File**	03252021a027.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28468
Sample Info	FC-ID167	**Sample Type**	Sample
Position	P1-A6		

Compound Graphics

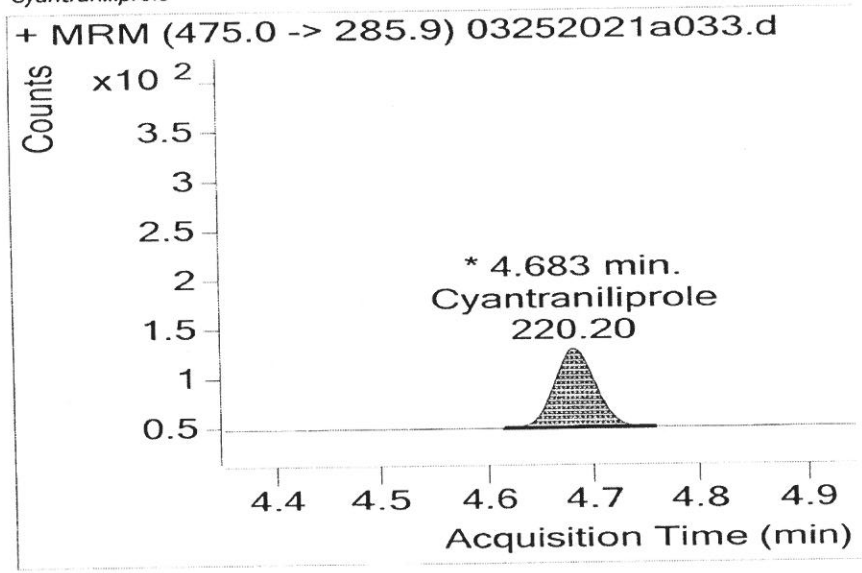
Cyantraniliprole



Acq Time	3/25/2021 22:12	**Data File**	03252021a033.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28470
Sample Info	FG-ID167	**Sample Type**	Sample
Position	P1-A8		

Compound Graphics

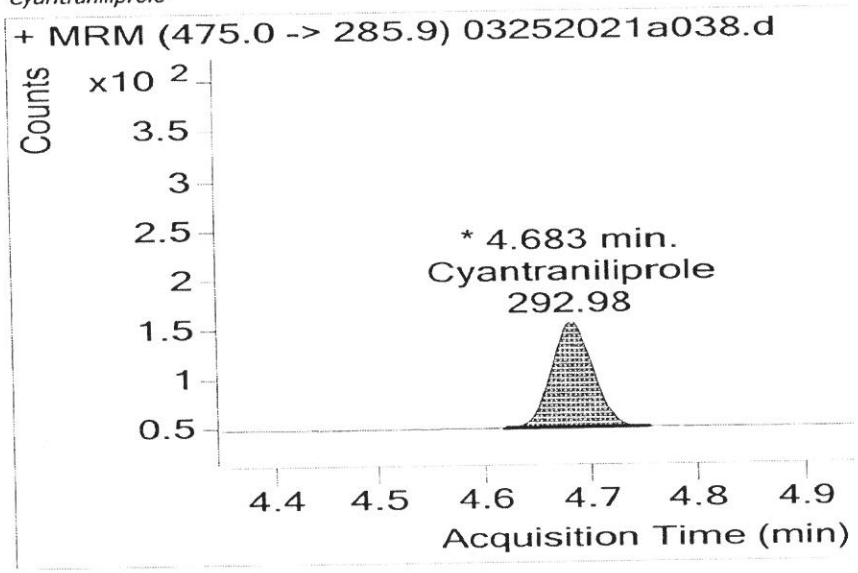
Cyantraniliprole



Acq Time	3/25/2021 23:55	**Data File**	03252021a038.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28472
Sample Info	FI-ID167	**Sample Type**	Sample
Position	P1-B1		

Compound Graphics

Cyantraniliprole

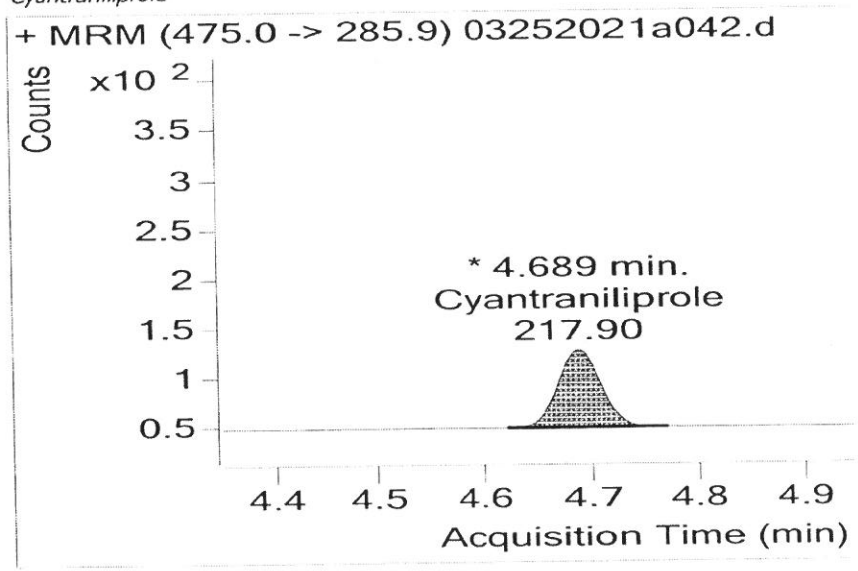


Reprinted
with corrections
Initials NMJ
Date 3/26/2021

Acq Time	3/26/2021 1:17	**Data File**	03252021a042.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28454
Sample Info	FC-CA96	**Sample Type**	Sample
Position	P1-B3		

Compound Graphics

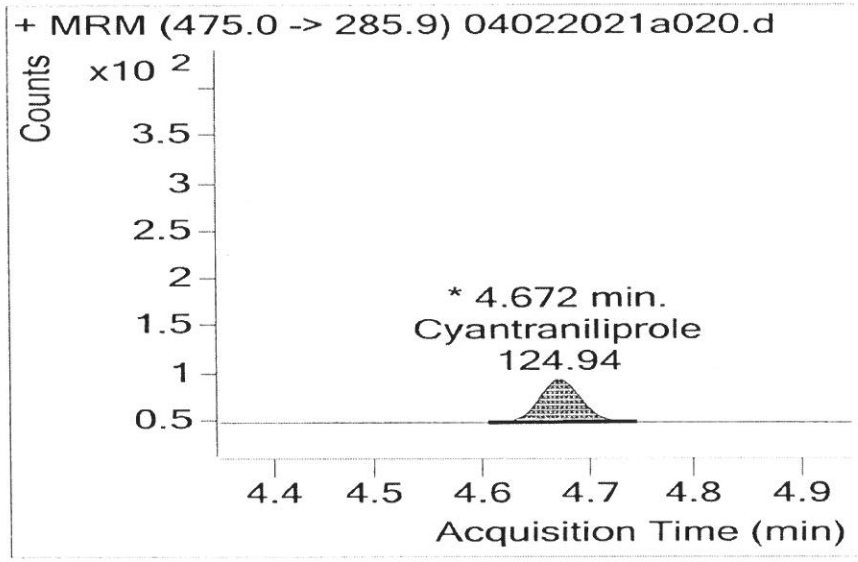
Cyantraniliprole



Acq Time	4/2/2021 17:55	**Data File**	04022021a020.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28414
Sample Info	FC-NJ249	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

Cyantraniliprole

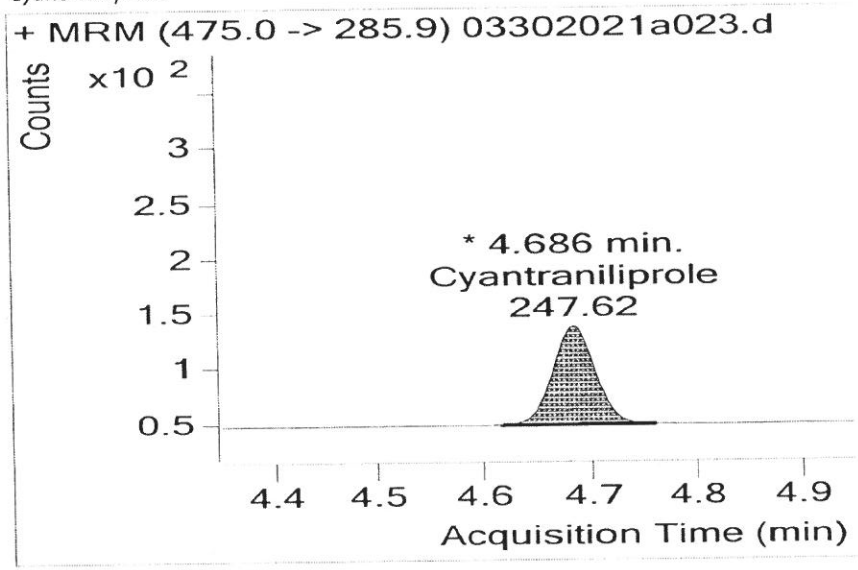


57

Acq Time	3/30/2021 21:53	**Data File**	03302021a023.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28442
Sample Info	FC-FL136	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

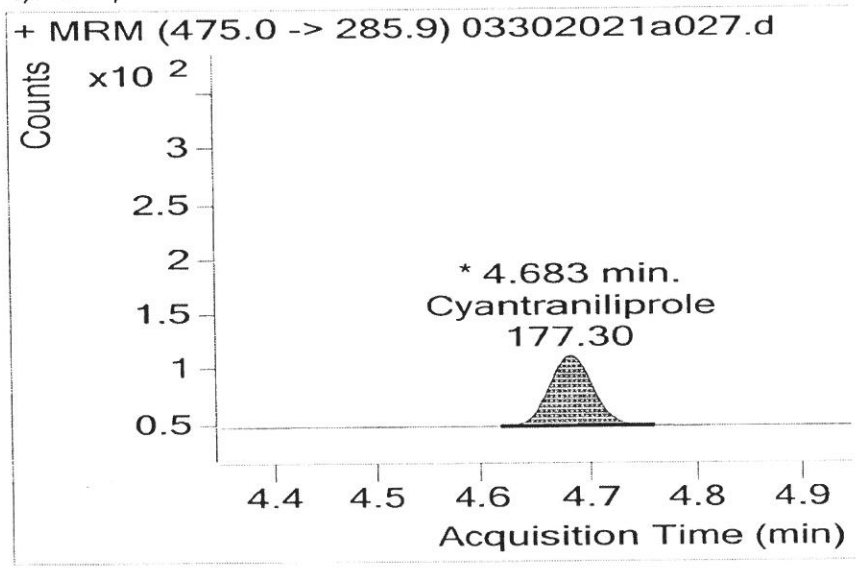
Cyantraniliprole



Acq Time	3/30/2021 23:15	**Data File**	03302021a027.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28398
Sample Info	FC-WA*370	**Sample Type**	Sample
Position	P1-A6		

Compound Graphics

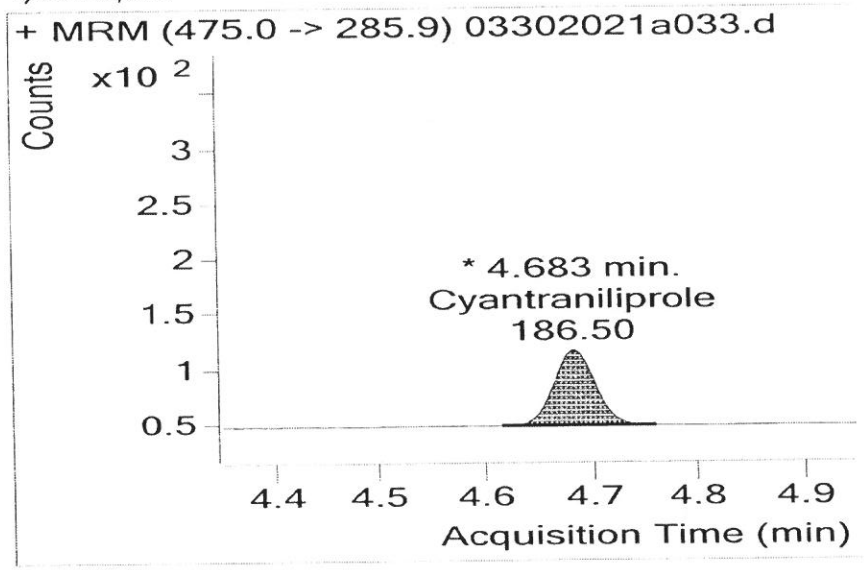
Cyantraniliprole



Acq Time	3/31/2021 1:18	**Data File**	03302021a033.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28426
Sample Info	FC-WI388	**Sample Type**	Sample
Position	P1-A8		

Compound Graphics

Cyantraniliprole

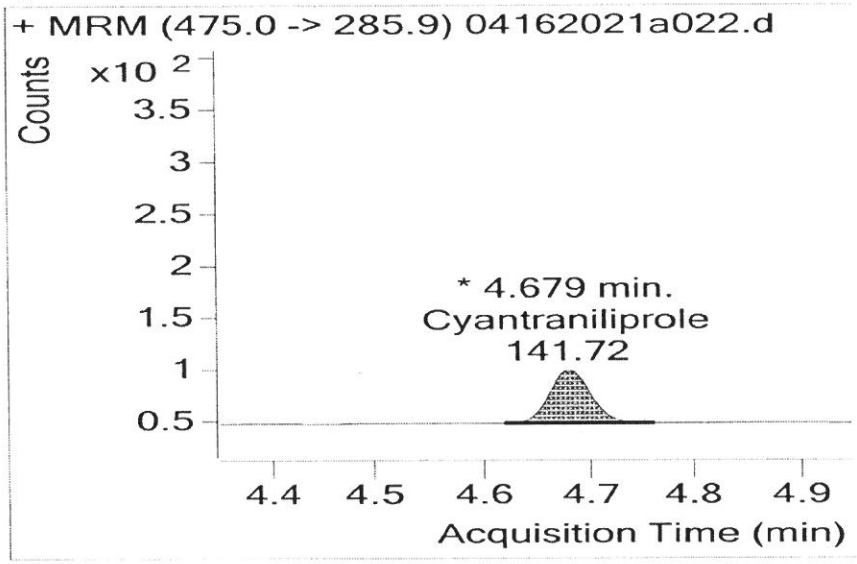


60

Acq Time	4/16/2021 17:51	**Data File**	04162021a022.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28437
Sample Info	GT-WI388	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

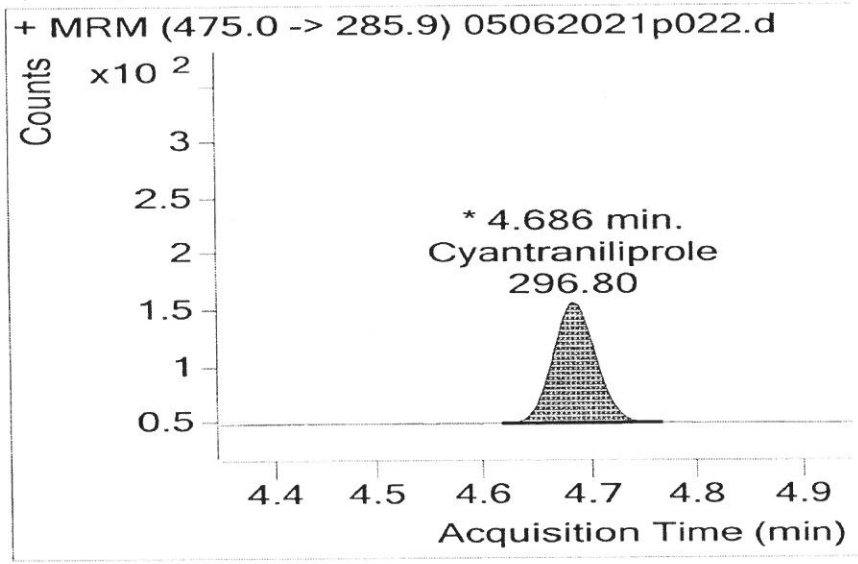
Cyantraniliprole



Acq Time	5/6/2021 23:01	**Data File**	05062021p022.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28402
Sample Info	DC-WA*370	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

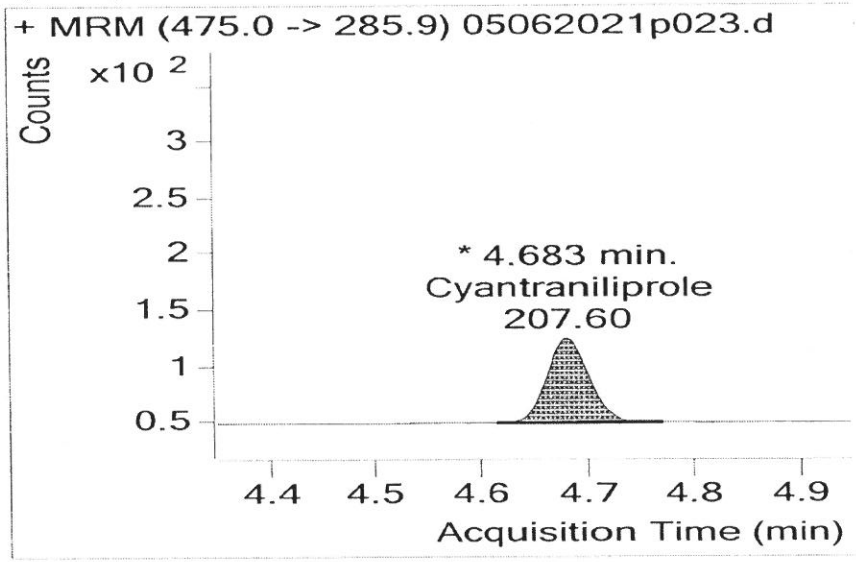
Cyantraniliprole



Acq Time	5/6/2021 23:22	**Data File**	05062021p023.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28403
Sample Info	DD-WA*370	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

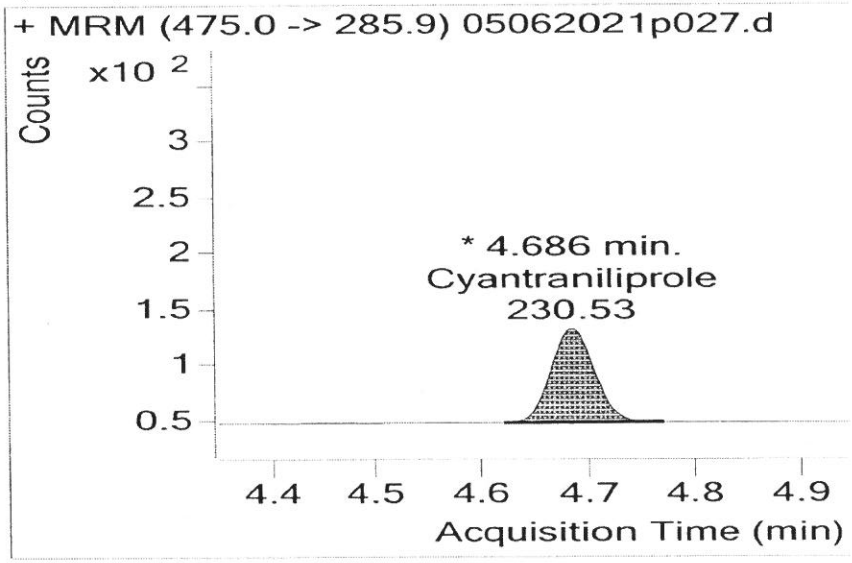
Cyantraniliprole



Acq Time	5/7/2021 0:44	**Data File**	05062021p027.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28476
Sample Info	DC-ID167	**Sample Type**	Sample
Position	P1-A5		

Compound Graphics

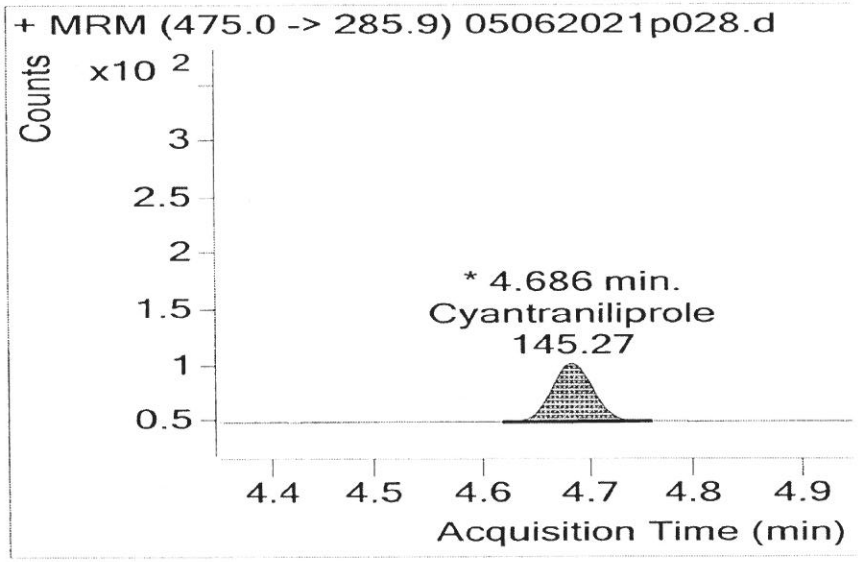
Cyantraniliprole



Acq Time	5/7/2021 1:04	**Data File**	05062021p028.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28477
Sample Info	DD-ID167	**Sample Type**	Sample
Position	P1-A6		

Compound Graphics

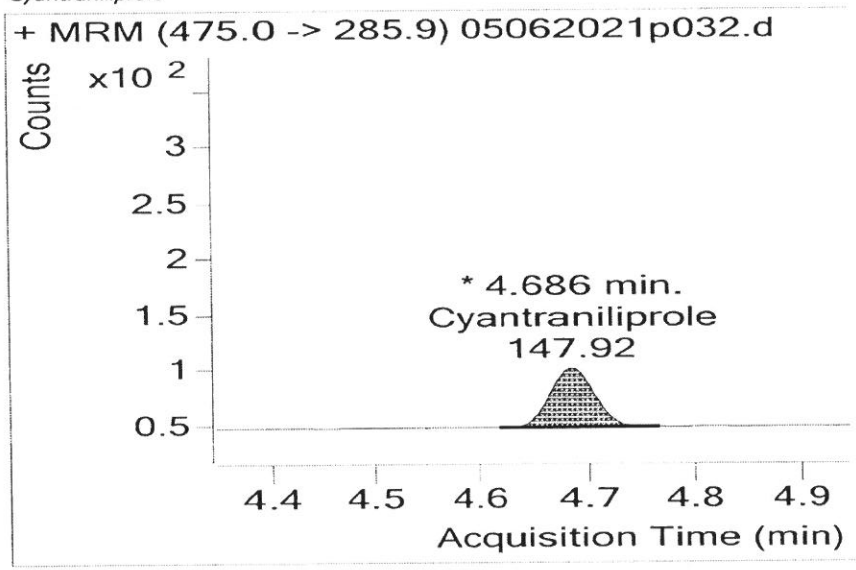
Cyantraniliprole



Acq Time	5/7/2021 2:27	**Data File**	05062021p032.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28446
Sample Info	DC-FL136	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

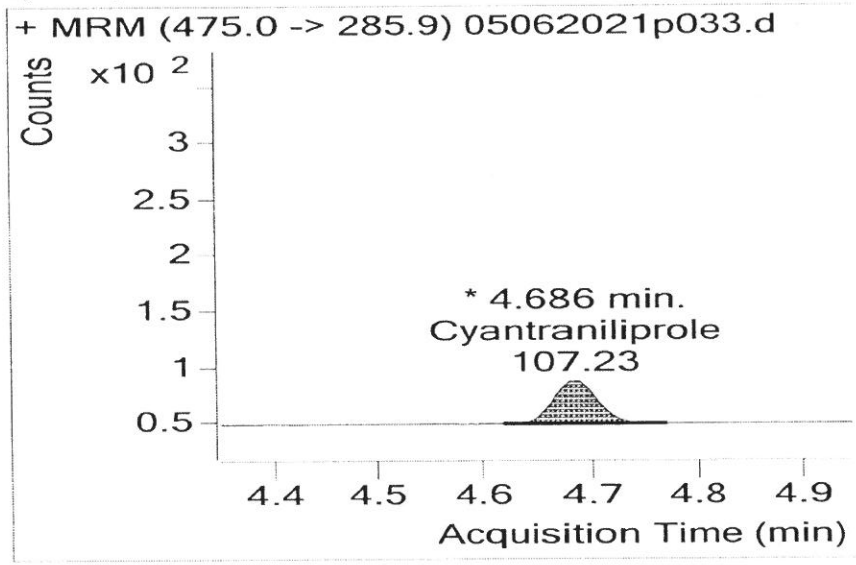
Cyantraniliprole



Acq Time	5/7/2021 2:47	**Data File**	05062021p033.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28447
Sample Info	DD-FL136	**Sample Type**	Sample
Position	P1-A8		

Compound Graphics

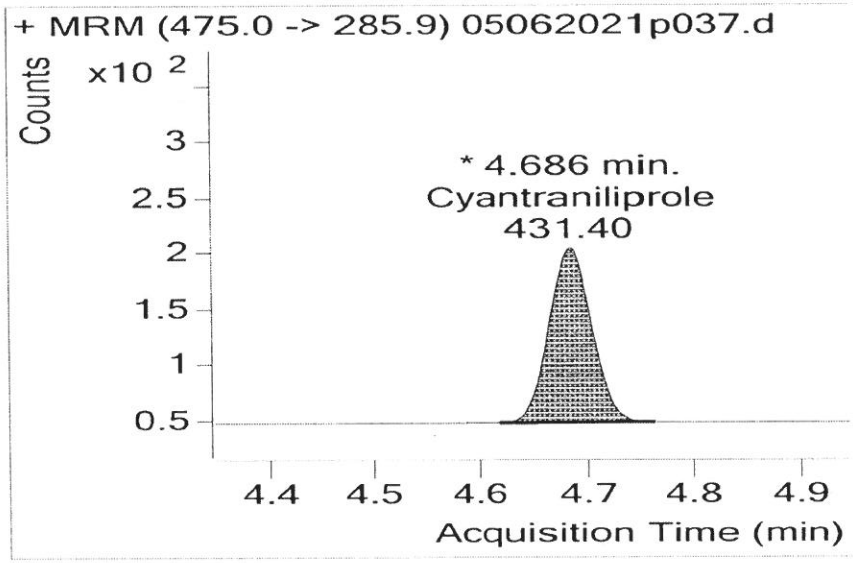
Cyantraniliprole



Acq Time	5/7/2021 4:10	**Data File**	05062021p037.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28458
Sample Info	DC-CA96	**Sample Type**	Sample
Position	P1-A9		

Compound Graphics

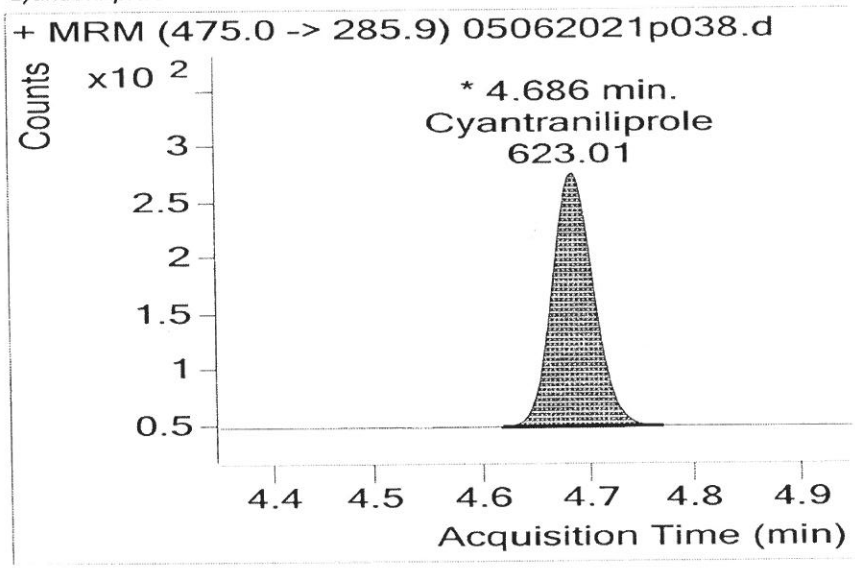
Cyantraniliprole



Acq Time	5/7/2021 4:30	**Data File**	05062021p038.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28459
Sample Info	DD-CA96	**Sample Type**	Sample
Position	P1-B1		

Compound Graphics

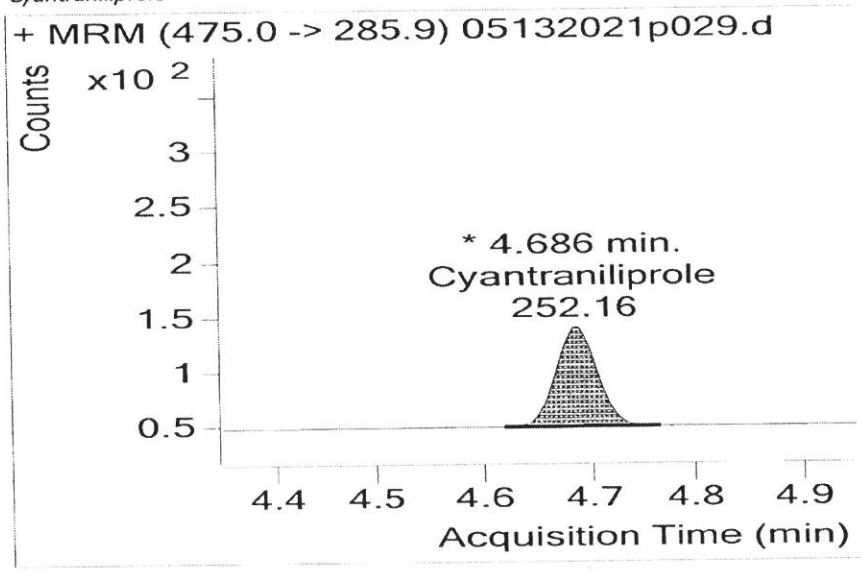
Cyantraniliprole



Acq Time	5/14/2021 3:09	**Data File**	05132021p029.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28418
Sample Info	DC-NJ249	**Sample Type**	Sample
Position	P1-A6		

Compound Graphics

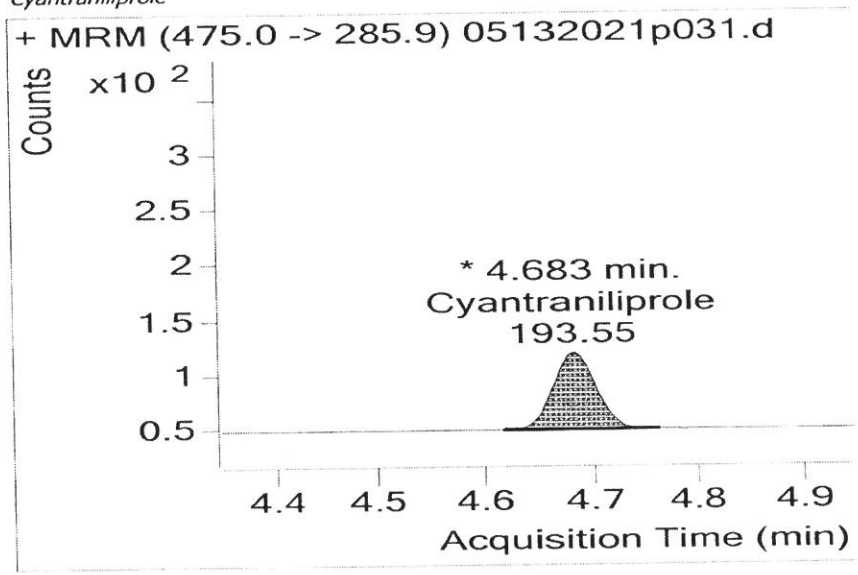
Cyantraniliprole



Acq Time	5/14/2021 3:50	**Data File**	05132021p031.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28419
Sample Info	DD-NJ249	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

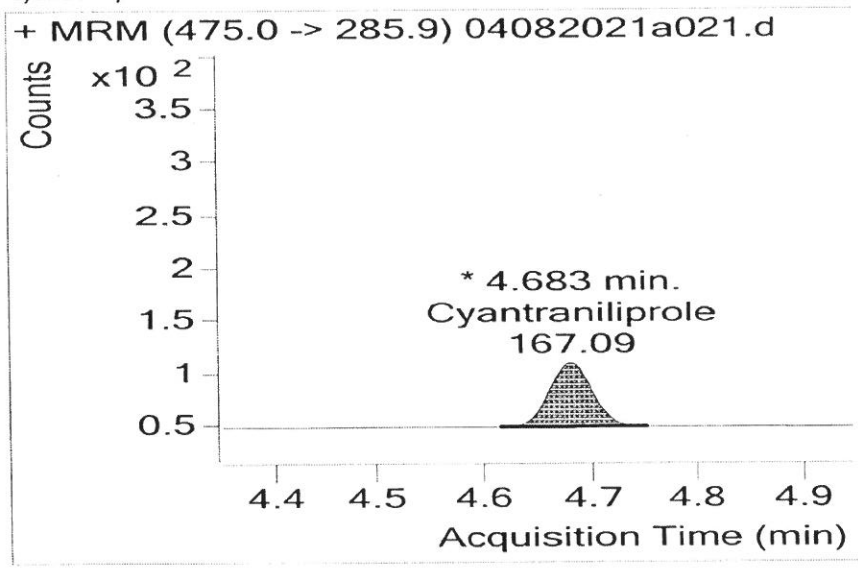
Cyantraniliprole



Acq Time	4/8/2021 18:59	**Data File**	04082021a021.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28480
Sample Info	SC-ID167	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

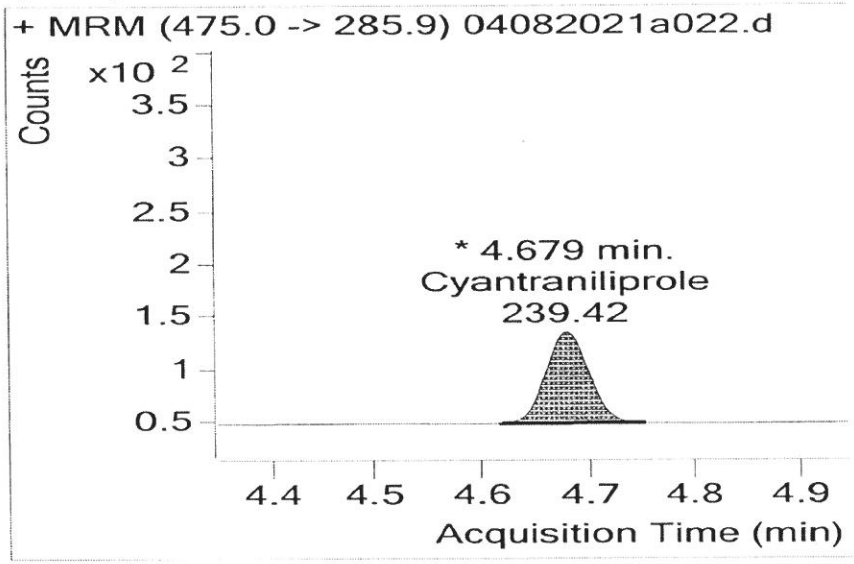
Cyantraniliprole



Acq Time	4/8/2021 19:20	**Data File**	04082021a022.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28481
Sample Info	SD-ID167	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

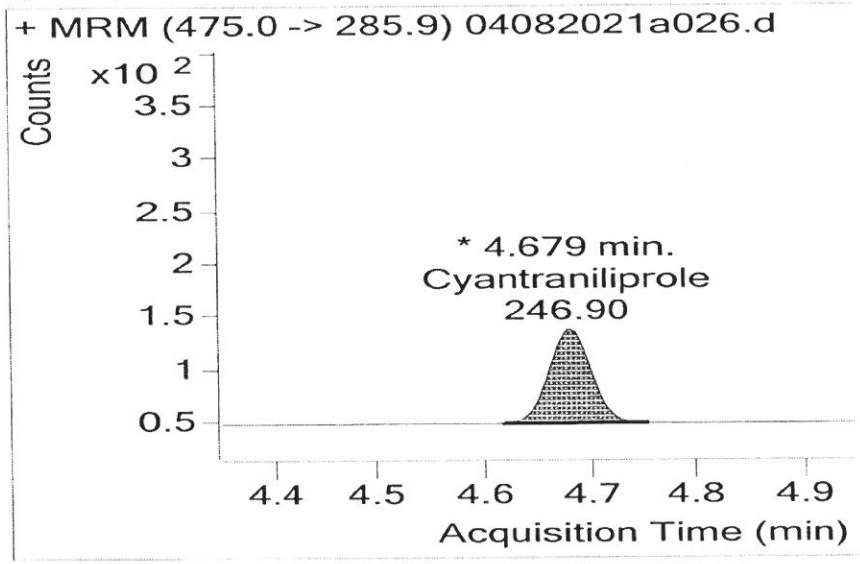
Cyantraniliprole



Acq Time	4/8/2021 20:42	**Data File**	04082021a026.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28406
Sample Info	SC-WA*370	**Sample Type**	Sample
Position	P1-A5		

Compound Graphics

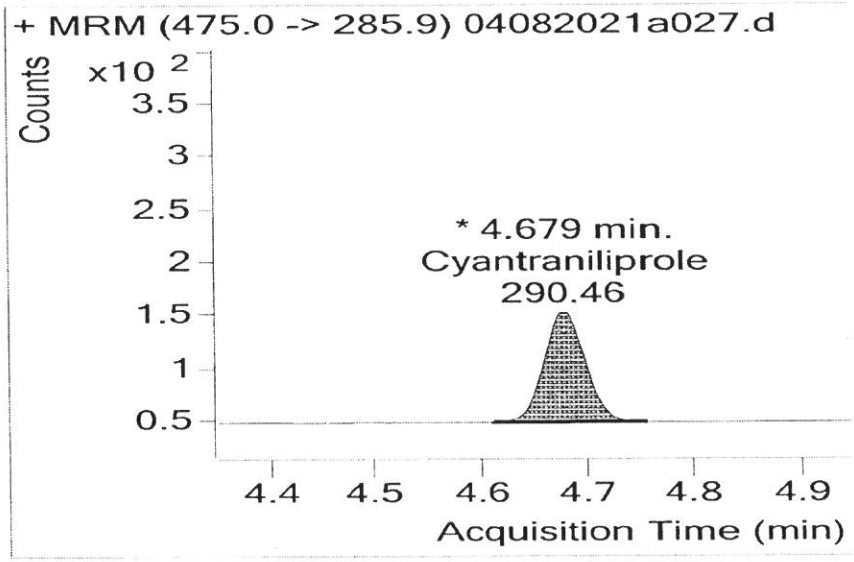
Cyantraniliprole



Acq Time	4/8/2021 21:02	**Data File**	04082021a027.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28407
Sample Info	SD-WA*370	**Sample Type**	Sample
Position	P1-A6		

Compound Graphics

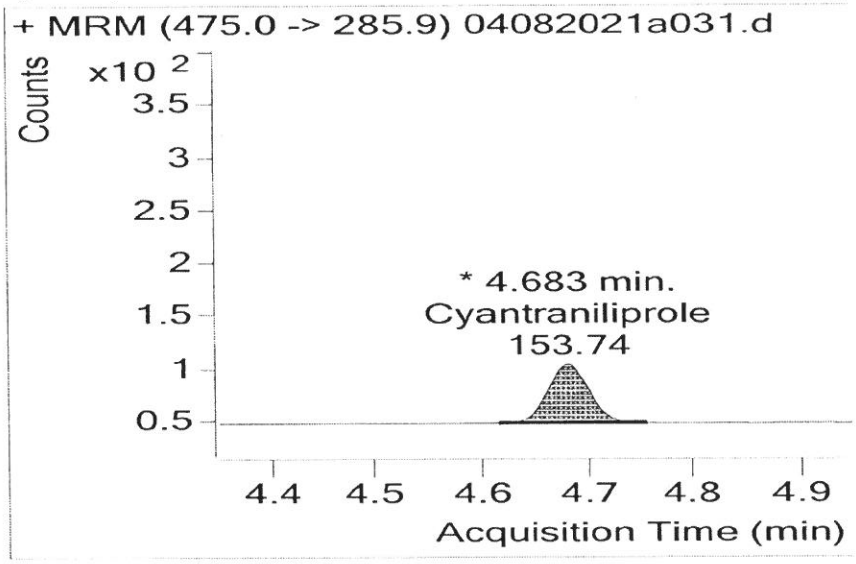
Cyantraniliprole



Acq Time	4/8/2021 22:25	**Data File**	04082021a031.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28450
Sample Info	SC-FL136	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

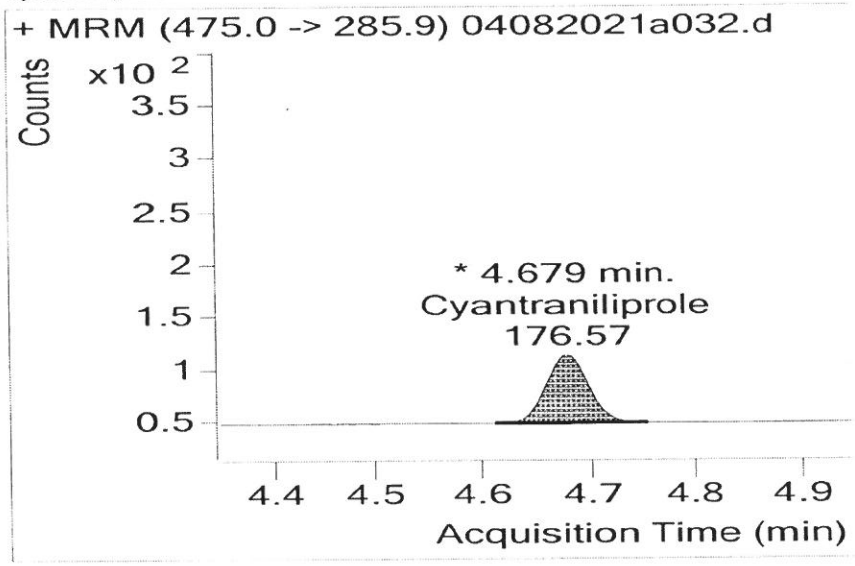
Cyantraniliprole



Acq Time	4/8/2021 22:45	**Data File**	04082021a032.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28451
Sample Info	SD-FL136	**Sample Type**	Sample
Position	P1-A8		

Compound Graphics

Cyantraniliprole

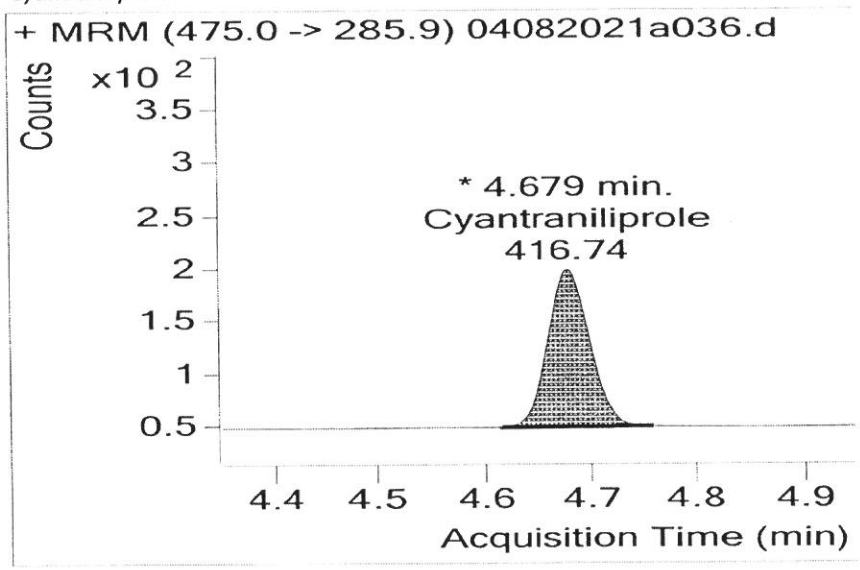


77

Acq Time	4/9/2021 0:08	**Data File**	04082021a036.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28462
Sample Info	SC-CA96	**Sample Type**	Sample
Position	P1-A9		

Compound Graphics

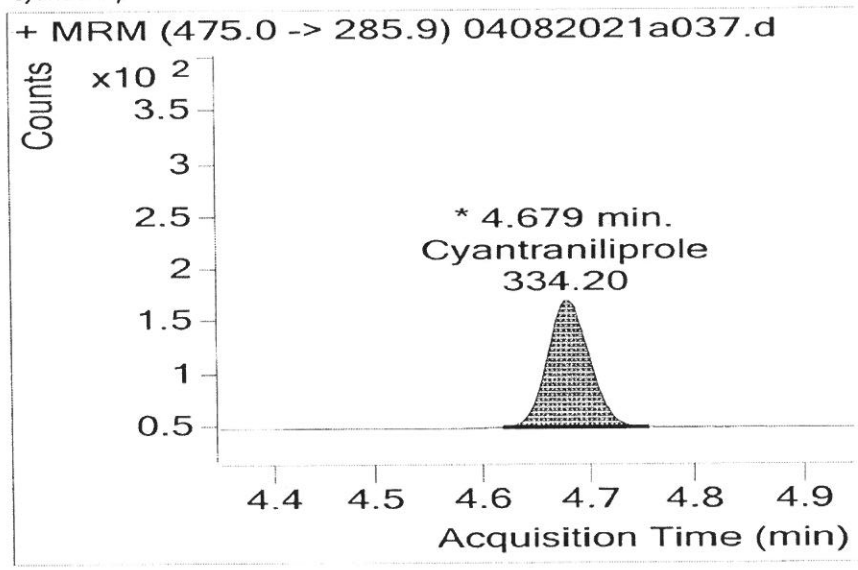
Cyantraniliprole



Acq Time	4/9/2021 0:28	**Data File**	04082021a037.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28463
Sample Info	SD-CA96	**Sample Type**	Sample
Position	P1-B1		

Compound Graphics

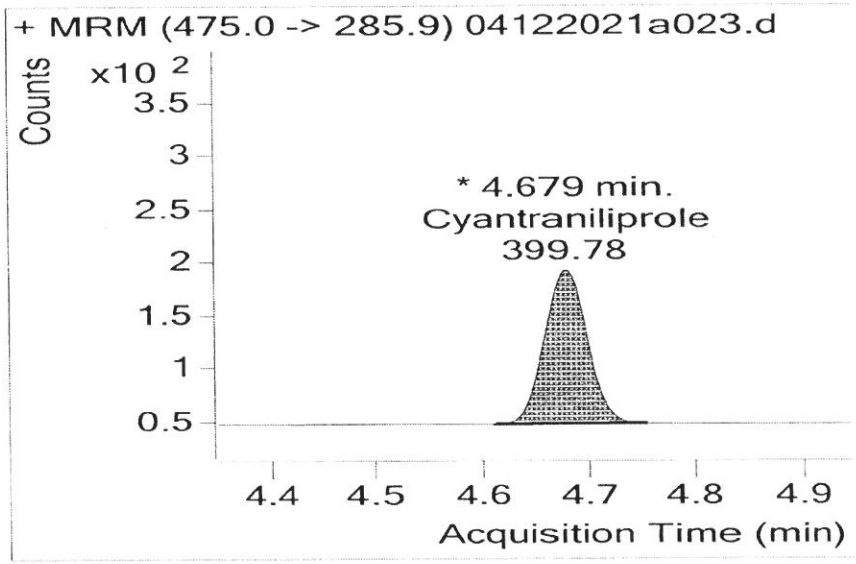
Cyantraniliprole



Acq Time	4/12/2021 19:08	**Data File**	04122021a023.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28422
Sample Info	SC-NJ249	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

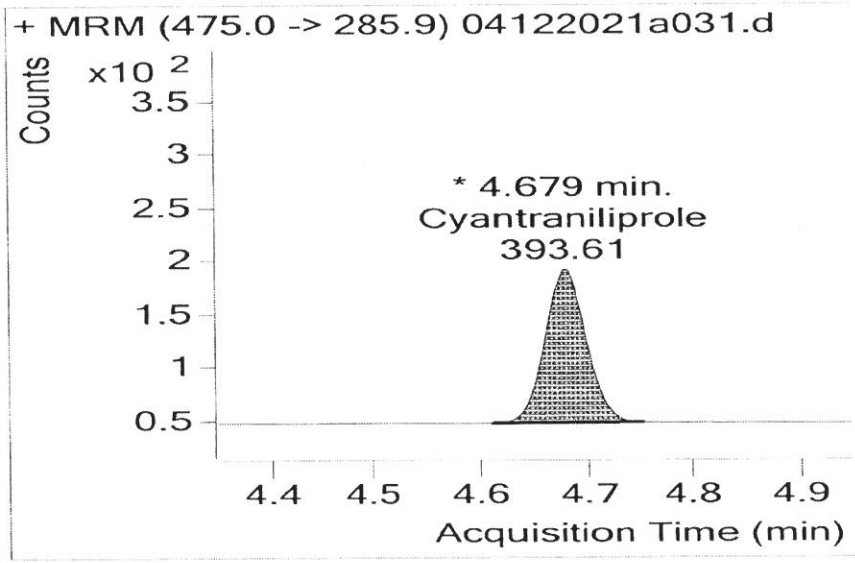
Cyantraniliprole



Acq Time	4/12/2021 21:52	**Data File**	04122021a031.d
Acq Method File	Cyantraniliprole_ESI.m	**Sample Name**	28435
Sample Info	SD-WI388	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

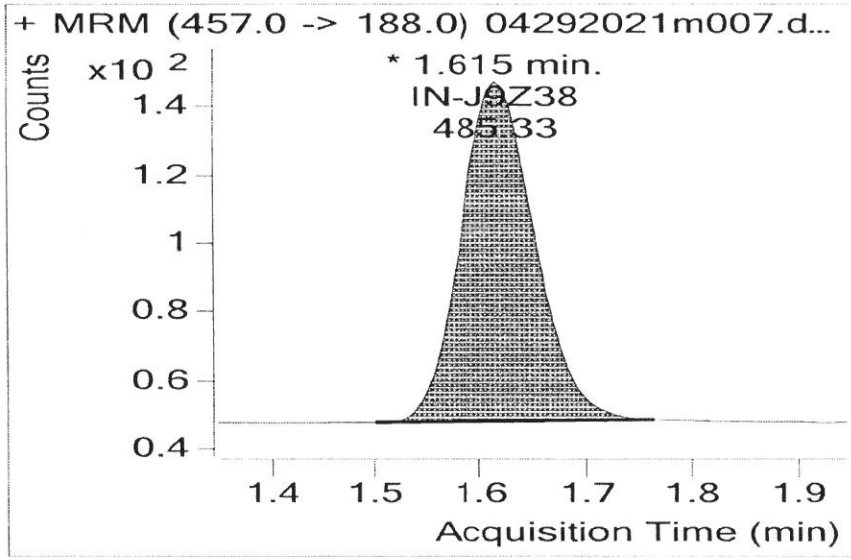
Cyantraniliprole



Acq Time	4/29/2021 11:56	**Data File**	04292021m007.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	718-2M54 0.50 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 1		

Compound Graphics

IN-J9Z38

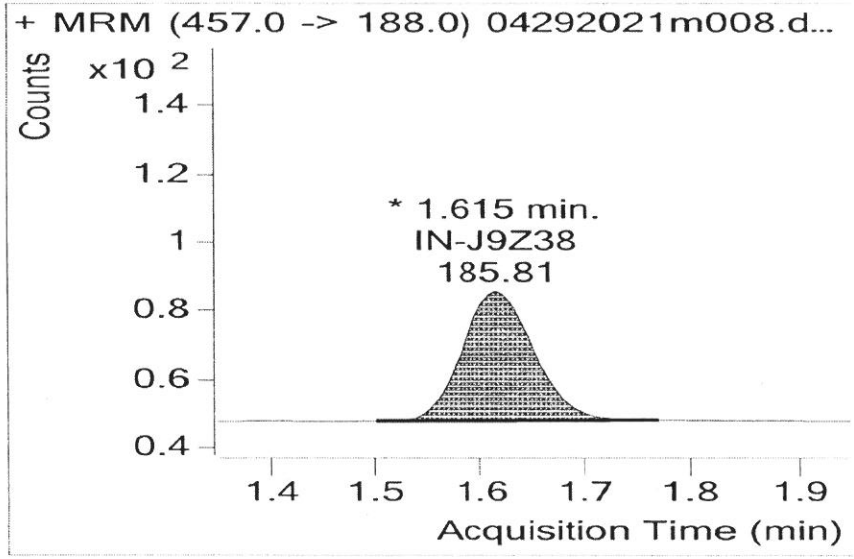


82

Acq Time	4/29/2021 11:59	**Data File**	04292021m008.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	718-2M55 0.20 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 2		

Compound Graphics

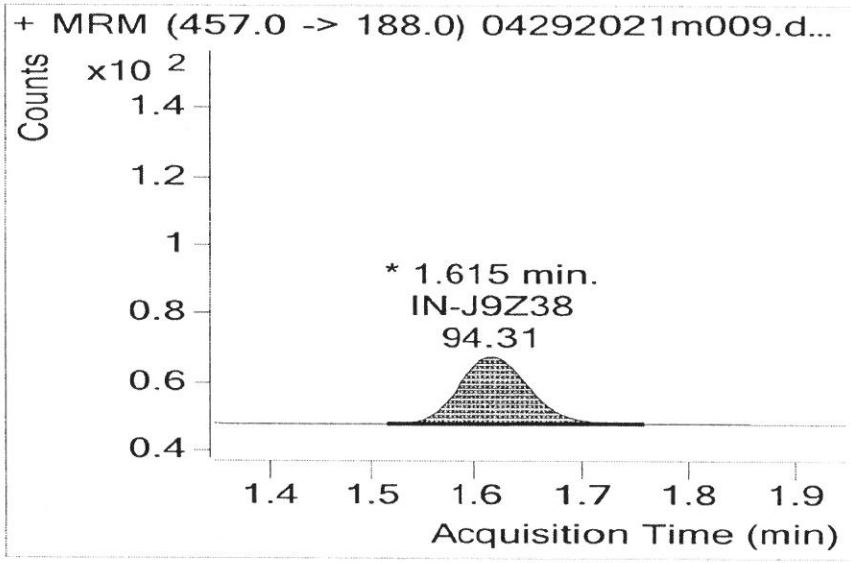
IN-J9Z38



Acq Time	4/29/2021 12:03	**Data File**	04292021m009.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	718-2M56 0.10 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 3		

Compound Graphics

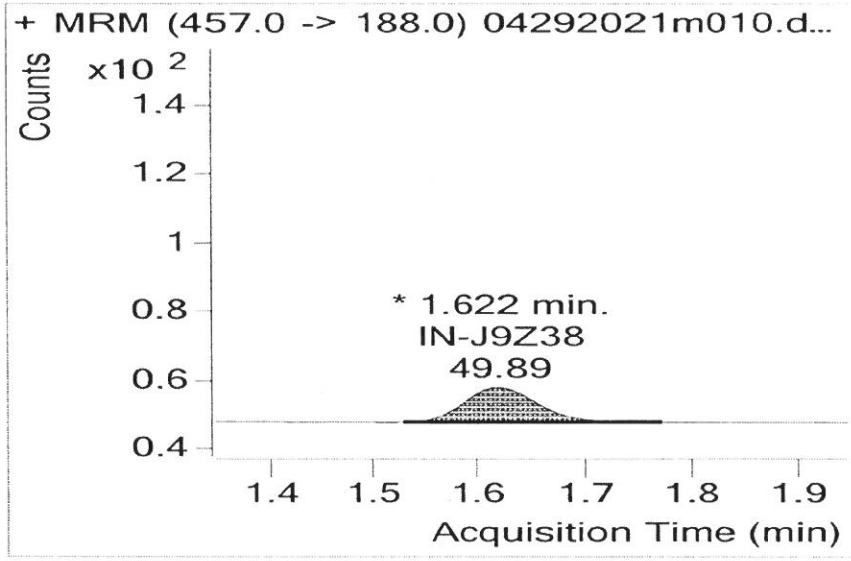
IN-J9Z38



Acq Time	4/29/2021 12:06	**Data File**	04292021m010.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	718-2M57 0.050 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 4		

Compound Graphics

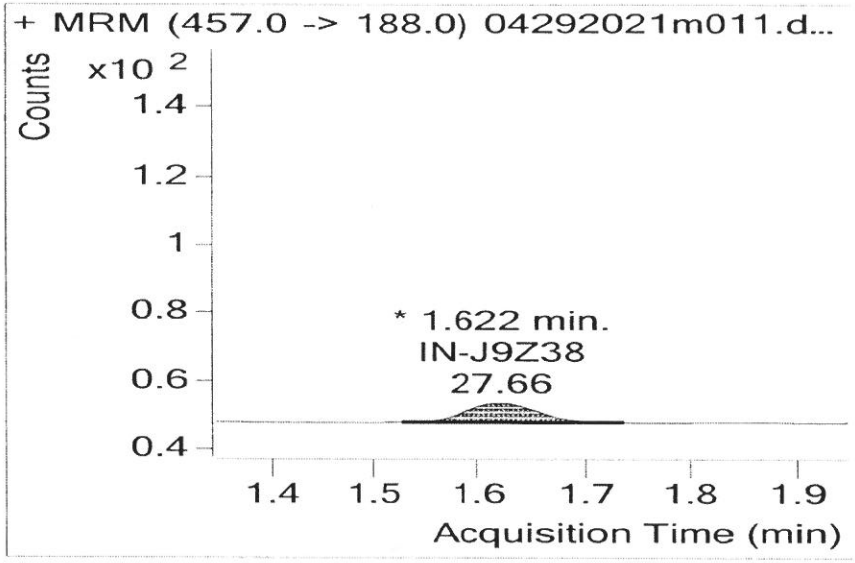
IN-J9Z38



Acq Time	4/29/2021 12:10	**Data File**	04292021m011.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	718-2M58 0.0250 pg/µL
Sample Info		**Sample Type**	Calibration
Position	Vial 5		

Compound Graphics

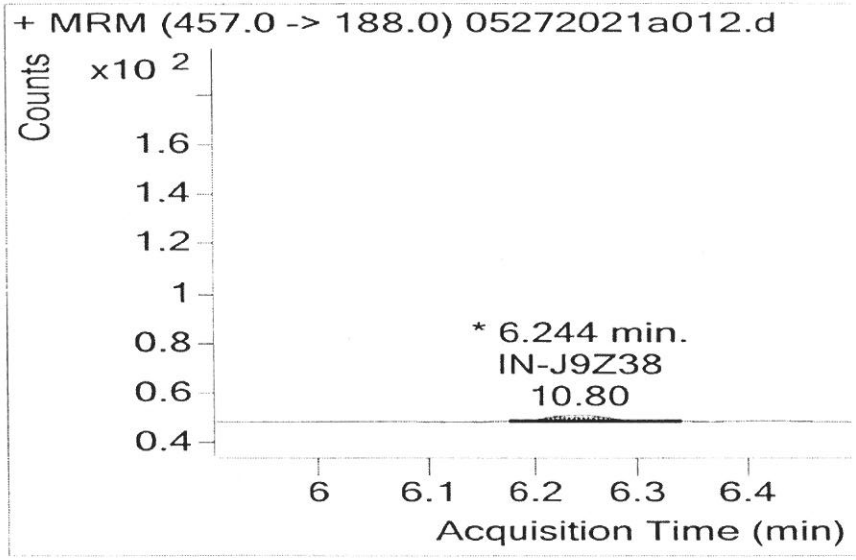
IN-J9Z38



Acq Time	5/27/2021 12:31	**Data File**	05272021a012.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	718-2M79 0.010 pg/µL
Sample Info		**Sample Type**	Calibration
Position	P1-C1		

Compound Graphics

IN-J9Z38

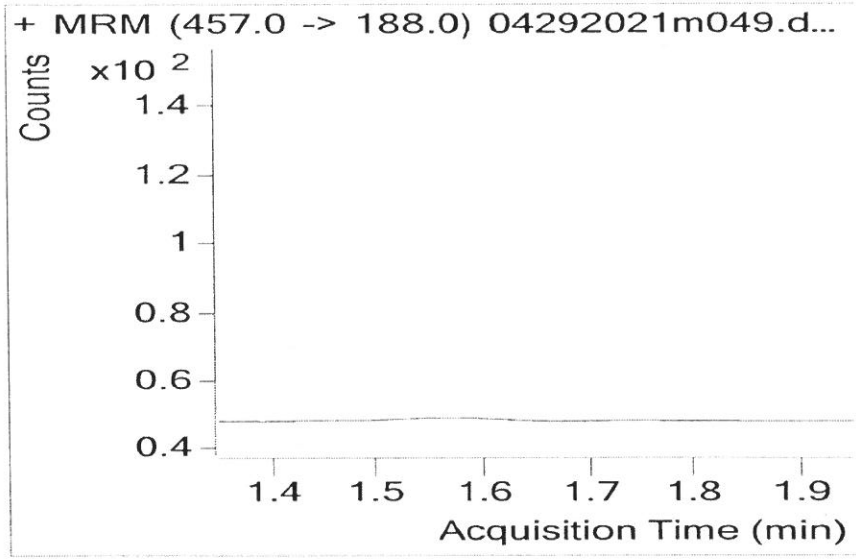


87

Acq Time	4/29/2021 14:26	**Data File**	04292021m049.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28444
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-B4		

Compound Graphics

IN-J9Z38

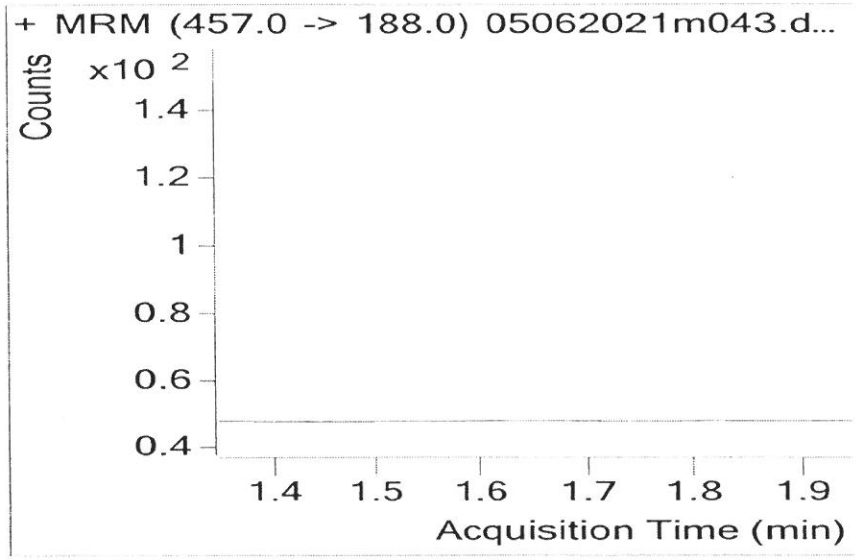


88

Acq Time	5/6/2021 14:21	**Data File**	05062021m043.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28400
Sample Info	DA-WA*370	**Sample Type**	Sample
Position	P1-B2		

Compound Graphics

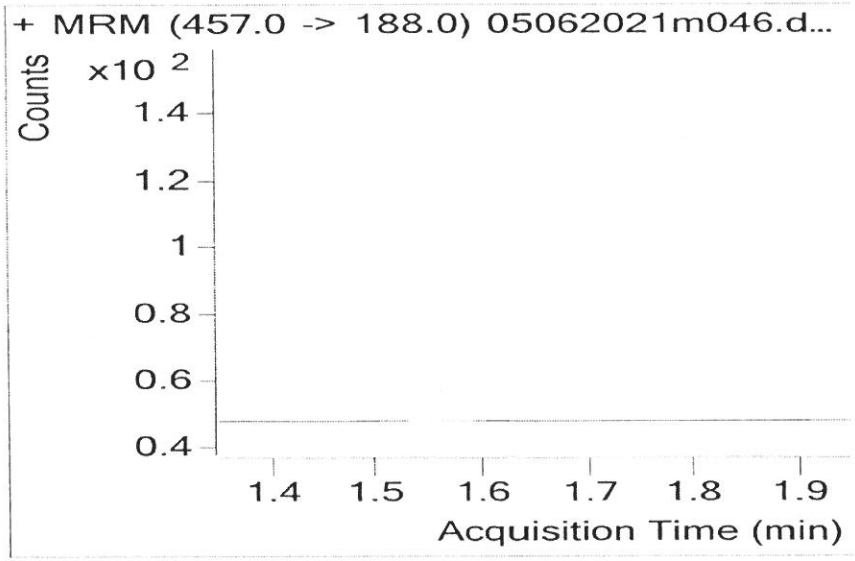
IN-J9Z38



Acq Time	5/6/2021 14:32	**Data File**	05062021m046.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28474
Sample Info	DA-ID167	**Sample Type**	Sample
Position	P1-B3		

Compound Graphics

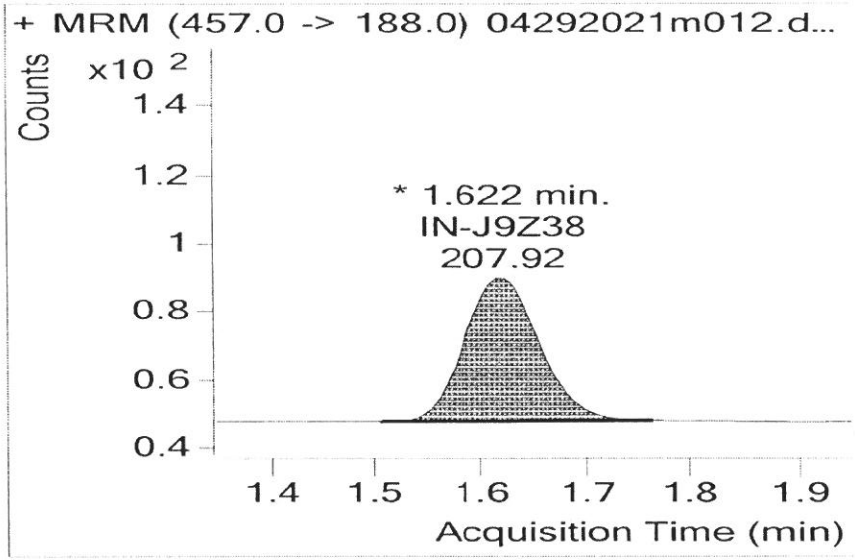
IN-J9Z38



Acq Time	4/29/2021 12:14	**Data File**	04292021m012.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28444V5.0R1
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-A1		

Compound Graphics

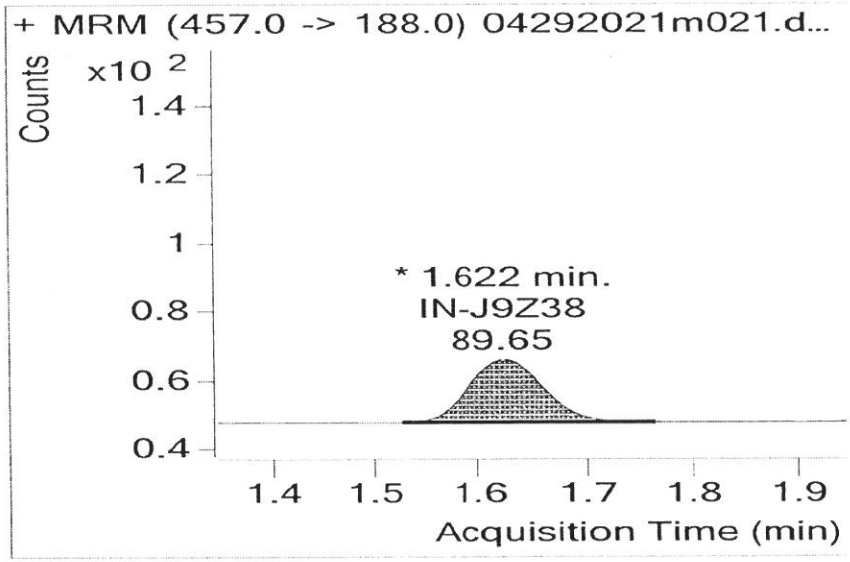
IN-J9Z38



Acq Time	4/29/2021 12:46	**Data File**	04292021m021.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28444V0.1R1
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

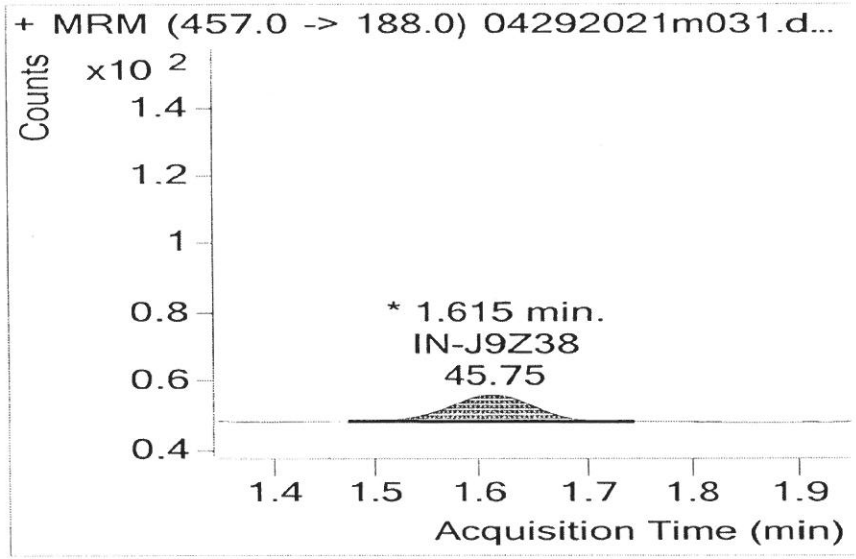
IN-J9Z38



Acq Time	4/29/2021 13:21	**Data File**	04292021m031.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28444V0.01R1
Sample Info	DA-FL136	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

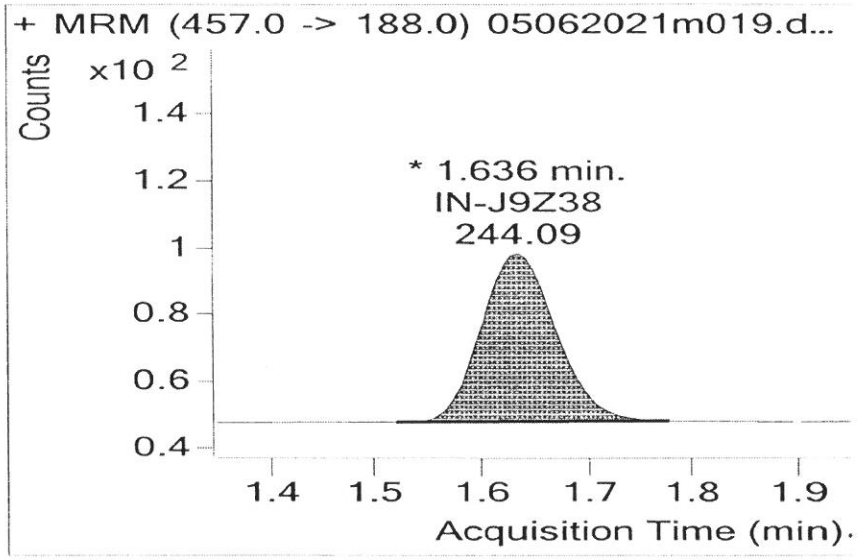
IN-J9Z38



Acq Time	5/6/2021 12:55	**Data File**	05062021m019.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28402
Sample Info	DC-WA*370	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

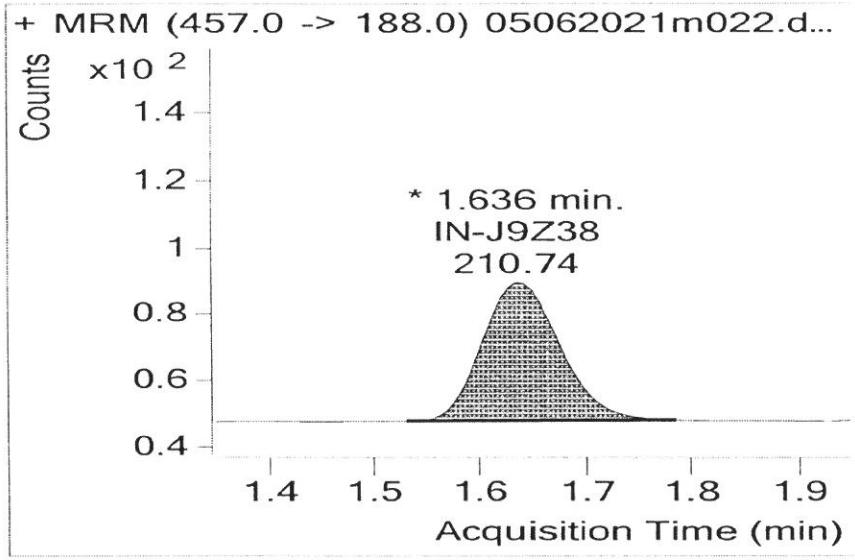
IN-J9Z38



Acq Time	5/6/2021 13:06	**Data File**	05062021m022.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28403
Sample Info	DD-WA*370	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

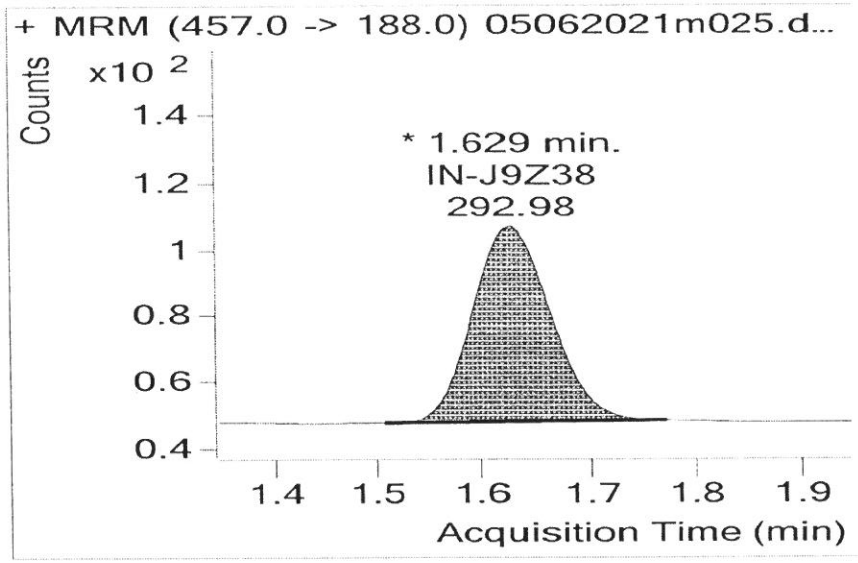
IN-J9Z38



Acq Time	5/6/2021 13:17	**Data File**	05062021m025.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28476
Sample Info	DC-ID167	**Sample Type**	Sample
Position	P1-A5		

Compound Graphics

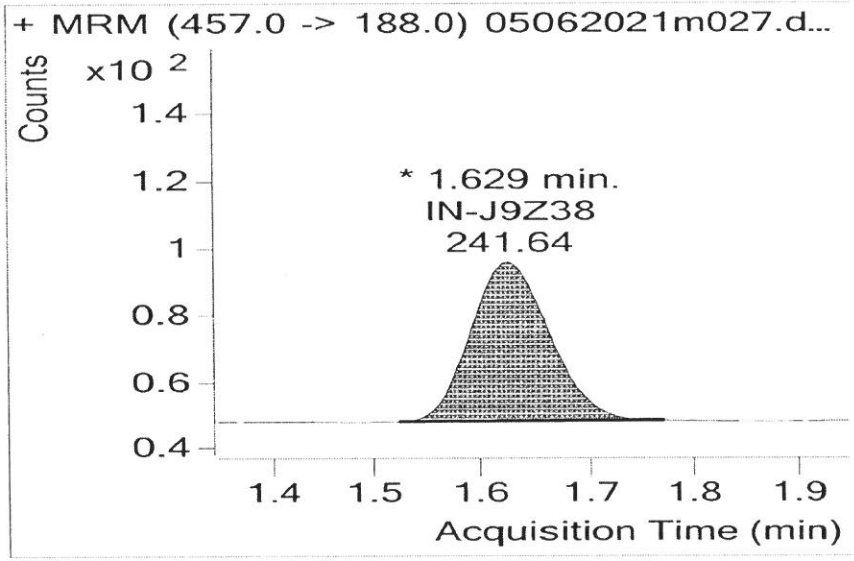
IN-J9Z38



Acq Time	5/6/2021 13:24	**Data File**	05062021m027.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28477
Sample Info	DD-ID167	**Sample Type**	Sample
Position	P1-A6		

Compound Graphics

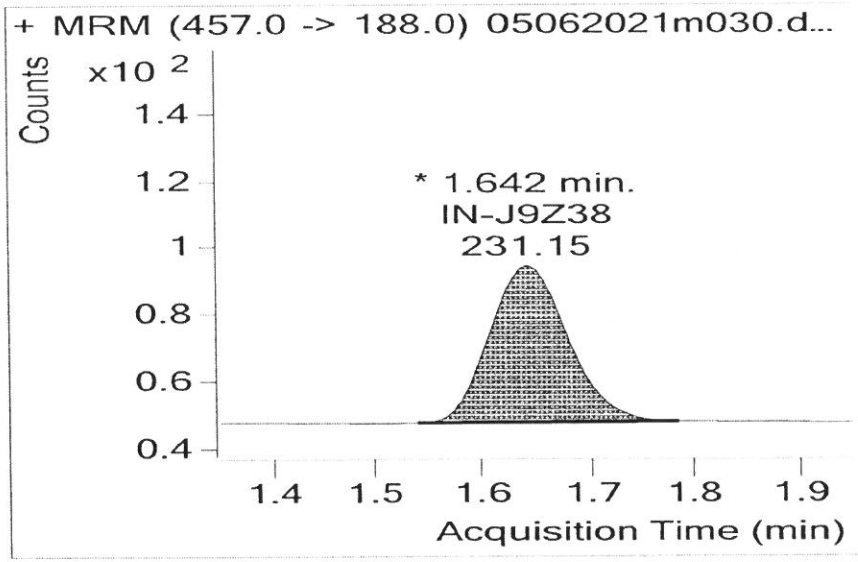
IN-J9Z38



Acq Time	5/6/2021 13:35	**Data File**	05062021m030.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28446
Sample Info	DC-FL136	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

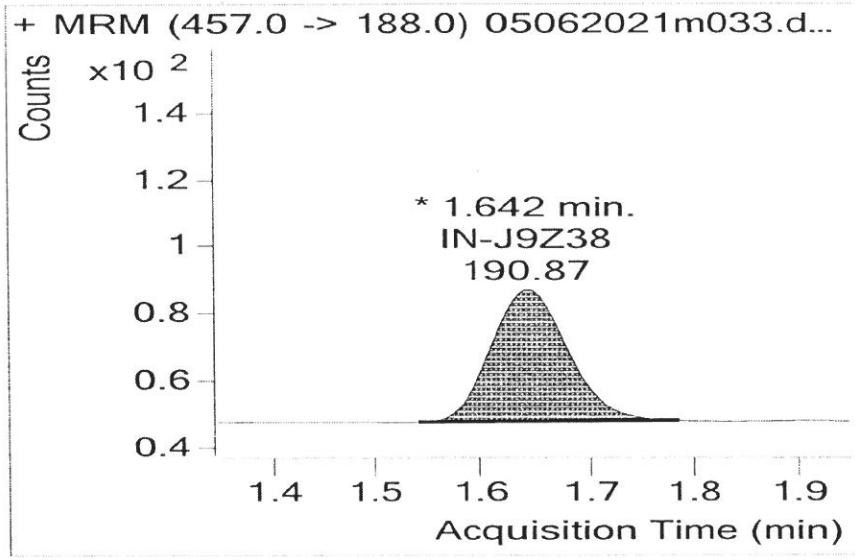
IN-J9Z38



Acq Time	5/6/2021 13:45	**Data File**	05062021m033.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28447
Sample Info	DD-FL136	**Sample Type**	Sample
Position	P1-A8		

Compound Graphics

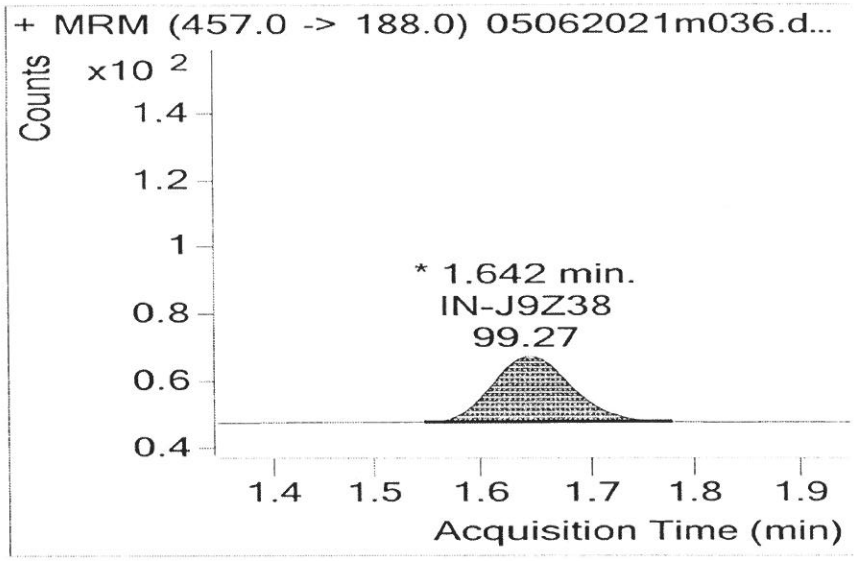
IN-J9Z38



Acq Time	5/6/2021 13:56	**Data File**	05062021m036.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28458
Sample Info	DC-CA96	**Sample Type**	Sample
Position	P1-A9		

Compound Graphics

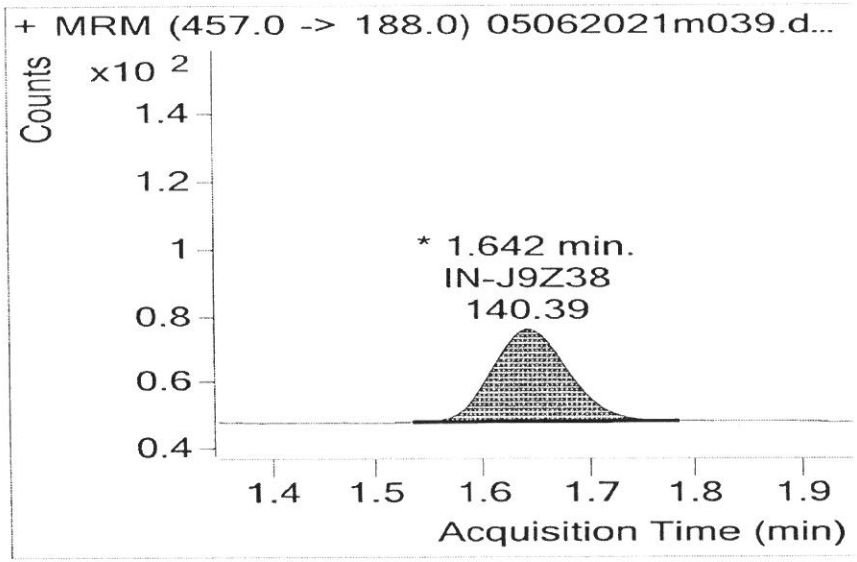
IN-J9Z38



Acq Time	5/6/2021 14:07	**Data File**	05062021m039.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28459
Sample Info	DD-CA96	**Sample Type**	Sample
Position	P1-B1		

Compound Graphics

IN-J9Z38

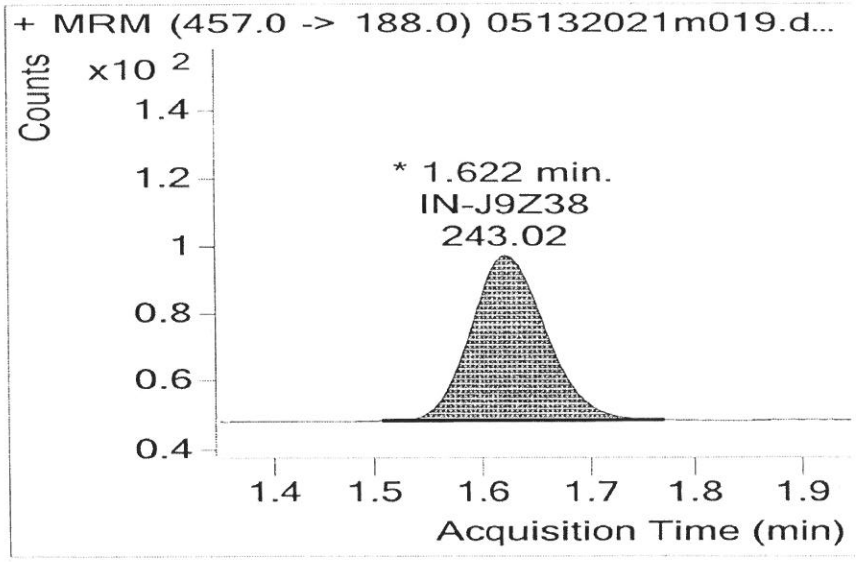


101

Acq Time	5/13/2021 15:45	**Data File**	05132021m019.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28418
Sample Info	DC-NJ249	**Sample Type**	Sample
Position	P1-A3		

Compound Graphics

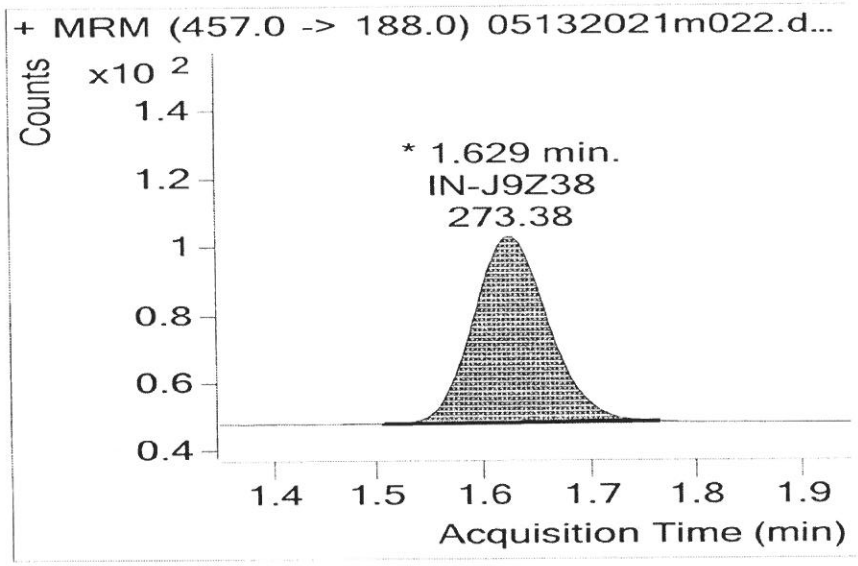
IN-J9Z38



Acq Time	5/13/2021 15:55	**Data File**	05132021m022.d
Acq Method File	INJ9Z38_ESI.m	**Sample Name**	28419
Sample Info	DD-NJ249	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

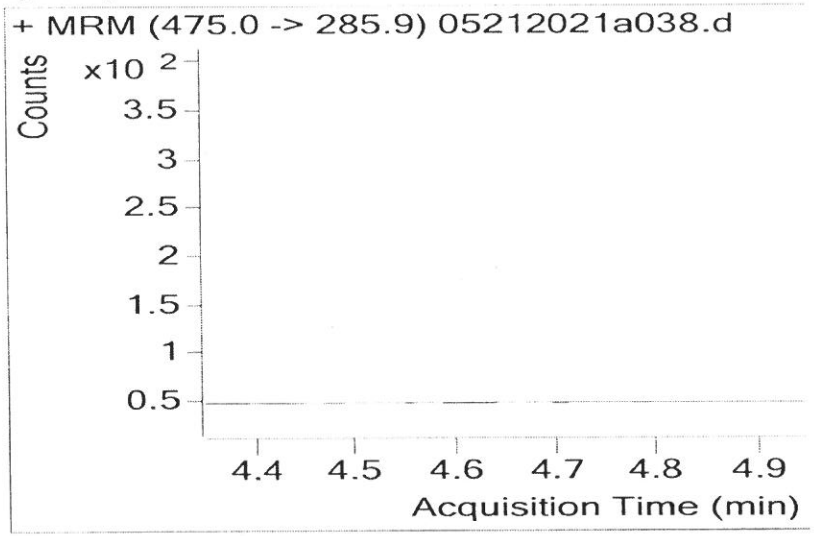
IN-J9Z38



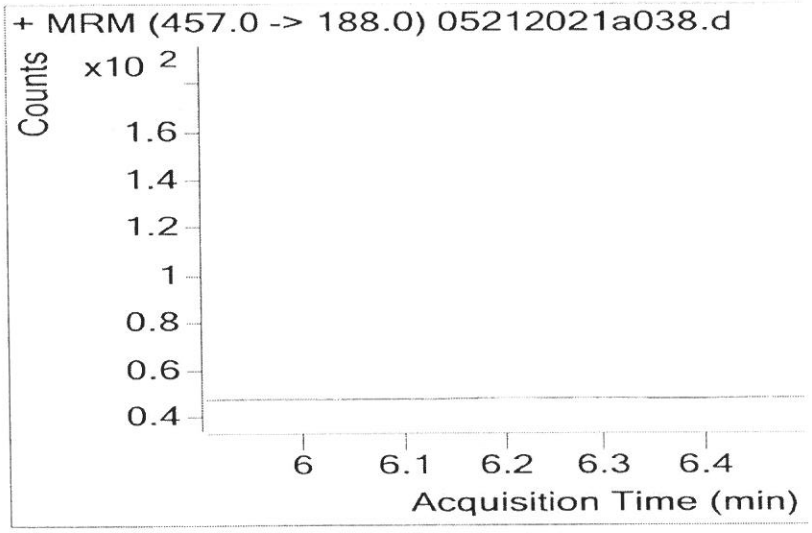
Acq Time	5/21/2021 21:54	**Data File**	05212021a038.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410
Sample Info	OA-WA*370	**Sample Type**	Sample
Position	P1-B1		

Compound Graphics

Cyantraniliprole



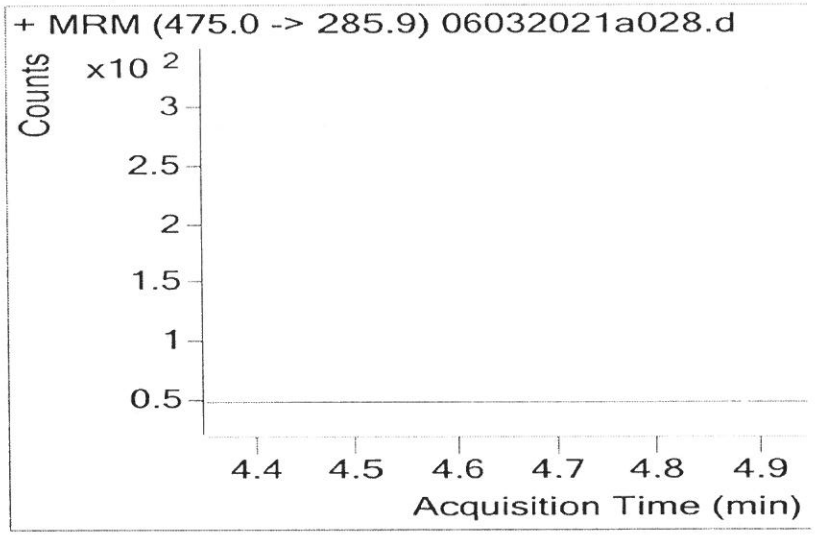
IN-J9Z38



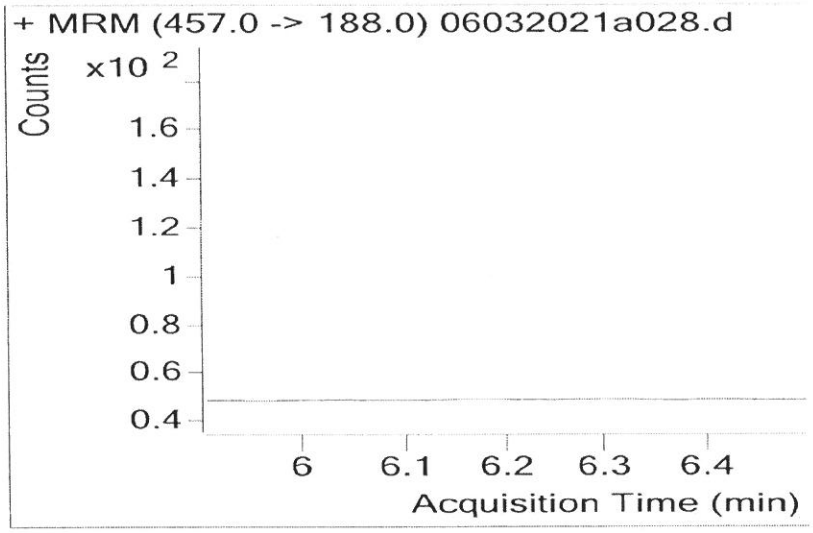
Acq Time	6/18/2021 2:10	**Data File**	06032021a028.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410 (Cyan)
Sample Info	OA-WA*370	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

Cyantraniliprole



IN-J9Z38

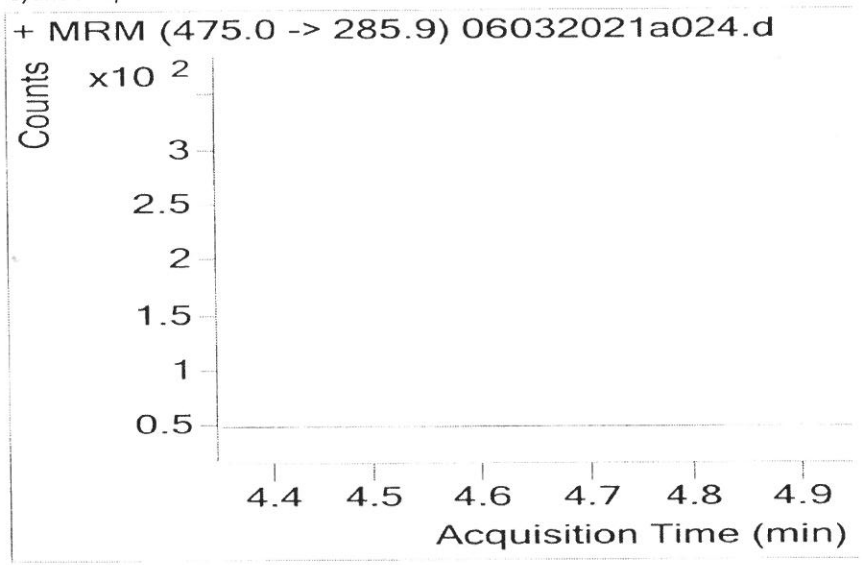


Acq Time	6/3/2021 17:43	**Data File**	06032021a024.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	~~28410~~ 28438
Sample Info	OA-WI388	**Sample Type**	Sample
Position	P1-A6		

EE 9/27/2021 MM

Compound Graphics

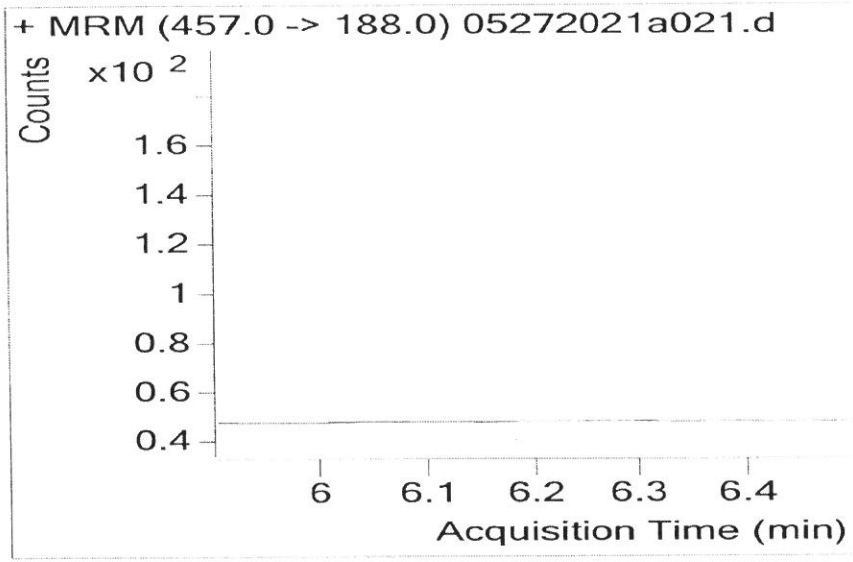
Cyantraniliprole



Acq Time	5/27/2021 15:37	**Data File**	05272021a021.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410
Sample Info	OA-WA*370	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

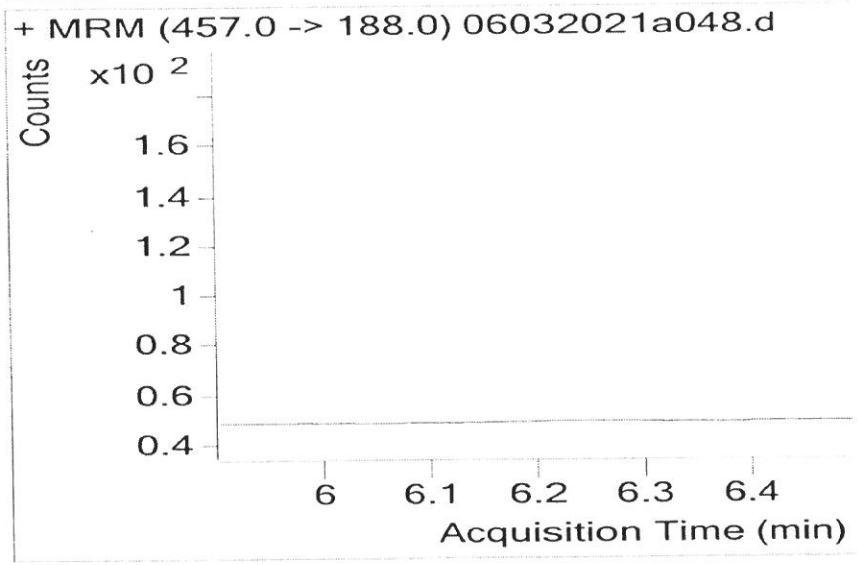
IN-J9Z38



Acq Time	6/4/2021 1:57	**Data File**	06032021a048.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410
Sample Info	OA-WI388	**Sample Type**	Sample
Position	P1-B3		

Compound Graphics

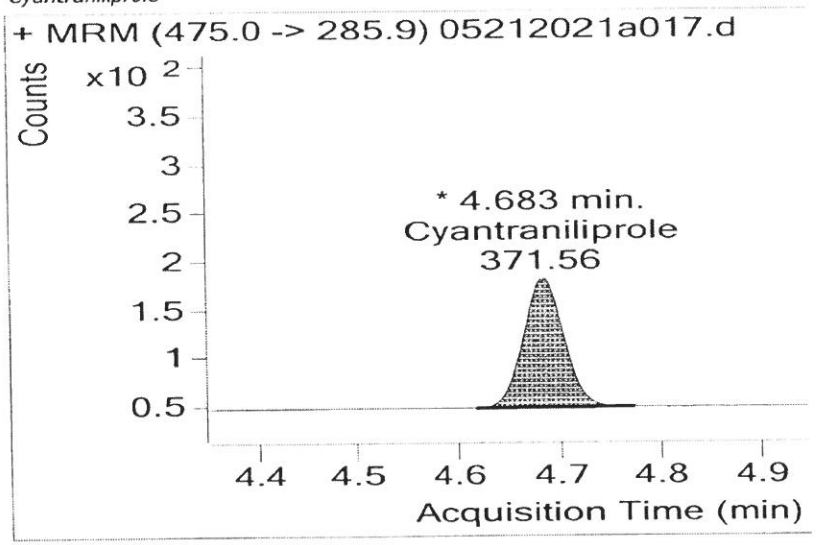
IN-J9Z38



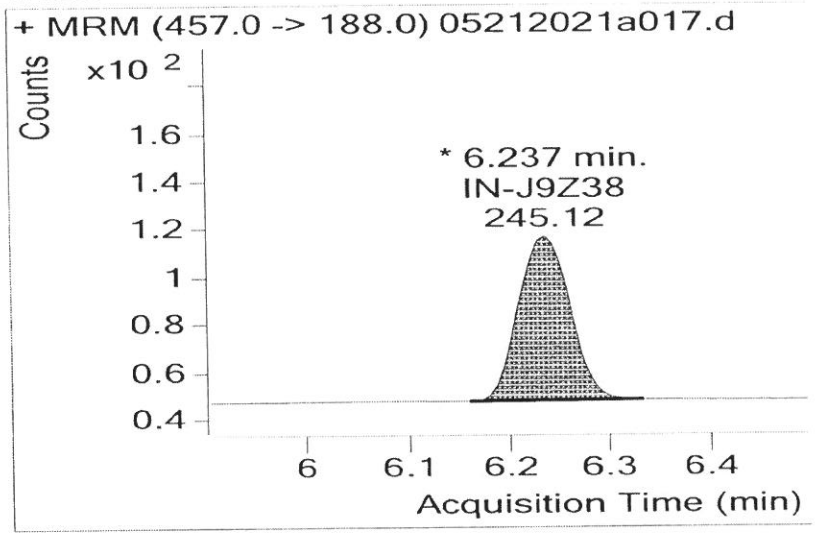
Acq Time	5/21/2021 14:42	**Data File**	05212021a017.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410V5.0R1
Sample Info	OA-WA*370	**Sample Type**	Sample
Position	P1-A1		

Compound Graphics

Cyantraniliprole



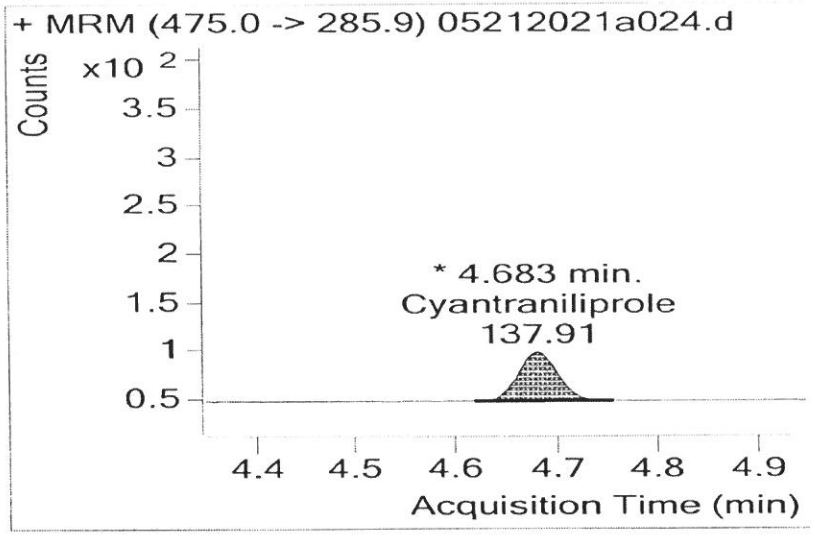
IN-J9Z38



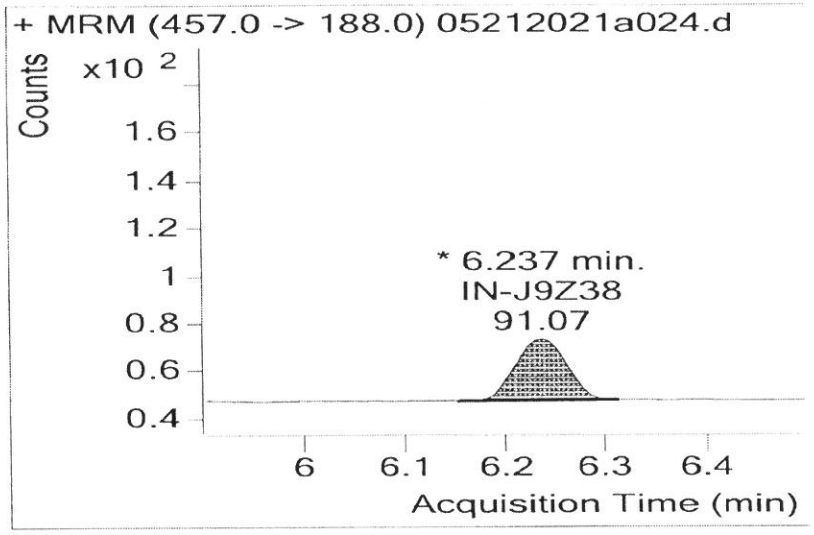
Acq Time	5/21/2021 17:06	**Data File**	05212021a024.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410V0.1R1
Sample Info	OA-WA*370	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

Cyantraniliprole



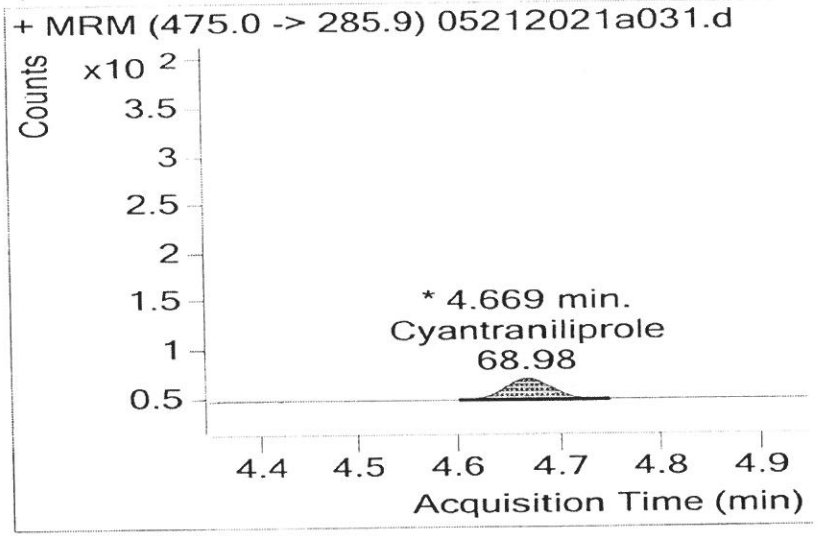
IN-J9Z38



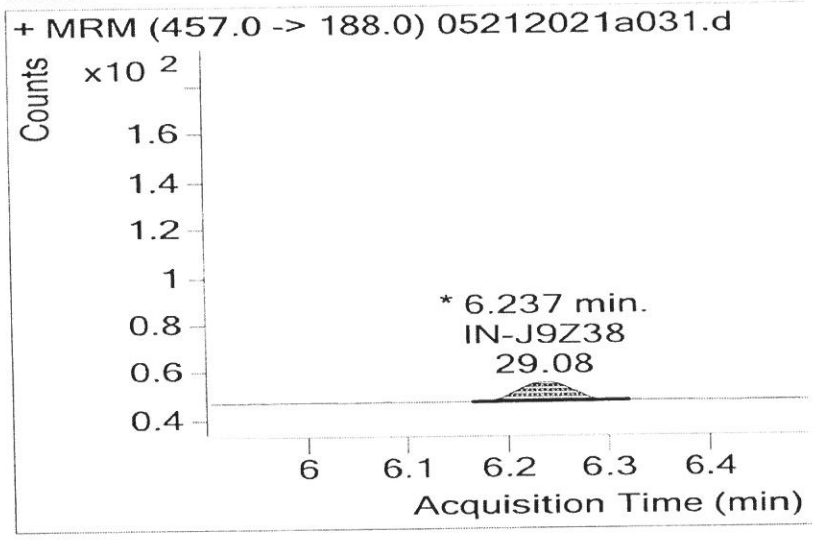
Acq Time	5/21/2021 19:30	**Data File**	05212021a031.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28410V0.01R1
Sample Info	OA-WA*370	**Sample Type**	Sample
Position	P1-A7		

Compound Graphics

Cyantraniliprole



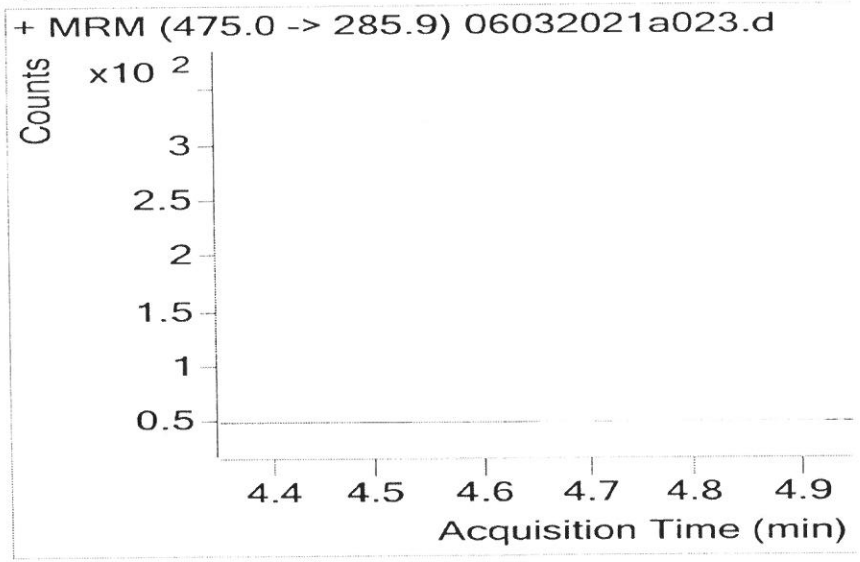
IN-J9Z38



Acq Time	6/3/2021 17:22	**Data File**	06032021a023.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28411
Sample Info	OT-WA*370	**Sample Type**	Sample
Position	P1-A5		

Compound Graphics

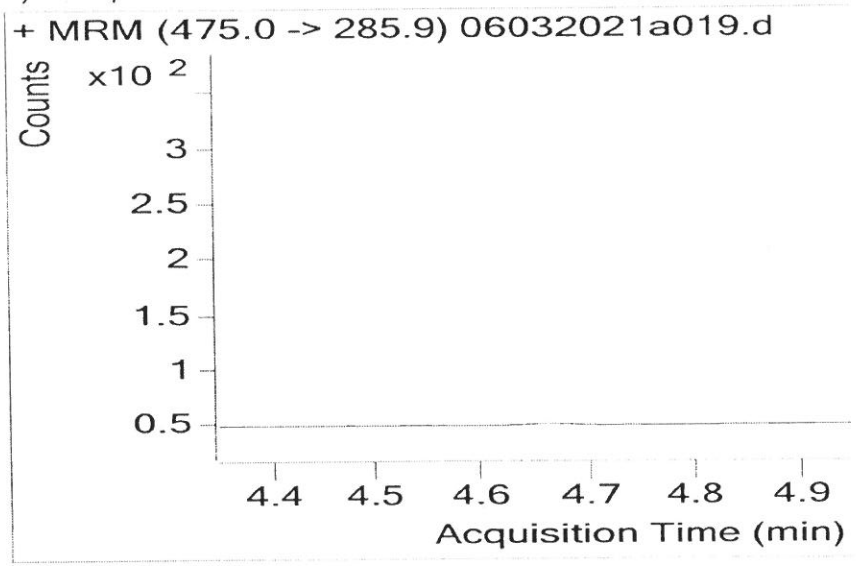
Cyantraniliprole



Acq Time	6/3/2021 16:00	**Data File**	06032021a019.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28439
Sample Info	OT-WI388	**Sample Type**	Sample
Position	P1-A4		

Compound Graphics

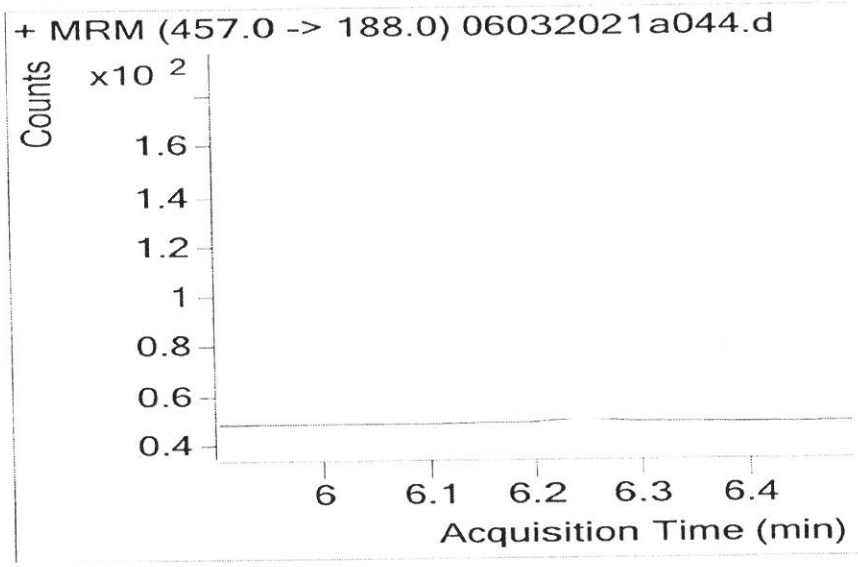
Cyantraniliprole



Acq Time	6/4/2021 0:34	**Data File**	06032021a044.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28439
Sample Info	OT-WI388	**Sample Type**	Sample
Position	P1-B1		

Compound Graphics

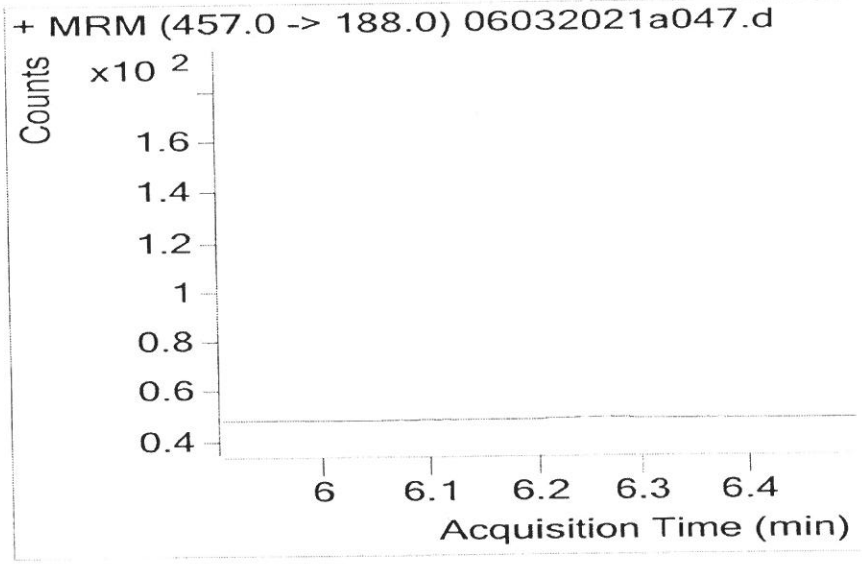
IN-J9Z38



Acq Time	6/4/2021 1:36	**Data File**	06032021a047.d
Acq Method File	Cyantraniliprole_ESI_Oil.m	**Sample Name**	28411
Sample Info	OT-WA*370	**Sample Type**	Sample
Position	P1-B2		

Compound Graphics

IN-J9Z38



ATTACHMENT B: DATA SUMMARIES AND STANDARD CURVES

Compound **Cyantraniliprole** Injection Date **3/23/2021**

LID#: 12401.20-CAR14, Dill (Fresh) Method Validation, extracted 3/22/2021

3/24/2021 M

P. 1 of 2

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	Ave % Rec	Std Dev
03232021a001.d	4.662	Condition		Sample	P1-A1	15.0										
03232021a002.d	4.676	Condition		Sample	P1-A2	15.0										
03232021a003.d	4.683	Condition		Sample	P1-A3	15.0										
03232021a004.d	4.686	Condition		Sample	P1-A1	15.0										
03232021a005.d	4.689	Condition		Sample	P1-A2	15.0										
03232021a006.d	4.689	Condition		Sample	P1-A3	15.0										
03232021a007.d	4.689	Condition		Sample	P1-A1	15.0										
03232021a008.d	4.689	Condition		Sample	P1-A2	15.0										
03232021a009.d	4.689	Condition		Sample	P1-A3	15.0										
03232021a010.d	4.689	718-2M25 0.50 pg/µL		Calibration	Vial 1	15.0				988.22						
03232021a011.d	4.693	718-2M26 0.20 pg/µL		Calibration	Vial 2	15.0				376.98						
03232021a012.d	4.693	718-2M27 0.10 pg/µL		Calibration	Vial 3	15.0				193.54						
03232021a013.d	4.696	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				94.48						
03232021a014.d	4.696	718-2M29 0.0250 pg/µL		Calibration	Vial 5	15.0				48.94						
03232021a015.d	4.696	28452V5.0R1	FA-CA96	Sample	P1-A1	15.0	0.100	2000.0	0.00075	449.78	0.230	4.5946				
03232021a016.d	4.693	28452V5.0R1	FA-CA96	Sample	P1-A1	15.0	0.100	2000.0	0.00075	448.78	0.229	4.5846	4.59	92%		
03232021a017.d	4.693	28452V5.0R2	FA-CA96	Sample	P1-A2	15.0	0.100	2000.0	0.00075	448.01	0.229	4.5767				
03232021a018.d	4.689	28452V5.0R2	FA-CA96	Sample	P1-A2	15.0	0.100	2000.0	0.00075	448.88	0.229	4.5855	4.58	92%		
03232021a019.d	4.693	718-2M26 0.20 pg/µL		Calibration	Vial 2	15.0				395.49						
03232021a020.d	4.693	28452V5.0R3	FA-CA96	Sample	P1-A3	15.0	0.100	2000.0	0.00075	388.56	0.199	3.9764				
03232021a021.d	4.693	28452V5.0R3	FA-CA96	Sample	P1-A3	15.0	0.100	2000.0	0.00075	382.03	0.196	3.9105	3.94	79%	87%	7%
03232021a022.d	4.693	28452V0.1R1	FA-CA96	Sample	P1-A4	15.0	0.100	100.0	0.0150	150.01	0.0784	0.0784				
03232021a023.d	4.693	28452V0.1R1	FA-CA96	Sample	P1-A4	15.0	0.100	100.0	0.0150	148.10	0.0774	0.0774	0.0779	78%		
03232021a024.d	4.693	718-2M27 0.10 pg/µL		Calibration	Vial 3	15.0				195.18						
03232021a025.d	4.693	28452V0.1R2	FA-CA96	Sample	P1-A5	15.0	0.100	100.0	0.0150	165.77	0.0863	0.0863				
03232021a026.d	4.693	28452V0.1R2	FA-CA96	Sample	P1-A5	15.0	0.100	100.0	0.0150	168.13	0.0875	0.0875	0.0869	87%		
03232021a027.d	4.689	28452V0.1R3	FA-CA96	Sample	P1-A6	15.0	0.100	100.0	0.0150	152.26	0.0795	0.0795				
03232021a028.d	4.693	28452V0.1R3	FA-CA96	Sample	P1-A6	15.0	0.100	100.0	0.0150	148.41	0.0776	0.0776	0.0785	79%	81%	5%
03232021a029.d	4.696	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				94.43						

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	Ave % Rec	Std Dev
03232021a030.d	4.693	28452V0.01R1	FA-CA96	Sample	P1-A7	15.0	0.100	20.0	0.0750	96.69	0.0515	0.0103				
03232021a031.d	4.693	28452V0.01R1	FA-CA96	Sample	P1-A7	15.0	0.100	20.0	0.0750	98.64	0.0524	0.0105	0.0104	104%		
03232021a032.d	4.689	28452V0.01R2	FA-CA96	Sample	P1-A8	15.0	0.100	20.0	0.0750	76.16	0.0411	0.00822				
03232021a033.d	4.689	28452V0.01R2	FA-CA96	Sample	P1-A8	15.0	0.100	20.0	0.0750	75.87	0.0409	0.00819	0.00820	82%		
03232021a034.d	4.696	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				93.10						
03232021a035.d	4.693	28452V0.01R3	FA-CA96	Sample	P1-A9	15.0	0.100	20.0	0.0750	72.45	0.0392	0.00784				
03232021a036.d	4.689	28452V0.01R3	FA-CA96	Sample	P1-A9	15.0	0.100	20.0	0.0750	71.01	0.0385	0.00770	0.00777	78%		
03232021a037.d	4.693	28452V0.01R4	FA-CA96	Sample	P1-B1	15.0	0.100	20.0	0.0750	75.59	0.0408	0.00816				
03232021a038.d	4.693	28452V0.01R4	FA-CA96	Sample	P1-B1	15.0	0.100	20.0	0.0750	75.53	0.0408	0.00815	0.00816	82%		
03232021a039.d	4.696	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				91.85						
03232021a040.d	4.696	28452V0.01R5	FA-CA96	Sample	P1-B2	15.0	0.100	20.0	0.0750	69.70	0.0378	0.00757				
03232021a041.d	4.693	28452V0.01R5	FA-CA96	Sample	P1-B2	15.0	0.100	20.0	0.0750	68.40	0.0372	0.00743	0.00750	75%		
03232021a042.d	4.689	28452V0.01R6	FA-CA96	Sample	P1-B3	15.0	0.100	20.0	0.0750	63.68	0.0348	0.00696				
03232021a043.d	4.693	28452V0.01R6	FA-CA96	Sample	P1-B3	15.0	0.100	20.0	0.0750	64.34	0.0351	0.00702	0.00699	70%	82%	12%
03232021a044.d	4.693	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				91.30						
03232021a045.d	-----	28452	FA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
03232021a046.d	-----	28452	FA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
03232021a047.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
03232021a048.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
03232021a049.d	4.693	718-2M29 0.0250 pg/µL		Calibration	Vial 5	15.0				46.63						

Calculated LOD response at 0.0225 pg/µL= 39.34
Calculated LOQ response at 0.050 pg/µL= 93.81
"-----" Denotes response below area threshold

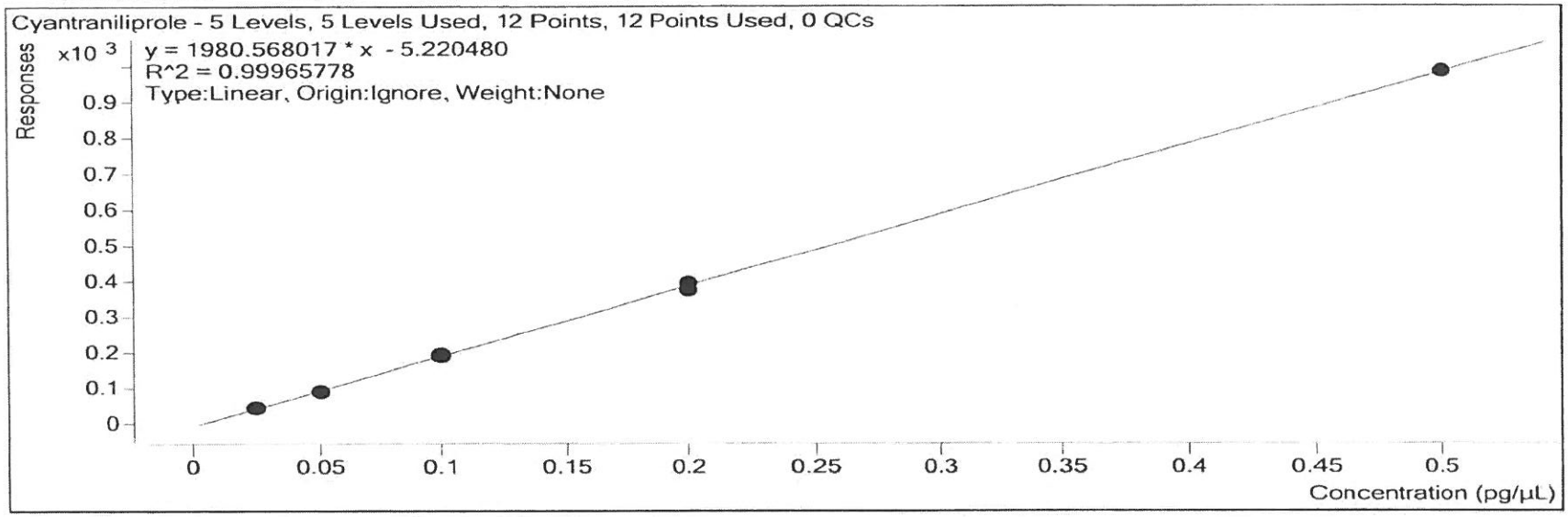
3/24/2021

P. 2 of 2

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\QuantResults\03232021a.batch.bin 3/24/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a010.d	Calibration	1	☑	988	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a011.d	Calibration	2	☑	377	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a019.d	Calibration	2	☑	395	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a012.d	Calibration	3	☑	194	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a024.d	Calibration	3	☑	195	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a013.d	Calibration	4	☑	94	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a029.d	Calibration	4	☑	94	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a034.d	Calibration	4	☑	93	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a039.d	Calibration	4	☑	92	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a044.d	Calibration	4	☑	91	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a014.d	Calibration	5	☑	49	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03232021\03232021a049.d	Calibration	5	☑	47	0.0250

Compound
Cyantraniliprole

Injection Date
4/5/2021

LID#: 12401.20-CAR14, Dill (Seed) Method Validation, extracted 4/5/2021

4/6/2021

P. 1 of 2

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	Ave % Rec	Std Dev
04052021a001.d	4.636	Condition		Sample	P1-A1	15.0										
04052021a002.d	4.652	Condition		Sample	P1-A2	15.0										
04052021a003.d	4.659	Condition		Sample	P1-A3	15.0										
04052021a004.d	4.669	Condition		Sample	P1-A1	15.0										
04052021a005.d	4.676	Condition		Sample	P1-A2	15.0										
04052021a006.d	4.672	Condition		Sample	P1-A3	15.0										
04052021a007.d	4.679	Condition		Sample	P1-A1	15.0										
04052021a008.d	4.679	Condition		Sample	Vial 1	15.0										
04052021a009.d	4.679	Condition		Sample	Vial 1	15.0										
04052021a010.d	4.679	718-2M39 0.50 pg/µL		Calibration	Vial 1	15.0				1007.74						
04052021a011.d	4.679	718-2M40 0.20 pg/µL		Calibration	Vial 2	15.0				384.83						
04052021a012.d	4.679	718-2M41 0.10 pg/µL		Calibration	Vial 3	15.0				180.85						
04052021a013.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				92.68						
04052021a014.d	4.683	718-2M43 0.0250 pg/µL		Calibration	Vial 5	15.0				43.87						
04052021a015.d	4.679	28460V5.0R1	SA-CA96	Sample	P1-A1	15.0	0.100	2000.0	0.00075	396.47	0.201	4.0235				
04052021a016.d	4.679	28460V5.0R1	SA-CA96	Sample	P1-A1	15.0	0.100	2000.0	0.00075	392.99	0.199	3.9891	4.01	80%		
04052021a017.d	4.679	28460V5.0R2	SA-CA96	Sample	P1-A2	15.0	0.100	2000.0	0.00075	455.84	0.231	4.6106				
04052021a018.d	4.679	28460V5.0R2	SA-CA96	Sample	P1-A2	15.0	0.100	2000.0	0.00075	455.01	0.230	4.6024	4.61	92%		
04052021a019.d	4.679	718-2M40 0.20 pg/µL		Calibration	Vial 2	15.0				389.39						
04052021a020.d	4.672	28460V5.0R3	SA-CA96	Sample	P1-A3	15.0	0.100	2000.0	0.00075	478.03	0.242	4.8302				
04052021a021.d	4.679	28460V5.0R3	SA-CA96	Sample	P1-A3	15.0	0.100	2000.0	0.00075	477.40	0.241	4.8239	4.83	97%	90%	8%
04052021a022.d	4.679	28460V0.1R1	SA-CA96	Sample	P1-A4	15.0	0.100	100.0	0.0150	158.97	0.0837	0.0837				
04052021a023.d	4.676	28460V0.1R1	SA-CA96	Sample	P1-A4	15.0	0.100	100.0	0.0150	162.71	0.0856	0.0856	0.0846	85%		
04052021a024.d	4.679	718-2M41 0.10 pg/µL		Calibration	Vial 3	15.0				187.11						
04052021a025.d	4.679	28460V0.1R2	SA-CA96	Sample	P1-A5	15.0	0.100	100.0	0.0150	138.02	0.0734	0.0734				
04052021a026.d	4.679	28460V0.1R2	SA-CA96	Sample	P1-A5	15.0	0.100	100.0	0.0150	137.37	0.0730	0.0730	0.0732	73%		
04052021a027.d	4.679	28460V0.1R3	SA-CA96	Sample	P1-A6	15.0	0.100	100.0	0.0150	134.20	0.0715	0.0715				
04052021a028.d	4.679	28460V0.1R3	SA-CA96	Sample	P1-A6	15.0	0.100	100.0	0.0150	133.90	0.0713	0.0713	0.0714	71%	76%	7%
04052021a029.d	4.683	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				93.03						

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	Ave % Rec	Ave % Rec	Std Dev
04052021a030.d	4.679	28460V0.01R1	SA-CA96	Sample	P1-A7	15.0	0.100	20.0	0.0750	79.91	0.0446	0.00892				
04052021a031.d	4.676	28460V0.01R1	SA-CA96	Sample	P1-A7	15.0	0.100	20.0	0.0750	80.28	0.0448	0.00896	0.00894	89%		
04052021a032.d	4.676	28460V0.01R2	SA-CA96	Sample	P1-A8	15.0	0.100	20.0	0.0750	71.14	0.0403	0.00806				
04052021a033.d	4.676	28460V0.01R2	SA-CA96	Sample	P1-A8	15.0	0.100	20.0	0.0750	69.89	0.0397	0.00793	0.00799	80%		
04052021a034.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				98.30						
04052021a035.d	4.676	28460V0.01R3	SA-CA96	Sample	P1-A9	15.0	0.100	20.0	0.0750	74.05	0.0417	0.00834				
04052021a036.d	4.679	28460V0.01R3	SA-CA96	Sample	P1-A9	15.0	0.100	20.0	0.0750	75.17	0.0423	0.00846	0.00840	84%		
04052021a037.d	4.679	28460V0.01R4	SA-CA96	Sample	P1-B1	15.0	0.100	20.0	0.0750	76.62	0.0430	0.00860				
04052021a038.d	4.679	28460V0.01R4	SA-CA96	Sample	P1-B1	15.0	0.100	20.0	0.0750	76.10	0.0427	0.00855	0.00857	86%		
04052021a039.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				90.58						
04052021a040.d	4.676	28460V0.01R5	SA-CA96	Sample	P1-B2	15.0	0.100	20.0	0.0750	82.08	0.0457	0.00914				
04052021a041.d	4.679	28460V0.01R5	SA-CA96	Sample	P1-B2	15.0	0.100	20.0	0.0750	84.91	0.0471	0.00942	0.00928	93%		
04052021a042.d	4.676	28460V0.01R6	SA-CA96	Sample	P1-B3	15.0	0.100	20.0	0.0750	63.71	0.0366	0.00732				
04052021a043.d	4.679	28460V0.01R6	SA-CA96	Sample	P1-B3	15.0	0.100	20.0	0.0750	64.88	0.0372	0.00744	0.00738	74%	84%	7%
04052021a044.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				91.19						
04052021a045.d	-----	28460	SA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04052021a046.d	-----	28460	SA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04052021a047.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04052021a048.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04052021a049.d	4.686	718-2M43 0.0250 pg/µL		Calibration	Vial 5	15.0				47.58						

Calculated LOD response at 0.0225 pg/µL= 35.19
Calculated LOQ response at 0.050 pg/µL= 90.79
"----" Denotes response below area threshold

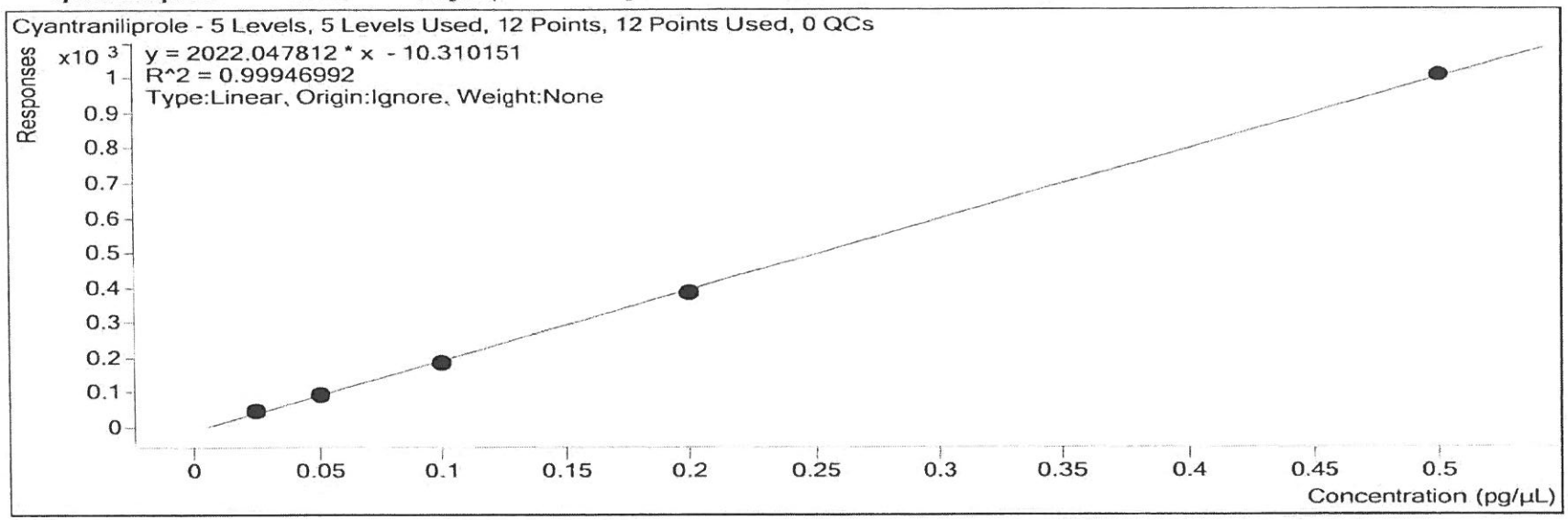
4/6/2021

P. 2 of 2

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\QuantResults\04052021a.batch.bin 4/6/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a010.d	Calibration	1	☑	1008	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a011.d	Calibration	2	☑	385	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a019.d	Calibration	2	☑	389	0.2000
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D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a024.d	Calibration	3	☑	187	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a013.d	Calibration	4	☑	93	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a029.d	Calibration	4	☑	93	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a034.d	Calibration	4	☑	98	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a039.d	Calibration	4	☑	91	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a044.d	Calibration	4	☑	91	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a014.d	Calibration	5	☑	44	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04052021\04052021a049.d	Calibration	5	☑	48	0.0250

Compound
Cyantraniliprole

Injection Date
5/1/2021

LID#: 12401.20-CAR14, Dill (Dry) Method Validation, extracted 4/29/2021

5/3/2021
M
P 1 of 2

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	Ave % Rec	Std Dev
05012021p001.d	4.689	Condition		Sample	P1-A1	15.0										
05012021p002.d	4.686	Condition		Sample	P1-A1	15.0										
05012021p003.d	4.686	Condition		Sample	P1-A2	15.0										
05012021p004.d	4.689	Condition		Sample	P1-A2	15.0										
05012021p005.d	4.689	Condition		Sample	P1-A3	15.0										
05012021p006.d	4.686	Condition		Sample	P1-A3	15.0										
05012021p007.d	4.689	Condition		Sample	P1-A2	15.0										
05012021p008.d	4.689	Condition		Sample	P1-A3	15.0										
05012021p009.d	4.689	Condition		Sample	P1-A3	15.0										
05012021p010.d	4.689	Condition		Sample	Vial 1	15.0										
05012021p011.d	4.693	718-2M54 0.50 pg/µL		Calibration	Vial 1	15.0	0.000	1.0		1057.99						
05012021p012.d	4.689	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0	0.000	1.0		405.53						
05012021p013.d	4.686	718-2M56 0.10 pg/µL		Calibration	Vial 3	15.0	0.000	1.0		197.96						
05012021p014.d	4.689	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0	0.000	1.0		96.42						
05012021p015.d	4.689	718-2M58 0.0250 pg/µL		Calibration	Vial 5	15.0	0.000	1.0		51.79						
05012021p016.d	4.689	28444V5.0R1	DA-FL136	Sample	P1-A1	15.0	0.100	2000.0	0.00075	407.87	0.199	3.9781				
05012021p017.d	4.689	28444V5.0R1	DA-FL136	Sample	P1-A1	15.0	0.100	2000.0	0.00075	411.74	0.201	4.0145	4.00	80%		
05012021p018.d	4.683	28444V5.0R2	DA-FL136	Sample	P1-A2	15.0	0.100	2000.0	0.00075	434.92	0.212	4.2324				
05012021p019.d	4.686	28444V5.0R2	DA-FL136	Sample	P1-A2	15.0	0.100	2000.0	0.00075	432.56	0.211	4.2102	4.22	84%		
05012021p020.d	4.683	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0	0.000	1.0		403.80						
05012021p021.d	4.683	28444V5.0R3	DA-FL136	Sample	P1-A3	15.0	0.100	2000.0	0.00075	432.64	0.211	4.2109				
05012021p022.d	4.686	28444V5.0R3	DA-FL136	Sample	P1-A3	15.0	0.100	2000.0	0.00075	439.43	0.214	4.2748	4.24	85%	83%	3%
05012021p023.d	4.689	28444V0.1R1	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	164.45	0.0845	0.0845				
05012021p024.d	4.686	28444V0.1R1	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	158.36	0.0816	0.0816	0.0831	83%		
05012021p025.d	4.686	718-2M56 0.10 pg/µL		Calibration	Vial 3	15.0	0.000	1.0		182.80						
05012021p026.d	4.686	28444V0.1R2	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	156.49	0.0808	0.0808				
05012021p027.d	4.683	28444V0.1R2	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	158.56	0.0817	0.0817	0.0812	81%		
05012021p028.d	4.683	28444V0.1R3	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	150.86	0.0781	0.0781				
05012021p029.d	4.686	28444V0.1R3	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	147.76	0.0767	0.0767	0.0774	77%	81%	3%
05012021p030.d	4.686	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0	0.000	1.0		401.72						

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	Ave % Rec	Ave % Rec	Std Dev
05012021p031.d	4.679	28444V0.01R1	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	103.70	0.0559	0.0112				
05012021p032.d	4.683	28444V0.01R1	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	102.75	0.0555	0.0111	0.0111	111%		
05012021p033.d	4.686	28444V0.01R2	DA-FL136	Sample	P1-A8	15.0	0.100	20.0	0.0750	88.78	0.0489	0.00979				
05012021p034.d	4.686	28444V0.01R2	DA-FL136	Sample	P1-A8	15.0	0.100	20.0	0.0750	88.89	0.0490	0.00980	0.00979	98%		
05012021p035.d	4.683	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0	0.000	1.0		89.61						
05012021p036.d	4.679	28444V0.01R3	DA-FL136	Sample	P1-A9	15.0	0.100	20.0	0.0750	83.02	0.0462	0.00924				
05012021p037.d	4.679	28444V0.01R3	DA-FL136	Sample	P1-A9	15.0	0.100	20.0	0.0750	85.35	0.0473	0.00946	0.00935	94%		
05012021p038.d	4.683	28444V0.01R4	DA-FL136	Sample	P1-B1	15.0	0.100	20.0	0.0750	101.50	0.0549	0.0110				
05012021p039.d	4.686	28444V0.01R4	DA-FL136	Sample	P1-B1	15.0	0.100	20.0	0.0750	101.11	0.0547	0.0109	0.0110	110%		
05012021p040.d	4.689	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0	0.000	1.0		87.78						
05012021p041.d	4.686	28444V0.01R5	DA-FL136	Sample	P1-B2	15.0	0.100	20.0	0.0750	102.95	0.0556	0.0111				
05012021p042.d	4.686	28444V0.01R5	DA-FL136	Sample	P1-B2	15.0	0.100	20.0	0.0750	103.54	0.0559	0.0112	0.0111	111%		
05012021p043.d	4.689	28444V0.01R6	DA-FL136	Sample	P1-B3	15.0	0.100	20.0	0.0750	101.02	0.0547	0.0109				
05012021p044.d	4.683	28444V0.01R6	DA-FL136	Sample	P1-B3	15.0	0.100	20.0	0.0750	98.65	0.0536	0.0107	0.0108	108%	105%	8%
05012021p045.d	4.686	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0	0.000	1.0		89.03						
05012021p046.d	-----	28444	DA-FL136	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05012021p047.d	-----	28444	DA-FL136	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05012021p048.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05012021p049.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05012021p050.d	4.689	718-2M58 0.0250 pg/µL		Calibration	Vial 5	15.0	0.000	1.0		49.45						

Calculated LOD response at 0.0225 pg/µL= 32.54
Calculated LOQ response at 0.050 pg/µL= 91.05
"-----" Denotes response below area threshold

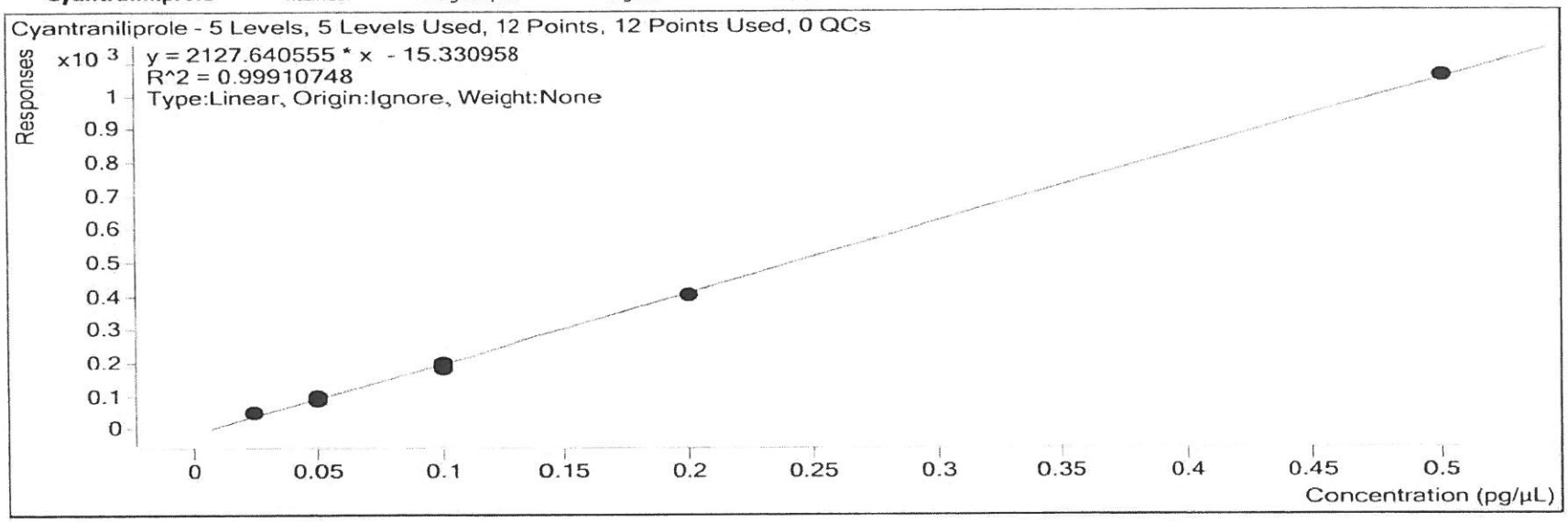
5/3/2021

P. 2 of 2

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\QuantResults\05012021p.batch.bin 5/3/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p011.d	Calibration	1	☑	1058	0.5000
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D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p020.d	Calibration	2	☑	404	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p030.d	Calibration	2	☑	402	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p013.d	Calibration	3	☑	198	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p025.d	Calibration	3	☑	183	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p014.d	Calibration	4	☑	96	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p035.d	Calibration	4	☑	90	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p040.d	Calibration	4	☑	88	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p045.d	Calibration	4	☑	89	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p015.d	Calibration	5	☑	52	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05012021\05012021p050.d	Calibration	5	☑	49	0.0250

Compound: **IN-J9Z38** Injection Date: **4/29/2021**

LID#: 12401.20-CAR14, Dill (Dry) Method Validation, extracted 4/29/2021

4/29/2021 MM

P. 1 of 2

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	Ave % Rec	Std Dev
04292021m001.d	1.602	Condition		Sample	P1-A1	15.0										
04292021m002.d	1.609	Condition		Sample	P1-A1	15.0										
04292021m003.d	1.609	Condition		Sample	P1-A2	15.0										
04292021m004.d	1.609	Condition		Sample	P1-A2	15.0										
04292021m005.d	1.615	Condition		Sample	P1-A3	15.0										
04292021m006.d	1.615	Condition		Sample	P1-A3	15.0										
04292021m007.d	1.615	718-2M54 0.50 pg/µL		Calibration	Vial 1	15.0				485.33						
04292021m008.d	1.615	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0				185.81						
04292021m009.d	1.615	718-2M56 0.10 pg/µL		Calibration	Vial 3	15.0				94.31						
04292021m010.d	1.622	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				49.89						
04292021m011.d	1.622	718-2M58 0.0250 pg/µL		Calibration	Vial 5	15.0				27.66						
04292021m012.d	1.622	28444V5.0R1	DA-FL136	Sample	P1-A1	15.0	0.100	2000.0	0.00075	207.92	0.218	4.3606				
04292021m013.d	1.622	28444V5.0R1	DA-FL136	Sample	P1-A1	15.0	0.100	2000.0	0.00075	214.02	0.224	4.4865	4.42	88%		
04292021m014.d	1.622	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0				192.57						
04292021m015.d	1.622	28444V5.0R2	DA-FL136	Sample	P1-A2	15.0	0.100	2000.0	0.00075	214.83	0.225	4.5034				
04292021m016.d	1.622	28444V5.0R2	DA-FL136	Sample	P1-A2	15.0	0.100	2000.0	0.00075	206.62	0.217	4.3339	4.42	88%		
04292021m017.d	1.622	718-2M56 0.10 pg/µL		Calibration	Vial 3	15.0				94.03						
04292021m018.d	1.622	28444V5.0R3	DA-FL136	Sample	P1-A3	15.0	0.100	2000.0	0.00075	211.10	0.221	4.4263				
04292021m019.d	1.629	28444V5.0R3	DA-FL136	Sample	P1-A3	15.0	0.100	2000.0	0.00075	206.96	0.217	4.3409	4.38	88%	88%	0%
04292021m020.d	1.622	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0				194.74						
04292021m021.d	1.622	28444V0.1R1	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	89.65	0.0960	0.0960				
04292021m022.d	1.622	28444V0.1R1	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	91.33	0.0977	0.0977	0.0968	97%		
04292021m023.d	1.629	718-2M56 0.10 pg/µL		Calibration	Vial 3	15.0				92.86						
04292021m024.d	1.622	28444V0.1R2	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	73.98	0.0798	0.0798				
04292021m025.d	1.629	28444V0.1R2	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	69.56	0.0752	0.0752	0.0775	78%		
04292021m026.d	1.629	718-2M55 0.20 pg/µL		Calibration	Vial 2	15.0				180.42						
04292021m027.d	1.629	28444V0.1R3	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	67.14	0.0727	0.0727				
04292021m028.d	1.629	28444V0.1R3	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	72.00	0.0778	0.0778	0.0752	75%	83%	12%
04292021m029.d	1.636	718-2M56 0.10 pg/µL		Calibration	Vial 3	15.0				84.76						

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	Ave % Rec	Std Dev
04292021m030.d	1.615	28444V0.01R1	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	47.54	0.0525	0.0105				
04292021m031.d	1.615	28444V0.01R1	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	45.75	0.0507	0.0101	0.0103	103%		
04292021m032.d	1.629	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				47.62						
04292021m033.d	1.622	28444V0.01R2	DA-FL136	Sample	P1-A8	15.0	0.100	20.0	0.0750	44.22	0.0491	0.00982				
04292021m034.d	1.622	28444V0.01R2	DA-FL136	Sample	P1-A8	15.0	0.100	20.0	0.0750	49.05	0.0541	0.0108	0.0103	103%		
04292021m035.d	1.629	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				46.26						
04292021m036.d	1.615	28444V0.01R3	DA-FL136	Sample	P1-A9	15.0	0.100	20.0	0.0750	41.22	0.0460	0.00920				
04292021m037.d	1.615	28444V0.01R3	DA-FL136	Sample	P1-A9	15.0	0.100	20.0	0.0750	44.10	0.0490	0.00979	0.00949	95%		
04292021m038.d	1.629	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				42.48						
04292021m039.d	1.615	28444V0.01R4	DA-FL136	Sample	P1-B1	15.0	0.100	20.0	0.0750	39.91	0.0446	0.00893				
04292021m040.d	1.615	28444V0.01R4	DA-FL136	Sample	P1-B1	15.0	0.100	20.0	0.0750	41.83	0.0466	0.00932	0.00912	91%		
04292021m041.d	1.636	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				45.10						
04292021m042.d	1.622	28444V0.01R5	DA-FL136	Sample	P1-B2	15.0	0.100	20.0	0.0750	41.36	0.0461	0.00923				
04292021m043.d	1.615	28444V0.01R5	DA-FL136	Sample	P1-B2	15.0	0.100	20.0	0.0750	43.53	0.0484	0.00967	0.00945	94%		
04292021m044.d	1.636	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				42.78						
04292021m045.d	1.615	28444V0.01R6	DA-FL136	Sample	P1-B3	15.0	0.100	20.0	0.0750	43.53	0.0484	0.00967				
04292021m046.d	1.615	28444V0.01R6	DA-FL136	Sample	P1-B3	15.0	0.100	20.0	0.0750	42.65	0.0475	0.00949	0.00958	96%	97%	5%
04292021m047.d	1.636	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				45.62						
04292021m048.d	-----	28444	DA-FL136	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04292021m049.d	-----	28444	DA-FL136	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04292021m050.d	1.636	718-2M57 0.050 pg/µL		Calibration	Vial 4	15.0				43.63						
04292021m051.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04292021m052.d	-----	Reagent	Blank	Sample	P1-B5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04292021m053.d	1.636	718-2M58 0.0250 pg/µL		Calibration	Vial 5	15.0				23.98						

Calculated LOD response at 0.0225 pg/µL= 18.47
Calculated LOQ response at 0.050 pg/µL= 45.12
"-----" Denotes response below area threshold

4/29/2021

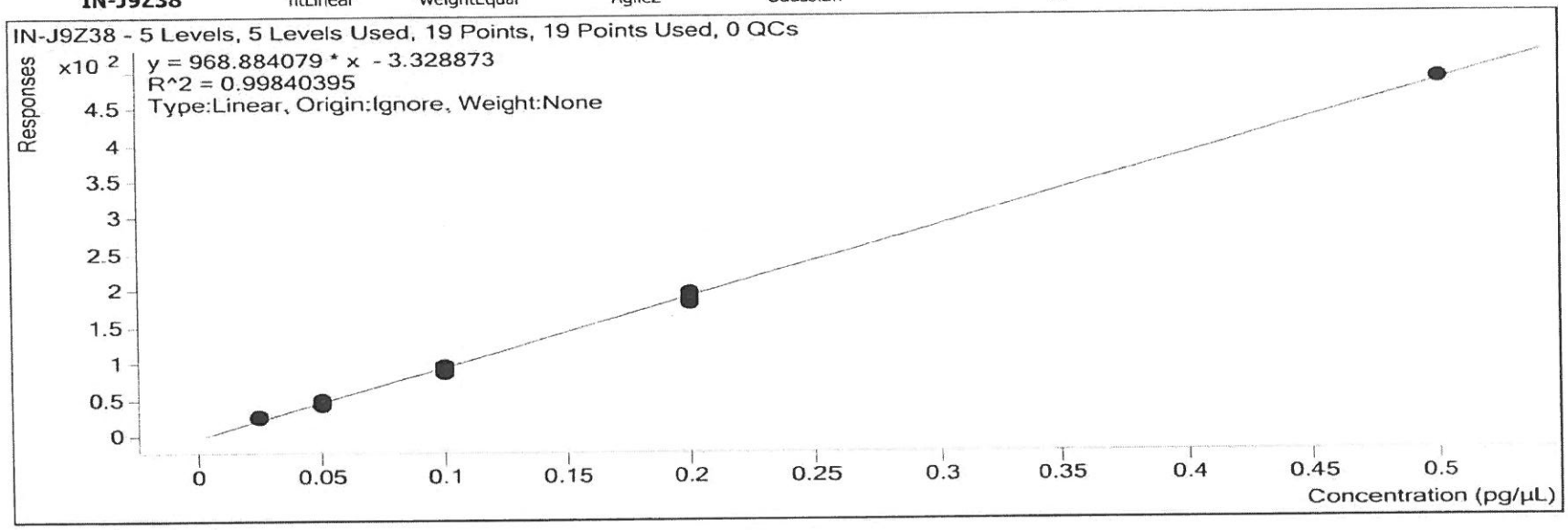
P. 2 of 2

4/29/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\QuantResults\04292021m.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	Gaussian	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m007.d	Calibration	1	☑	485	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m008.d	Calibration	2	☑	186	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m014.d	Calibration	2	☑	193	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m020.d	Calibration	2	☑	195	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m026.d	Calibration	2	☑	180	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m009.d	Calibration	3	☑	94	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m017.d	Calibration	3	☑	94	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m023.d	Calibration	3	☑	93	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m029.d	Calibration	3	☑	85	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m010.d	Calibration	4	☑	50	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m032.d	Calibration	4	☑	48	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m035.d	Calibration	4	☑	46	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m038.d	Calibration	4	☑	42	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m041.d	Calibration	4	☑	45	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m044.d	Calibration	4	☑	43	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m047.d	Calibration	4	☑	46	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m050.d	Calibration	4	☑	44	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m011.d	Calibration	5	☑	28	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04292021\04292021m053.d	Calibration	5	☑	24	0.0250

5/24/2021

Compound: **Cyantraniliprole** Injection Date: **5/21/2021**

LID#: 12401.20-CAR14, Dill (Oil) Method Validation, extracted 5/21/2021

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	Ave % Rec	Std Dev
05212021a001.d	4.652	Condition		Sample	P1-A1	15.0										
05212021a002.d	4.662	Condition		Sample	P1-A2	15.0										
05212021a003.d	4.669	Condition		Sample	P1-A3	15.0										
05212021a004.d	4.672	Condition		Sample	P1-A1	15.0										
05212021a005.d	4.672	Condition		Sample	P1-A2	15.0										
05212021a006.d	4.676	Condition		Sample	P1-A3	15.0										
05212021a007.d	4.679	Condition		Sample	P1-A1	15.0										
05212021a008.d	4.679	Condition		Sample	P1-A2	15.0										
05212021a009.d	4.683	Condition		Sample	P1-A3	15.0										
05212021a010.d	4.683	Condition		Sample	Vial 1	15.0										
05212021a011.d	4.686	718-2M69 0.50 pg/µL		Calibration	Vial 1	15.0				927.35						
05212021a012.d	4.686	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				309.35						
05212021a013.d	4.686	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				175.54						
05212021a014.d	4.683	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				93.57						
05212021a015.d	4.686	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				44.47						
05212021a016.d	4.683	28410V5.0R1	OA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	386.95	0.220	4.4098				
05212021a017.d	4.683	28410V5.0R1	OA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	371.56	0.212	4.2394	4.32	86%		
05212021a018.d	4.686	28410V5.0R2	OA-WA*370	Sample	P1-A2	15.0	0.100	2000.0	0.00075	423.26	0.241	4.8119				
05212021a019.d	4.683	28410V5.0R2	OA-WA*370	Sample	P1-A2	15.0	0.100	2000.0	0.00075	418.65	0.238	4.7608	4.79	96%		
05212021a020.d	4.683	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				281.82						
05212021a021.d	4.686	28410V5.0R3	OA-WA*370	Sample	P1-A3	15.0	0.100	2000.0	0.00075	401.92	0.229	4.5756				
05212021a022.d	4.683	28410V5.0R3	OA-WA*370	Sample	P1-A3	15.0	0.100	2000.0	0.00075	387.84	0.221	4.4196	4.50	90%	91%	5%
05212021a023.d	4.683	28410V0.1R1	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	140.72	0.0841	0.0841				
05212021a024.d	4.683	28410V0.1R1	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	137.91	0.0826	0.0826	0.0834	83%		
05212021a025.d	4.683	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				177.64						
05212021a026.d	4.683	28410V0.1R2	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	156.00	0.0926	0.0926				
05212021a027.d	4.676	28410V0.1R2	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	156.16	0.0927	0.0927	0.0927	93%		
05212021a028.d	4.683	28410V0.1R3	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	187.06	0.110	0.1098				
05212021a029.d	4.683	28410V0.1R3	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	192.38	0.113	0.1128	0.111	111%	96%	14%
05212021a030.d	4.683	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				171.39						
05212021a031.d	4.669	28410V0.01R1	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	68.98	0.0444	0.00888				
05212021a032.d	4.672	28410V0.01R1	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	64.88	0.0422	0.00843	0.00866	87%		
05212021a033.d	4.669	28410V0.01R2	OA-WA*370	Sample	P1-A8	15.0	0.100	20.0	0.0750	80.87	0.0510	0.0102				
05212021a034.d	4.666	28410V0.01R2	OA-WA*370	Sample	P1-A8	15.0	0.100	20.0	0.0750	81.44	0.0513	0.0103	0.0102	102%		
05212021a035.d	4.683	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				91.09						
05212021a036.d	4.666	28410V0.01R3	OA-WA*370	Sample	P1-A9	15.0	0.100	20.0	0.0750	81.76	0.0515	0.0103				
05212021a037.d	4.669	28410V0.01R3	OA-WA*370	Sample	P1-A9	15.0	0.100	20.0	0.0750	78.77	0.0498	0.00997	0.0101	101%	97%	9%
05212021a038.d	-----	28410	OA-WA*370	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05212021a039.d	-----	28410	OA-WA*370	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05212021a040.d	4.683	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				87.50						
05212021a041.d	-----	Reagent	Blank	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05212021a042.d	-----	Reagent	Blank	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05212021a043.d	4.683	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				44.90						

Calculated LOD response at 0.0225 pg/µL= 29.38

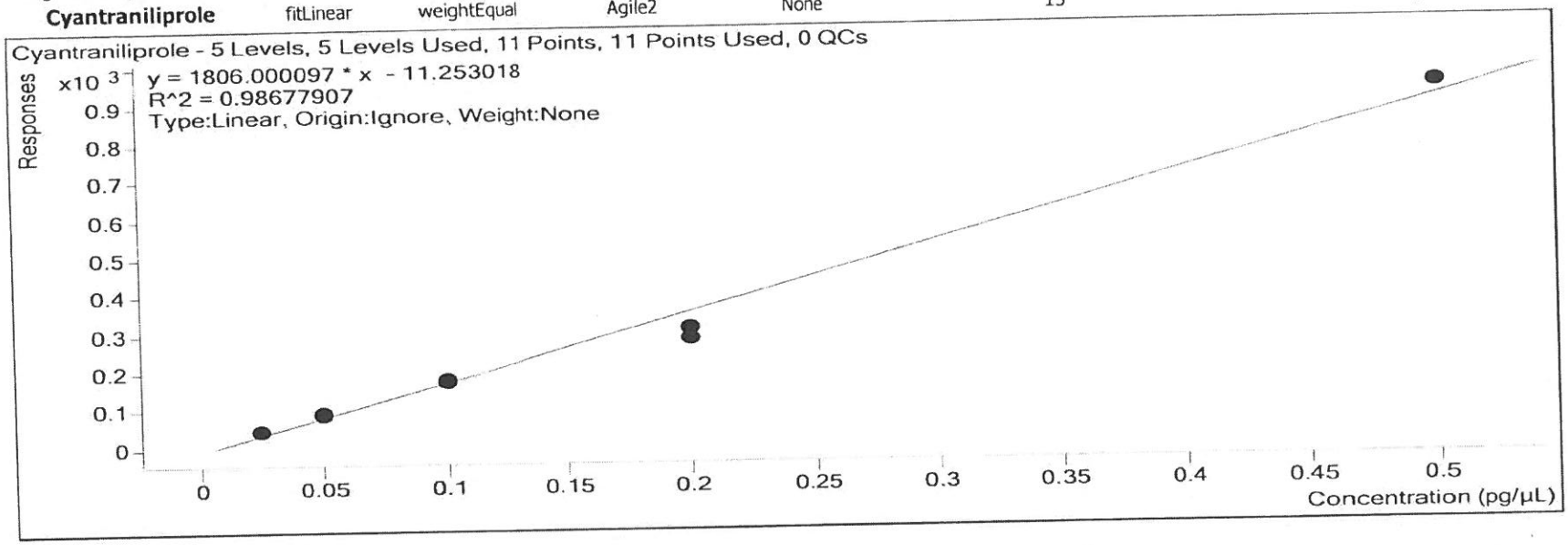
Calculated LOQ response at 0.050 pg/µL= 79.05

"-----" Denotes response below area threshold

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\QuantResults\05212021a.batch.bin 5/24/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a011.d	Calibration	1	☑	927	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a012.d	Calibration	2	☑	309	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a020.d	Calibration	2	☑	282	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a013.d	Calibration	3	☑	176	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a025.d	Calibration	3	☑	178	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a030.d	Calibration	3	☑	171	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a014.d	Calibration	4	☑	94	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a035.d	Calibration	4	☑	91	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a040.d	Calibration	4	☑	87	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a015.d	Calibration	5	☑	44	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a043.d	Calibration	5	☑	45	0.0250

Reprinted
with corrections
Initials ~~
Date 6/2/2021

Compound: **IN-J9Z38** Injection Date: **5/21/2021**

LID#: 12401.20-CAR14, Dill (Oil) Method Validation, extracted 5/21/2021

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	Ave % Rec	Std Dev
05212021a001.d	6.203	Condition		Sample	P1-A1	15.0										
05212021a002.d	6.217	Condition		Sample	P1-A2	15.0										
05212021a003.d	6.224	Condition		Sample	P1-A3	15.0										
05212021a004.d	6.224	Condition		Sample	P1-A1	15.0										
05212021a005.d	6.230	Condition		Sample	P1-A2	15.0										
05212021a006.d	6.230	Condition		Sample	P1-A3	15.0										
05212021a007.d	6.230	Condition		Sample	P1-A1	15.0										
05212021a008.d	6.230	Condition		Sample	P1-A2	15.0										
05212021a009.d	6.230	Condition		Sample	P1-A3	15.0										
05212021a010.d	6.237	Condition		Sample	Vial 1	15.0										
05212021a011.d	6.237	718-2M69 0.50 pg/µL		Calibration	Vial 1	15.0				481.05						
05212021a012.d	6.237	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				204.09						
05212021a013.d	6.237	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				99.29						
05212021a014.d	6.237	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				53.09						
05212021a015.d	6.237	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				24.85						
05212021a016.d	6.237	28410V5.0R1	OA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	233.96	0.238	4.7599				
05212021a017.d	6.237	28410V5.0R1	OA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	245.12	0.250	4.9900	4.87	97%		
05212021a018.d	6.237	28410V5.0R2	OA-WA*370	Sample	P1-A2	15.0	0.100	2000.0	0.00075	228.79	0.233	4.6535				
05212021a019.d	6.237	28410V5.0R2	OA-WA*370	Sample	P1-A2	15.0	0.100	2000.0	0.00075	228.90	0.233	4.6557	4.65	93%		
05212021a020.d	6.237	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				212.85						
05212021a021.d	6.237	28410V5.0R3	OA-WA*370	Sample	P1-A3	15.0	0.100	2000.0	0.00075	246.81	0.251	5.0246				
05212021a022.d	6.237	28410V5.0R3	OA-WA*370	Sample	P1-A3	15.0	0.100	2000.0	0.00075	247.29	0.252	5.0346	5.03	101%	97%	4%
05212021a023.d	6.237	28410V0.1R1	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	93.14	0.0929	0.0929				
05212021a024.d	6.237	28410V0.1R1	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	91.07	0.0908	0.0908	0.0919	92%		
05212021a025.d	6.237	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				93.80						
05212021a026.d	6.237	28410V0.1R2	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	84.88	0.0844	0.0844				
05212021a027.d	6.230	28410V0.1R2	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	88.68	0.0883	0.0883	0.0864	86%		
05212021a028.d	6.237	28410V0.1R3	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	79.90	0.0793	0.0793				
05212021a029.d	6.237	28410V0.1R3	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	82.70	0.0822	0.0822	0.0807	81%	86%	6%
05212021a030.d	6.237	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				101.23						
05212021a031.d	6.237	28410V0.01R1	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	~~29.08~~	~~0.0269~~	~~0.00539~~				
05212021a032.d	6.237	28410V0.01R1	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	~~30.22~~	~~0.0281~~	0.00562	0.00551	~~55%~~		
05212021a033.d	6.237	28410V0.01R2	OA-WA*370	Sample	P1-A8	15.0	0.100	20.0	0.0750	~~25.89~~	~~0.0237~~	~~0.00473~~				
05212021a034.d	6.230	28410V0.01R2	OA-WA*370	Sample	P1-A8	15.0	0.100	20.0	0.0750	~~27.91~~	~~0.0257~~	~~0.00515~~	0.00494	~~49%~~		
05212021a035.d	6.237	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				46.57						
05212021a036.d	6.237	28410V0.01R3	OA-WA*370	Sample	P1-A9	15.0	0.100	20.0	0.0750	~~25.60~~	~~0.0234~~	~~0.00467~~				
05212021a037.d	6.237	28410V0.01R3	OA-WA*370	Sample	P1-A9	15.0	0.100	20.0	0.0750	~~25.32~~	~~0.0231~~	~~0.00461~~	0.00464	~~46%~~	50%	4%
05212021a038.d	-----	28410	OA-WA*370	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05212021a039.d	-----	28410	OA-WA*370	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05212021a040.d	6.237	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				49.82						
05212021a041.d	-----	Reagent	Blank	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05212021a042.d	-----	Reagent	Blank	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05212021a043.d	6.237	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				24.58						

Calculated LOD response at 0.0225 pg/µL= 24.77

Calculated LOQ response at 0.050 pg/µL= 51.46

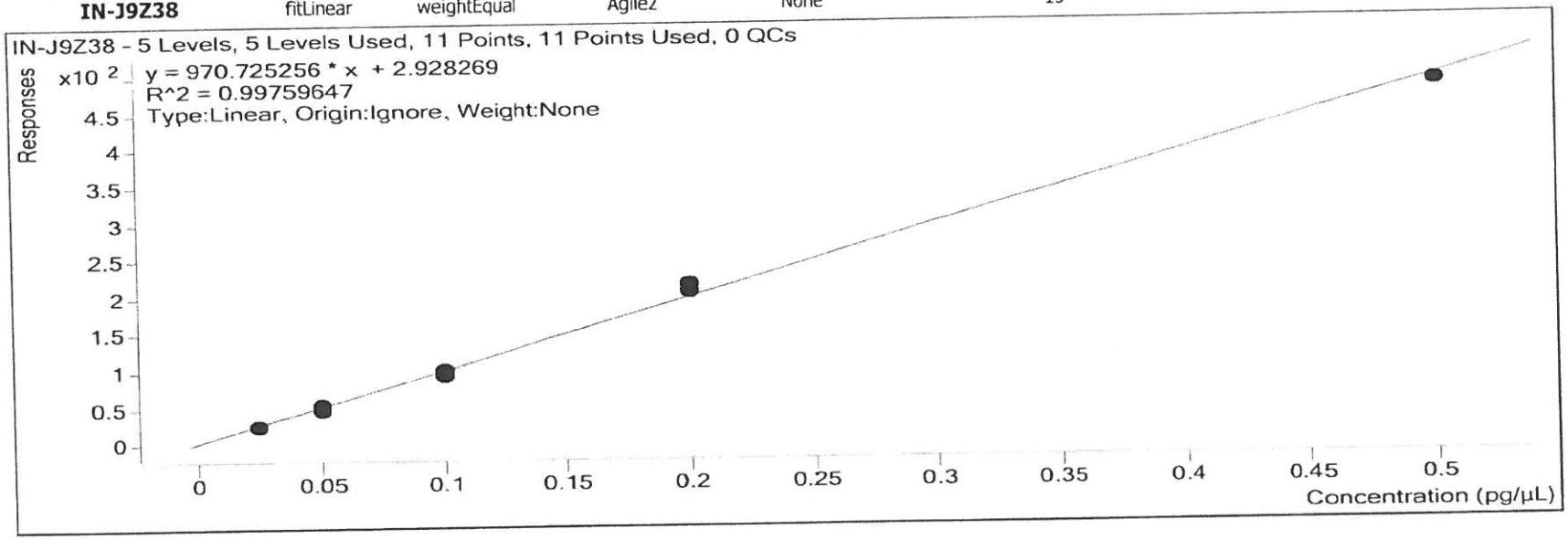
"-----" Denotes response below area threshold

Recoveries in **BOLD** were <70%, will notify Study Director

Struckthrough data not reported, samples were diluted further and re-run.

5/24/2021

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a011.d	Calibration	1	☑	481	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a012.d	Calibration	2	☑	204	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a020.d	Calibration	2	☑	213	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a013.d	Calibration	3	☑	99	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a025.d	Calibration	3	☑	94	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a030.d	Calibration	3	☑	101	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a014.d	Calibration	4	☑	53	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a035.d	Calibration	4	☑	47	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a040.d	Calibration	4	☑	50	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a015.d	Calibration	5	☑	25	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05212021\05212021a043.d	Calibration	5	☑	25	0.0250

Compound **IN-J9Z38** Injection Date **5/27/2021**

5/27/2021

LID#: 12401.20-CAR14, Dill (Oil) Method Validation (0.01 ppm for IN-J9Z38), extracted 5/21/2021

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	Ave % Rec	Std Dev
05272021a001.d	6.237	Condition		Sample	P1-A1	15.0										
05272021a002.d	6.224	Condition		Sample	P1-A2	15.0										
05272021a003.d	6.224	Condition		Sample	P1-A3	15.0										
05272021a004.d	6.230	Condition		Sample	P1-A1	15.0										
05272021a005.d	6.230	Condition		Sample	P1-A2	15.0										
05272021a006.d	6.230	Condition		Sample	P1-A3	15.0										
05272021a007.d	6.237	718-2M74 0.50 pg/µL		Calibration	Vial 1	15.0				485.15						
05272021a008.d	6.237	718-2M75 0.20 pg/µL		Calibration	Vial 2	15.0				194.87						
05272021a009.d	6.237	718-2M76 0.10 pg/µL		Calibration	Vial 3	15.0				94.11						
05272021a010.d	6.237	718-2M77 0.050 pg/µL		Calibration	Vial 4	15.0				56.13						
05272021a011.d	6.237	718-2M78 0.0250 pg/µL		Calibration	Vial 5	15.0				25.44						
05272021a012.d	6.244	718-2M79 0.010 pg/µL		Calibration	P1-C1	15.0				10.80						
05272021a013.d	6.237	28410V0.01R1	OA-WA*370	Sample	P1-A1	15.0	0.100	40.0	0.0375	17.56	0.0163	0.00651				
05272021a014.d	6.237	28410V0.01R1	OA-WA*370	Sample	P1-A1	15.0	0.100	40.0	0.0375	20.74	0.0196	0.00783	0.00717	72%		
05272021a015.d	6.237	28410V0.01R2	OA-WA*370	Sample	P1-A2	15.0	0.100	40.0	0.0375	15.77	0.0144	0.00577				
05272021a016.d	6.237	28410V0.01R2	OA-WA*370	Sample	P1-A2	15.0	0.100	40.0	0.0375	18.80	0.0176	0.00702	0.00639	**64%**		
05272021a017.d	6.244	718-2M78 0.0250 pg/µL		Calibration	Vial 5	15.0				24.67						
05272021a018.d	6.237	28410V0.01R3	OA-WA*370	Sample	P1-A3	15.0	0.100	40.0	0.0375	17.31	0.0160	0.00640				
05272021a019.d	6.244	28410V0.01R3	OA-WA*370	Sample	P1-A3	15.0	0.100	40.0	0.0375	16.75	0.0154	0.00617	0.00629	**63%**	66%	5%
05272021a020.d	-----	28410	OA-WA*370	Sample	P1-A4	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010				
05272021a021.d	-----	28410	OA-WA*370	Sample	P1-A4	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010	<0.010			
05272021a022.d	6.237	718-2M79 0.010 pg/µL		Calibration	P1-C1	15.0				12.14						

Calculated LOD response at 0.009 pg/µL= 10.54

Calculated LOQ response at 0.0250 pg/µL= 25.99

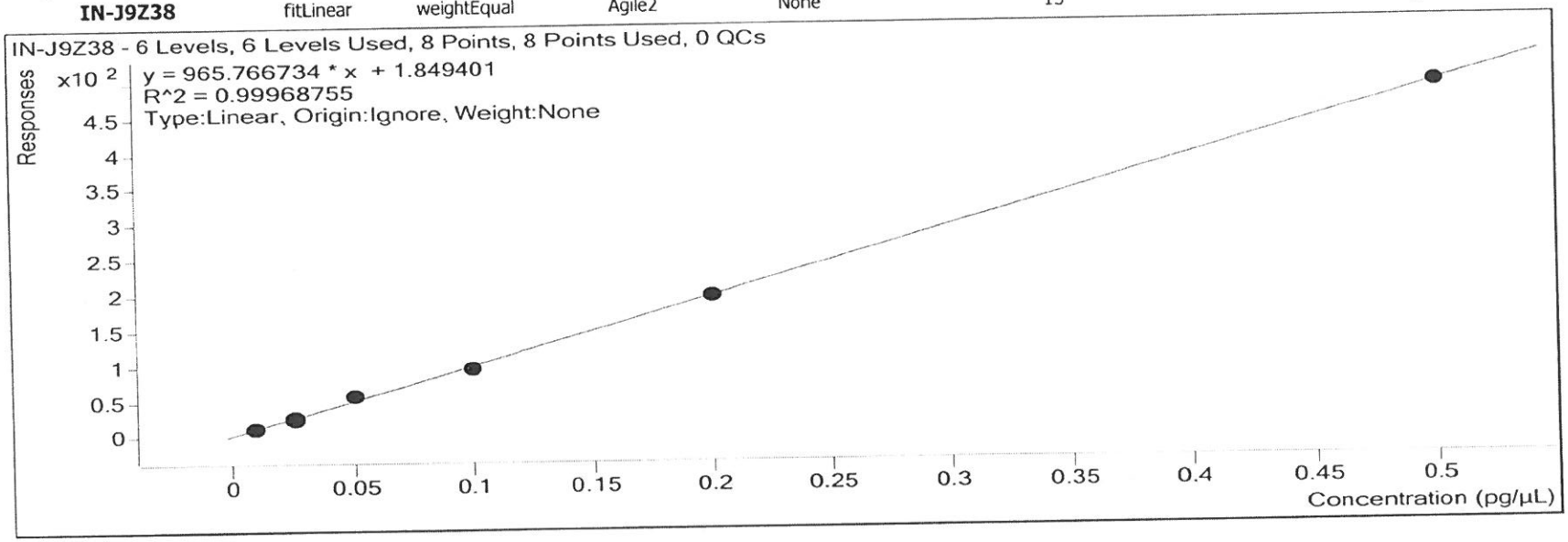
"-----" Denotes response below area threshold

Recoveries in **BOLD** were <70%, will notify Study Director

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\QuantResults\05272021a.batch.bin 5/27/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\05272021a007.d	Calibration	1	☑	485	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\05272021a008.d	Calibration	2	☑	195	0.2000
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D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\05272021a011.d	Calibration	5	☑	25	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\05272021a017.d	Calibration	5	☑	25	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\05272021a012.d	Calibration	6	☑	11	0.0100
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05272021\05272021a022.d	Calibration	6	☑	12	0.0100

Compound: **Cyantraniliprole**
Injection Date: **3/25/2021**
LID#: 12401.20-CAR14, Dill (Fresh) ID167 (Decline) & CA96, extracted 3/25/2021

Reprinted with corrections
Initials MM
Date 7/27/2021

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	Ave % Rec	Std Dev
03252021a001.d	4.686	Condition		Sample	P1-A1	15.0										
03252021a002.d	4.693	Condition		Sample	P1-A1	15.0										
03252021a003.d	4.689	Condition		Sample	P1-A1	15.0										
03252021a004.d	4.689	Condition		Sample	P1-A1	15.0										
03252021a005.d	4.689	Condition		Sample	P1-A1	15.0										
03252021a006.d	4.693	Condition		Sample	P1-A1	15.0										
03252021a007.d	4.689	Condition		Sample	P1-A1	15.0										
03252021a008.d	4.689	Condition		Sample	P1-A1	15.0										
03252021a009.d	4.689	Condition		Sample	P1-A1	15.0										
03252021a010.d	4.689	718-2M25 0.50 pg/µL		Calibration	Vial 1	15.0				933.60						
03252021a011.d	4.689	718-2M26 0.20 pg/µL		Calibration	Vial 2	15.0				338.08						
03252021a012.d	4.689	718-2M27 0.10 pg/µL		Calibration	Vial 3	15.0				180.67						
03252021a013.d	4.689	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				93.47						
03252021a014.d	4.683	718-2M29 0.0250 pg/µL		Calibration	Vial 5	15.0				39.70						
03252021a015.d	4.689	28464C5.0R1	FA-ID167	Sample	P1-A1	15.0	0.100	2000.0	0.00075	417.87	0.236	4.7169				
03252021a016.d	4.689	28464C5.0R1	FA-ID167	Sample	P1-A1	15.0	0.100	2000.0	0.00075	414.94	0.234	4.6851	4.70	94%		
03252021a017.d	4.689	28464C0.1R1	FA-ID167	Sample	P1-A2	15.0	0.100	100.0	0.0150	131.56	0.0806	0.0806				
03252021a018.d	4.689	28464C0.1R1	FA-ID167	Sample	P1-A2	15.0	0.100	100.0	0.0150	132.41	0.0811	0.0811	0.0809	81%		
03252021a019.d	4.693	718-2M26 0.20 pg/µL		Calibration	Vial 2	15.0				318.47						
03252021a020.d	-----	28464	FA-ID167	Sample	P1-A3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
03252021a021.d	-----	28464	FA-ID167	Sample	P1-A3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
03252021a022.d	4.686	28466	FE-ID167	Sample	P1-A4	15.0	0.100	10000.0	0.00015	114.87	0.0716	7.1600				
03252021a023.d	4.689	28466	FE-ID167	Sample	P1-A4	15.0	0.100	10000.0	0.00015	117.28	0.0729	7.2907	7.2			
03252021a024.d	4.686	718-2M27 0.10 pg/µL		Calibration	Vial 3	15.0				171.16						
03252021a025.d	4.689	28467	FF-ID167	Sample	P1-A5	15.0	0.100	10000.0	0.00015	125.57	0.0774	7.7402				
03252021a026.d	4.686	28467	FF-ID167	Sample	P1-A5	15.0	0.100	10000.0	0.00015	128.29	0.0789	7.8873	7.8			
03252021a027.d	4.686	28468	FC-ID167	Sample	P1-A6	15.0	0.100	10000.0	0.00015	102.46	0.0649	6.4875				
03252021a028.d	4.686	28468	FC-ID167	Sample	P1-A6	15.0	0.100	10000.0	0.00015	98.78	0.0629	6.2878	6.4			
03252021a029.d	4.683	718-2M28 0.050 pg/µL		Calibration	Vial 4	15.0				89.97						
03252021a030.d	4.683	28469	FD-ID167	Sample	P1-A7	15.0	0.100	10000.0	0.00015	101.78	0.0645	6.4504				
03252021a031.d	4.689	28469	FD-ID167	Sample	P1-A7	15.0	0.100	10000.0	0.00015	97.22	0.0620	6.2031	6.3			
03252021a032.d	4.683	28470	FG-ID167	Sample	P1-A8	15.0	0.100	400.0	0.00375	230.18	0.134	0.5364				
03252021a033.d	4.683	28470	FG-ID167	Sample	P1-A8	15.0	0.100	400.0	0.00375	220.20	0.129	0.5148	0.53			
03252021a034.d	4.689	718-2M27 0.10 pg/µL		Calibration	Vial 3	15.0				159.09						
03252021a035.d	4.686	28471	FH-ID167	Sample	P1-A9	15.0	0.100	400.0	0.00375	163.89	0.0982	0.3927				
03252021a036.d	4.686	28471	FH-ID167	Sample	P1-A9	15.0	0.100	400.0	0.00375	160.49	0.0963	0.3853	0.39			
03252021a037.d	4.683	28472	FI-ID167	Sample	P1-B1	15.0	0.100	200.0	0.0075	294.20	0.169	0.3376				
03252021a038.d	4.683	28472	FI-ID167	Sample	P1-B1	15.0	0.100	200.0	0.0075	292.98	0.168	0.3363	0.34			
03252021a039.d	4.689	718-2M26 0.20 pg/µL		Calibration	Vial 2	15.0				315.62						

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	Ave % Rec	Std Dev
03252021a040.d	4.686	28473	FJ-ID167	Sample	P1-B2	15.0	0.100	200.0	0.0075	182.04	0.108	0.2160				
03252021a041.d	4.686	28473	FJ-ID167	Sample	P1-B2	15.0	0.100	200.0	0.0075	178.47	0.106	0.2122	0.21			
03252021a042.d	4.689	28454	FC-CA96	Sample	P1-B3	15.0	0.100	10000.0	0.00015	217.90	0.127	12.7446				
03252021a043.d	4.683	28454	FC-CA96	Sample	P1-B3	15.0	0.100	10000.0	0.00015	209.76	0.123	12.3036	13			
03252021a044.d	4.689	718-2M27 0.10 pg/µL		Calibration	Vial 3	15.0				160.98						
03252021a045.d	4.683	28455	FD-CA96	Sample	P1-B4	15.0	0.100	10000.0	0.00015	121.39	0.0751	7.5136				
03252021a046.d	4.683	28455	FD-CA96	Sample	P1-B4	15.0	0.100	10000.0	0.00015	120.96	0.0749	7.4902	7.5			
03252021a047.d	4.683	718-2M29 0.0250 pg/µL		Calibration	Vial 5	15.0				36.53						

Calculated LOD response at 0.0225 pg/µL= 24.29
Calculated LOQ response at 0.050 pg/µL= 75.02
"----" Denotes response below area threshold

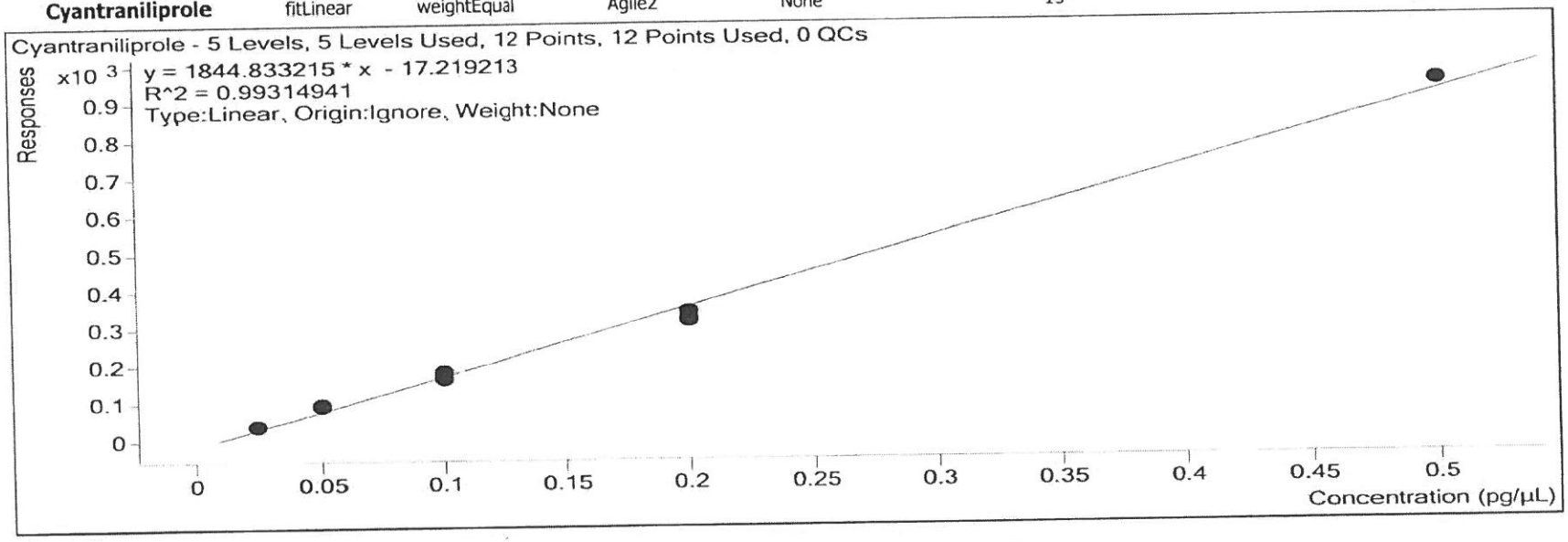
3/26/2021

P. 2 OF 2

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\QuantResults\03252021a.batch.bin 3/26/2021 kml

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a010.d	Calibration	1	☑	934	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a011.d	Calibration	2	☑	338	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a019.d	Calibration	2	☑	318	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a039.d	Calibration	2	☑	316	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a012.d	Calibration	3	☑	181	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a024.d	Calibration	3	☑	171	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a034.d	Calibration	3	☑	159	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a044.d	Calibration	3	☑	161	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a013.d	Calibration	4	☑	93	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a029.d	Calibration	4	☑	90	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a014.d	Calibration	5	☑	40	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03252021\03252021a047.d	Calibration	5	☑	37	0.0250

Compound
Cyantraniliprole

Injection Date
3/30/2021

LID#: 12401.20-CAR14, Dill (Fresh) FL136, WA*370 & WI388, extracted 3/30/2021

3/31/2021

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	Ave % Rec	Std Dev
03302021a001.d	4.669	Condition		Sample	P1-A1	15.0										
03302021a002.d	4.672	Condition		Sample	P1-A2	15.0										
03302021a003.d	4.676	Condition		Sample	P1-A3	15.0										
03302021a004.d	4.676	Condition		Sample	P1-A1	15.0										
03302021a005.d	4.676	Condition		Sample	P1-A2	15.0										
03302021a006.d	4.676	Condition		Sample	P1-A3	15.0										
03302021a007.d	4.679	Condition		Sample	P1-A1	15.0										
03302021a008.d	4.679	Condition		Sample	P1-A2	15.0										
03302021a009.d	4.683	Condition		Sample	P1-A3	15.0										
03302021a010.d	4.679	718-2M34 0.50 pg/µL		Calibration	Vial 1	15.0				855.02						
03302021a011.d	4.679	718-2M35 0.20 pg/µL		Calibration	Vial 2	15.0				322.25						
03302021a012.d	4.683	718-2M36 0.10 pg/µL		Calibration	Vial 3	15.0				151.68						
03302021a013.d	4.686	718-2M37 0.050 pg/µL		Calibration	Vial 4	15.0				74.60						
03302021a014.d	4.686	718-2M38 0.0250 pg/µL		Calibration	Vial 5	15.0				42.82						
03302021a015.d	4.686	28440C25R1	FA-FL136	Sample	P1-A1	15.0	0.100	10000.0	0.00015	381.86	0.230	22.9644				
03302021a016.d	4.686	28440C25R1	FA-FL136	Sample	P1-A1	15.0	0.100	10000.0	0.00015	383.04	0.230	23.0332	23.0	92%		
03302021a017.d	4.686	28440C25R2	FA-FL136	Sample	P1-A2	15.0	0.100	10000.0	0.00015	414.28	0.249	24.8506				
03302021a018.d	4.686	28440C25R2	FA-FL136	Sample	P1-A2	15.0	0.100	10000.0	0.00015	417.55	0.250	25.0409	24.9	100%		
03302021a019.d	4.679	718-2M35 0.20 pg/µL		Calibration	Vial 2	15.0				329.51						
03302021a020.d	4.686	28440C25R3	FA-FL136	Sample	P1-A3	15.0	0.100	10000.0	0.00015	395.32	0.237	23.7478				
03302021a021.d	4.686	28440C25R3	FA-FL136	Sample	P1-A3	15.0	0.100	10000.0	0.00015	386.66	0.232	23.2438	23.5	94%	95%	4%
03302021a022.d	4.686	28442	FC-FL136	Sample	P1-A4	15.0	0.100	1000.0	0.0015	243.83	0.149	1.4934				
03302021a023.d	4.686	28442	FC-FL136	Sample	P1-A4	15.0	0.100	1000.0	0.0015	247.62	0.152	1.5155	1.5			
03302021a024.d	4.683	718-2M36 0.10 pg/µL		Calibration	Vial 3	15.0				137.18						
03302021a025.d	4.686	28443	FD-FL136	Sample	P1-A5	15.0	0.100	1000.0	0.0015	199.12	0.123	1.2333				
03302021a026.d	4.683	28443	FD-FL136	Sample	P1-A5	15.0	0.100	1000.0	0.0015	203.30	0.126	1.2577	1.2			
03302021a027.d	4.683	28398	FC-WA*370	Sample	P1-A6	15.0	0.100	2000.0	0.00075	177.30	0.111	2.2128				
03302021a028.d	4.683	28398	FC-WA*370	Sample	P1-A6	15.0	0.100	2000.0	0.00075	181.61	0.113	2.2629	2.2			
03302021a029.d	4.683	718-2M37 0.050 pg/µL		Calibration	Vial 4	15.0				73.66						
03302021a030.d	4.686	28399	FD-WA*370	Sample	P1-A7	15.0	0.100	2000.0	0.00075	182.39	0.114	2.2720				
03302021a031.d	4.686	28399	FD-WA*370	Sample	P1-A7	15.0	0.100	2000.0	0.00075	180.78	0.113	2.2532	2.3			
03302021a032.d	4.686	28426	FC-WI388	Sample	P1-A8	15.0	0.100	4000.0	0.000375	190.45	0.118	4.7316				
03302021a033.d	4.683	28426	FC-WI388	Sample	P1-A8	15.0	0.100	4000.0	0.000375	186.50	0.116	4.6398	4.7			
03302021a034.d	4.686	718-2M36 0.10 pg/µL		Calibration	Vial 3	15.0				154.78						
03302021a035.d	4.683	28427	FD-WI388	Sample	P1-A9	15.0	0.100	4000.0	0.000375	105.75	0.0690	2.7606				
03302021a036.d	4.686	28427	FD-WI388	Sample	P1-A9	15.0	0.100	4000.0	0.000375	103.84	0.0679	2.7160	2.7			
03302021a037.d	-----	28440	FA-FL136	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
03302021a038.d	-----	28440	FA-FL136	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
03302021a039.d	4.686	718-2M37 0.050 pg/µL		Calibration	Vial 4	15.0				81.01						
03302021a040.d	-----	28396	FA-WA*370	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
03302021a041.d	-----	28396	FA-WA*370	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
03302021a042.d	-----	28424	FA-WI388	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
03302021a043.d	-----	28424	FA-WI388	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
03302021a044.d	4.683	718-2M38 0.0250 pg/µL		Calibration	Vial 5	15.0				42.30						

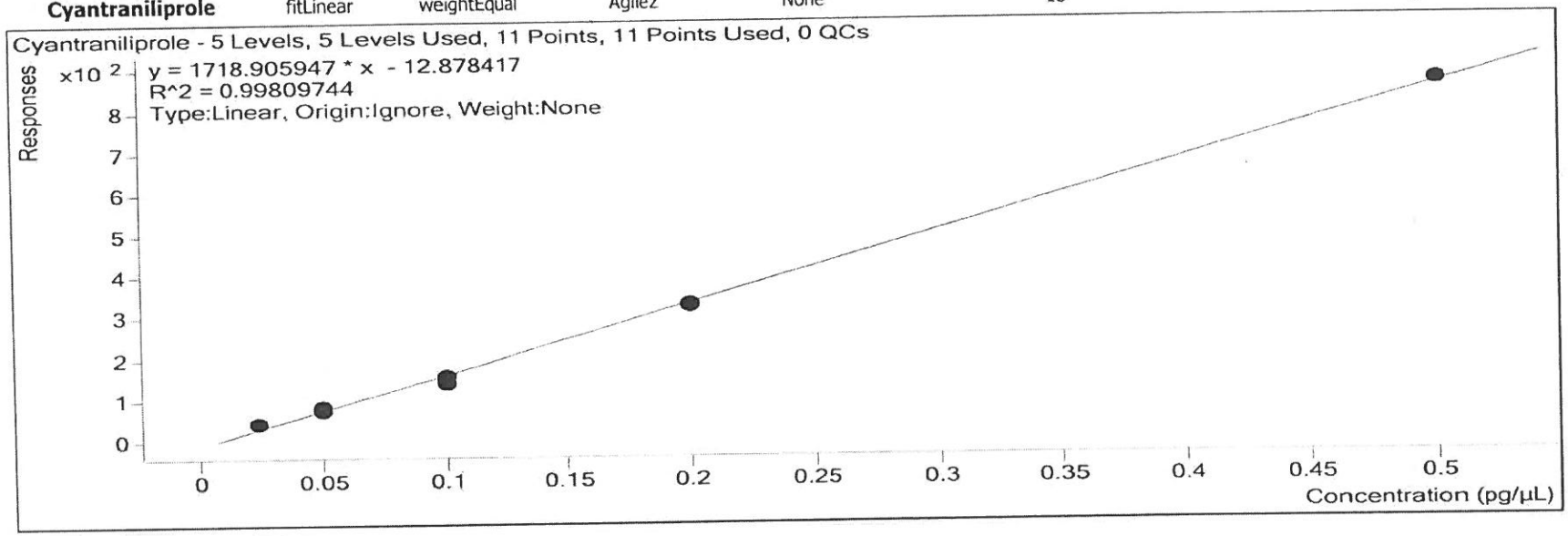
Calculated LOD response at 0.0225 pg/µL= 25.80
Calculated LOQ response at 0.050 pg/µL= 73.07
"-----" Denotes response below area threshold

3/31/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\QuantResults\03302021a.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a010.d	Calibration	1	☑	855	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a011.d	Calibration	2	☑	322	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a019.d	Calibration	2	☑	330	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a012.d	Calibration	3	☑	152	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a024.d	Calibration	3	☑	137	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a034.d	Calibration	3	☑	155	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a013.d	Calibration	4	☑	75	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a029.d	Calibration	4	☑	74	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a039.d	Calibration	4	☑	81	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a014.d	Calibration	5	☑	43	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\03302021\03302021a044.d	Calibration	5	☑	42	0.0250

Compound
Cyantraniliprole

Injection Date
4/2/2021

4/3/2021

LID#: 12401.20-CAR14, Dill (Fresh) NJ249, extracted 4/2/2021

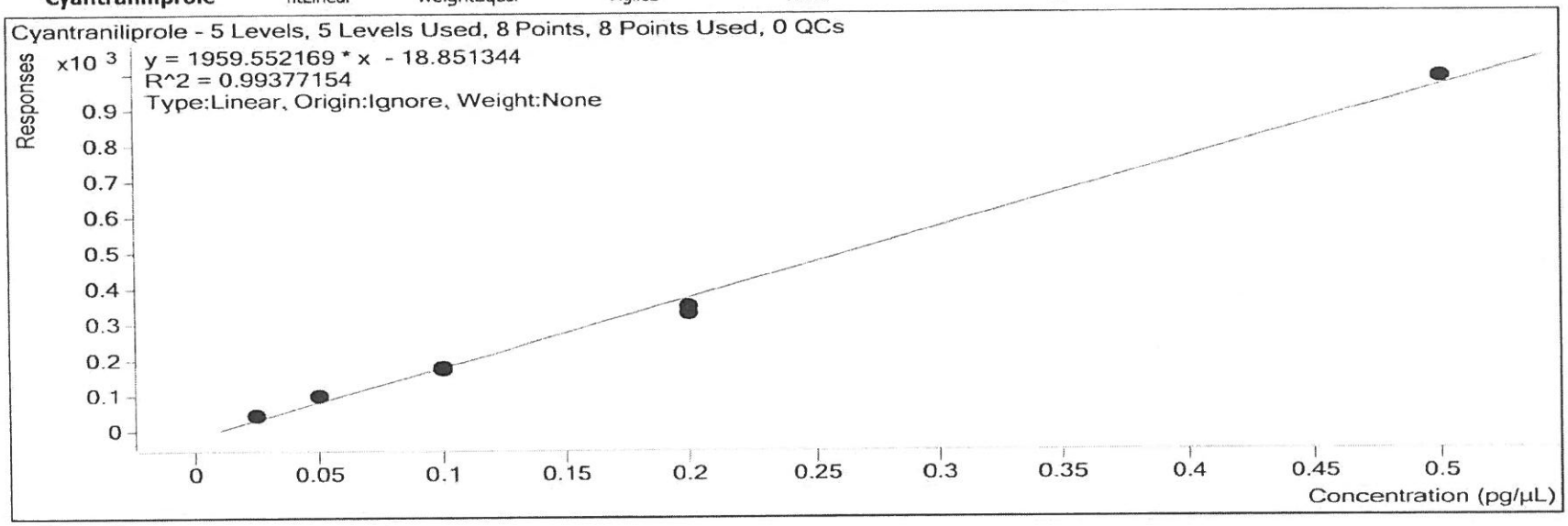
Data File	RT	SampleName	Sample Info	Sample Type	Vial Pos	Inj Vol (µL)	g	mL Vol	mg Inj	Resp	Conc (pg/µL)	ppm	Ave ppm	% Rec	Ave % Rec	Std Dev
04022021a001.d	4.659	Condition		Sample	P1-A1	15.0										
04022021a002.d	4.662	Condition		Sample	P1-A2	15.0										
04022021a003.d	4.669	Condition		Sample	P1-A1	15.0										
04022021a004.d	4.669	Condition		Sample	P1-A2	15.0										
04022021a005.d	4.672	Condition		Sample	P1-A1	15.0										
04022021a006.d	4.676	Condition		Sample	P1-A2	15.0										
04022021a007.d	4.669	Condition		Sample	P1-A1	15.0										
04022021a008.d	4.672	Condition		Sample	P1-A2	15.0										
04022021a009.d	4.672	Condition		Sample	P1-A1	15.0										
04022021a010.d	4.679	718-2M34 0.50 pg/µL		Calibration	Vial 1	15.0				986.11						
04022021a011.d	4.669	718-2M35 0.20 pg/µL		Calibration	Vial 2	15.0				349.20						
04022021a012.d	4.676	718-2M36 0.10 pg/µL		Calibration	Vial 3	15.0				180.03						
04022021a013.d	4.669	718-2M37 0.050 pg/µL		Calibration	Vial 4	15.0				99.34						
04022021a014.d	4.672	718-2M38 0.0250 pg/µL		Calibration	Vial 5	15.0				45.15						
04022021a015.d	4.672	28412C5.0R2	FA-NJ249	Sample	P1-A1	15.0	0.100	2000.0	0.00075	413.94	0.221	4.4173				
04022021a016.d	4.676	28412C5.0R2	FA-NJ249	Sample	P1-A1	15.0	0.100	2000.0	0.00075	400.69	0.214	4.2821	4.35	87%		
04022021a017.d	4.676	28412C5.0R3	FA-NJ249	Sample	P1-A2	15.0	0.100	2000.0	0.00075	445.12	0.237	4.7355				
04022021a018.d	4.669	28412C5.0R3	FA-NJ249	Sample	P1-A2	15.0	0.100	2000.0	0.00075	444.89	0.237	4.7331	4.73	95%	91%	
04022021a019.d	4.672	718-2M35 0.20 pg/µL		Calibration	Vial 2	15.0				326.45						
04022021a020.d	4.672	28414	FC-NJ249	Sample	P1-A3	15.0	0.100	10000.0	0.00015	124.94	0.0734	7.3382				
04022021a021.d	4.669	28414	FC-NJ249	Sample	P1-A3	15.0	0.100	10000.0	0.00015	122.34	0.0721	7.2055	7.3			
04022021a022.d	4.672	28415	FD-NJ249	Sample	P1-A4	15.0	0.100	10000.0	0.00015	155.70	0.0891	8.9079				
04022021a023.d	4.669	28415	FD-NJ249	Sample	P1-A4	15.0	0.100	10000.0	0.00015	150.46	0.0864	8.6405	8.8			
04022021a024.d	4.669	718-2M36 0.10 pg/µL		Calibration	Vial 3	15.0				172.37						
04022021a025.d	-----	28412	FA-NJ249	Sample	P1-A5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04022021a026.d	-----	28412	FA-NJ249	Sample	P1-A5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04022021a027.d	4.676	718-2M38 0.0250 pg/µL		Calibration	Vial 5	15.0				42.00						

Calculated LOD response at 0.0225 pg/µL= 25.24
Calculated LOQ response at 0.050 pg/µL= 79.13
"-----" Denotes response below area threshold

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\QuantResults\04022021a.batch.bin 4/3/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a010.d	Calibration	1	☑	986	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a011.d	Calibration	2	☑	349	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a019.d	Calibration	2	☑	326	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a012.d	Calibration	3	☑	180	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a024.d	Calibration	3	☑	172	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a013.d	Calibration	4	☑	99	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a014.d	Calibration	5	☑	45	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04022021\04022021a027.d	Calibration	5	☑	42	0.0250

Compound
Cyantraniliprole

Injection Date
4/16/2021

4/17/2021

LID#: 12401.20-CAR14, Dill (Fresh) WA*370 & WI388 (Grab), extracted 4/16/2021

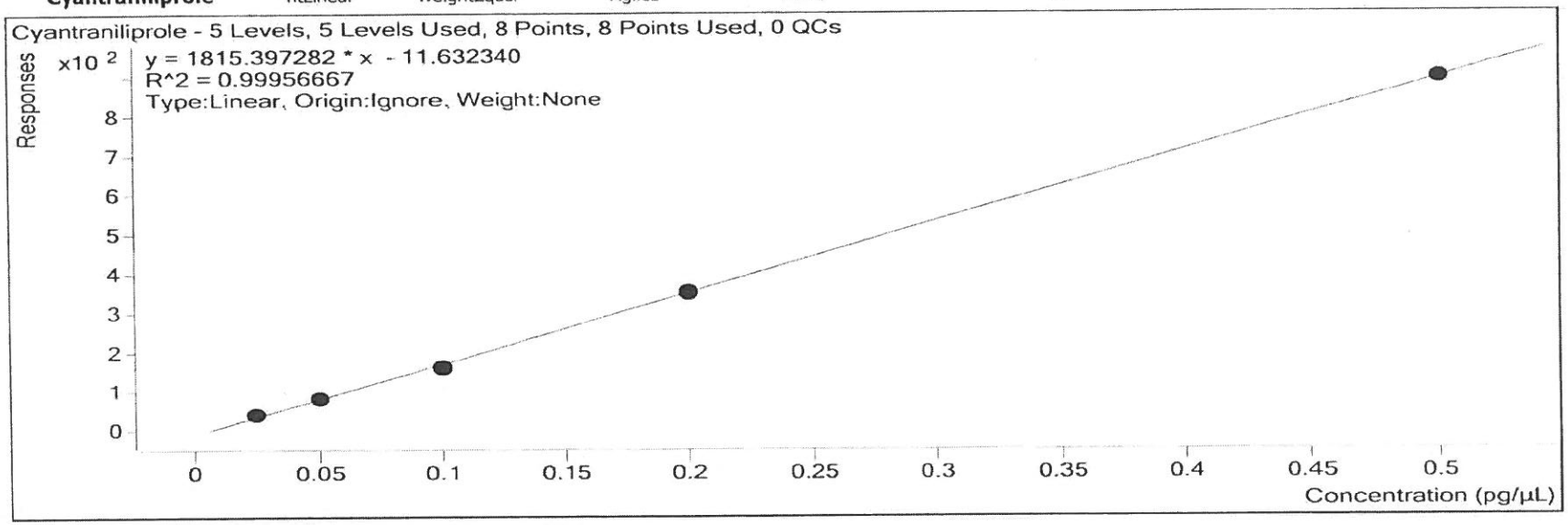
Data File	RT	SampleName	Sample Info	Sample Type	Vial Pos	Inj Vol (µL)	g	mL Vol	mg Inj	Resp	Conc (pg/µL)	ppm	Ave ppm	% Rec	Ave % Rec	Std Dev
04162021a001.d	4.672	Condition		Sample	P1-A1	15.0										
04162021a002.d	4.666	Condition		Sample	P1-A2	15.0										
04162021a003.d	4.669	Condition		Sample	P1-A1	15.0										
04162021a004.d	4.672	Condition		Sample	P1-A2	15.0										
04162021a005.d	4.679	Condition		Sample	P1-A1	15.0										
04162021a006.d	4.683	Condition		Sample	P1-A2	15.0										
04162021a007.d	4.683	Condition		Sample	P1-A1	15.0										
04162021a008.d	4.683	Condition		Sample	Vial 1	15.0										
04162021a009.d	4.683	Condition		Sample	Vial 1	15.0										
04162021a010.d	4.683	718-2M44 0.50 pg/µL		Calibration	Vial 1	15.0				898.15						
04162021a011.d	4.683	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				351.98						
04162021a012.d	4.679	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				160.57						
04162021a013.d	4.683	718-2M47 0.050 pg/µL		Calibration	Vial 4	15.0				79.68						
04162021a014.d	4.683	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				39.38						
04162021a015.d	4.679	28408C5.0R4	GA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	325.07	0.185	3.7094				
04162021a016.d	4.679	28408C5.0R4	GA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	320.13	0.183	3.6550	3.68	74%		
04162021a017.d	4.683	28408C5.0R5	GA-WA*370	Sample	P1-A2	15.0	0.100	2000.0	0.00075	341.20	0.194	3.8871				
04162021a018.d	4.683	28408C5.0R5	GA-WA*370	Sample	P1-A2	15.0	0.100	2000.0	0.00075	338.44	0.193	3.8567	3.87	77%	76%	
04162021a019.d	4.679	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				352.68						
04162021a020.d	4.683	28409	GT-WA*370	Sample	P1-A3	15.0	0.100	4000.0	0.000375	135.12	0.0808	3.2334				
04162021a021.d	4.683	28409	GT-WA*370	Sample	P1-A3	15.0	0.100	4000.0	0.000375	130.36	0.0782	3.1287	3.2			
04162021a022.d	4.679	28437	GT-WI388	Sample	P1-A4	15.0	0.100	4000.0	0.000375	141.72	0.0845	3.3790				
04162021a023.d	4.683	28437	GT-WI388	Sample	P1-A4	15.0	0.100	4000.0	0.000375	140.65	0.0839	3.3553	3.4			
04162021a024.d	4.679	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				161.73						
04162021a025.d	-----	28408	GA-WA*370	Sample	P1-A5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04162021a026.d	-----	28408	GA-WA*370	Sample	P1-A5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04162021a027.d	-----	28436	GA-WI388	Sample	P1-A6	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04162021a028.d	-----	28436	GA-WI388	Sample	P1-A6	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04162021a029.d	4.679	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				41.24						

Calculated LOD response at 0.0225 pg/µL= 29.21
Calculated LOQ response at 0.050 pg/µL= 79.14
"-----" Denotes response below area threshold

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\QuantResults\04162021a.batch.bin 4/17/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a010.d	Calibration	1	☑	898	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a011.d	Calibration	2	☑	352	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a019.d	Calibration	2	☑	353	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a012.d	Calibration	3	☑	161	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a024.d	Calibration	3	☑	162	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a013.d	Calibration	4	☑	80	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a014.d	Calibration	5	☑	39	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04162021\04162021a029.d	Calibration	5	☑	41	0.0250

Compound: **Cyantraniliprole** Injection Date: **5/6/2021**

5/7/2021

LID#: 12401.20-CAR14, Dill (Dry) ID167, WA*370, FL136 & CA96, extracted 5/6/2021

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	Ave % Rec	Std Dev
05062021p001.d	4.686	Condition		Sample	P1-A1	15.0										
05062021p002.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p003.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p004.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p005.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p006.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p007.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p008.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p009.d	4.689	Condition		Sample	P1-A1	15.0										
05062021p010.d	4.689	Condition		Sample	Vial 1	15.0										
05062021p011.d	4.689	718-2M59 0.50 pg/µL		Calibration	Vial 1	15.0				837.60						
05062021p012.d	4.689	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				336.65						
05062021p013.d	4.689	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				165.89						
05062021p014.d	4.686	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0				83.05						
05062021p015.d	4.686	718-2M63 0.0250 pg/µL		Calibration	Vial 5	15.0				38.30						
05062021p016.d	4.686	28400C5.0R1	DA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	326.06	0.198	3.9693				
05062021p017.d	4.686	28400C5.0R1	DA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	299.77	0.183	3.6570	3.81	76%		
05062021p018.d	4.686	28400C0.1R1	DA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	132.72	0.0836	0.0836				
05062021p019.d	4.683	28400C0.1R1	DA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	129.56	0.0817	0.0817	0.0827	83%		
05062021p020.d	4.686	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				325.90						
05062021p021.d	4.686	28402	DC-WA*370	Sample	P1-A3	15.0	0.100	10000.0	0.00015	291.98	0.178	17.8221				
05062021p022.d	4.686	28402	DC-WA*370	Sample	P1-A3	15.0	0.100	10000.0	0.00015	296.80	0.181	18.1080	18			
05062021p023.d	4.683	28403	DD-WA*370	Sample	P1-A4	15.0	0.100	10000.0	0.00015	207.60	0.128	12.8099				
05062021p024.d	4.686	28403	DD-WA*370	Sample	P1-A4	15.0	0.100	10000.0	0.00015	200.86	0.124	12.4095	13			
05062021p025.d	4.686	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				152.98						
05062021p026.d	4.689	28476	DC-ID167	Sample	P1-A5	15.0	0.100	10000.0	0.00015	232.98	0.143	14.3177				
05062021p027.d	4.686	28476	DC-ID167	Sample	P1-A5	15.0	0.100	10000.0	0.00015	230.53	0.142	14.1721	14			
05062021p028.d	4.686	28477	DD-ID167	Sample	P1-A6	15.0	0.100	10000.0	0.00015	145.27	0.0911	9.1081				
05062021p029.d	4.679	28477	DD-ID167	Sample	P1-A6	15.0	0.100	10000.0	0.00015	145.51	0.0912	9.1219	9.1			
05062021p030.d	4.686	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				316.02						
05062021p031.d	4.686	28446	DC-FL136	Sample	P1-A7	15.0	0.100	5000.0	0.00030	147.24	0.0922	4.6124				
05062021p032.d	4.686	28446	DC-FL136	Sample	P1-A7	15.0	0.100	5000.0	0.00030	147.92	0.0927	4.6327	4.6			
05062021p033.d	4.686	28447	DD-FL136	Sample	P1-A8	15.0	0.100	5000.0	0.00030	107.23	0.0685	3.4242				
05062021p034.d	4.683	28447	DD-FL136	Sample	P1-A8	15.0	0.100	5000.0	0.00030	101.01	0.0648	3.2396	3.3			
05062021p035.d	4.686	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				152.77						
05062021p036.d	4.689	28458	DC-CA96	Sample	P1-A9	15.0	0.100	20000.0	0.000075	438.88	0.265	53.0943				
05062021p037.d	4.686	28458	DC-CA96	Sample	P1-A9	15.0	0.100	20000.0	0.000075	431.40	0.261	52.2055	53			
05062021p038.d	4.686	28459	DD-CA96	Sample	P1-B1	15.0	0.100	20000.0	0.000075	623.01	0.375	74.9672				
05062021p039.d	4.686	28459	DD-CA96	Sample	P1-B1	15.0	0.100	20000.0	0.000075	614.93	0.370	74.0079	74			
05062021p040.d	4.686	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0				76.30						
05062021p041.d	-----	28400	DA-WA*370	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05062021p042.d	-----	28400	DA-WA*370	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05062021p043.d	-----	28474	DA-ID167	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05062021p044.d	-----	28474	DA-ID167	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05062021p045.d	4.686	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0				74.84						
05062021p046.d	4.683	28456	DA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	28.61	<0.050	<0.010				
05062021p047.d	4.676	28456	DA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	29.10	<0.050	<0.010	<0.010			
05062021p048.d	4.683	718-2M63 0.0250 pg/µL		Calibration	Vial 5	15.0				36.64						

Calculated LOD response at 0.0225 pg/µL= 29.81

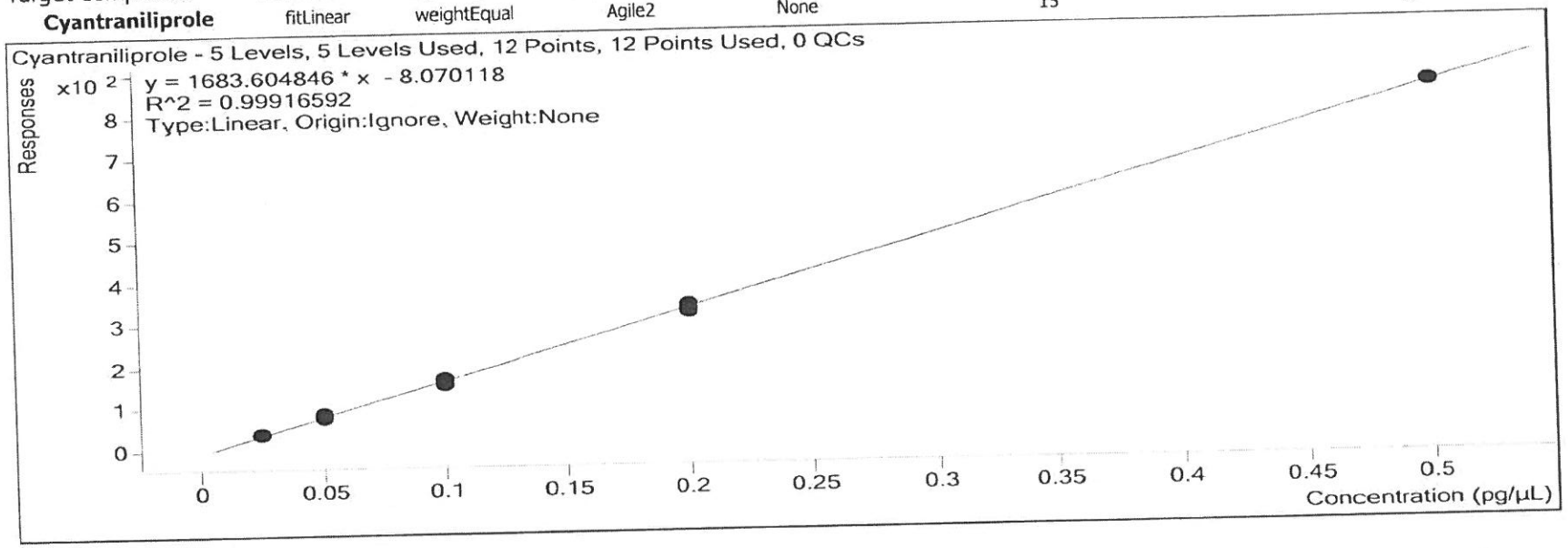
Calculated LOQ response at 0.050 pg/µL= 76.11

"-----" Denotes response below area threshold

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\QuantResults\05062021p.batch.bin 5/7/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p011.d	Calibration	1	☑	838	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p012.d	Calibration	2	☑	337	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p020.d	Calibration	2	☑	326	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p030.d	Calibration	2	☑	316	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p013.d	Calibration	3	☑	166	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p025.d	Calibration	3	☑	153	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p035.d	Calibration	3	☑	153	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p014.d	Calibration	4	☑	83	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p040.d	Calibration	4	☑	76	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p045.d	Calibration	4	☑	75	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p015.d	Calibration	5	☑	38	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021p048.d	Calibration	5	☑	37	0.0250

5/6/2021 P. 1 of 2

Compound: **IN-J9Z38** Injection Date: **5/6/2021**

LID#: 12401.20-CAR14, Dill (Dry) ID167, WA*370, FL136 & CA96, extracted 5/6/2021

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	Ave % Rec	Std Dev
05062021m001.d	1.622	Condition		Sample	P1-A1	15.0										
05062021m002.d	1.629	Condition		Sample	P1-A1	15.0										
05062021m003.d	1.629	Condition		Sample	P1-A1	15.0										
05062021m004.d	1.629	Condition		Sample	P1-A1	15.0										
05062021m005.d	1.629	Condition		Sample	P1-A1	15.0										
05062021m006.d	1.629	Condition		Sample	P1-A1	15.0										
05062021m007.d	1.629	718-2M59 0.50 pg/µL		Calibration	Vial 1	15.0				493.89						
05062021m008.d	1.629	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				191.92						
05062021m009.d	1.629	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				97.53						
05062021m010.d	1.629	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0				47.95						
05062021m011.d	1.629	718-2M63 0.0250 pg/µL		Calibration	Vial 5	15.0				25.16						
05062021m012.d	1.629	28400C5.0R1	DA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	240.04	0.249	4.9774				
05062021m013.d	1.636	28400C5.0R1	DA-WA*370	Sample	P1-A1	15.0	0.100	2000.0	0.00075	229.15	0.238	4.7536	4.87	97%		
05062021m014.d	1.629	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				204.68						
05062021m015.d	1.629	28400C0.1R1	DA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	93.66	0.0984	0.0984				
05062021m016.d	1.629	28400C0.1R1	DA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	93.40	0.0982	0.0982	0.0983	98%		
05062021m017.d	1.636	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				91.30						
05062021m018.d	1.636	28402	DC-WA*370	Sample	P1-A3	15.0	0.100	100.0	0.0150	247.08	0.256	0.2561				
05062021m019.d	1.636	28402	DC-WA*370	Sample	P1-A3	15.0	0.100	100.0	0.0150	244.09	0.253	0.2530	0.25			
05062021m020.d	1.636	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				183.66						
05062021m021.d	1.636	28403	DD-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	204.90	0.213	0.2128				
05062021m022.d	1.636	28403	DD-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	210.74	0.219	0.2188	0.22			
05062021m023.d	1.636	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				91.09						
05062021m024.d	1.629	28476	DC-ID167	Sample	P1-A5	15.0	0.100	20.0	0.0750	287.18	0.297	0.0595				
05062021m025.d	1.629	28476	DC-ID167	Sample	P1-A5	15.0	0.100	20.0	0.0750	292.98	0.303	0.0607	0.060			
05062021m026.d	1.636	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				180.60						
05062021m027.d	1.629	28477	DD-ID167	Sample	P1-A6	15.0	0.100	20.0	0.0750	241.64	0.251	0.0501				
05062021m028.d	1.629	28477	DD-ID167	Sample	P1-A6	15.0	0.100	20.0	0.0750	257.90	0.267	0.0534	0.052			
05062021m029.d	1.636	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				98.47						
05062021m030.d	1.642	28446	DC-FL136	Sample	P1-A7	15.0	0.100	400.0	0.00375	231.15	0.240	0.9589				
05062021m031.d	1.642	28446	DC-FL136	Sample	P1-A7	15.0	0.100	400.0	0.00375	238.61	0.247	0.9896	0.97			
05062021m032.d	1.642	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0				53.64						
05062021m033.d	1.642	28447	DD-FL136	Sample	P1-A8	15.0	0.100	400.0	0.00375	190.87	0.198	0.7933				
05062021m034.d	1.642	28447	DD-FL136	Sample	P1-A8	15.0	0.100	400.0	0.00375	191.81	0.199	0.7972	0.80			
05062021m035.d	1.642	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				91.81						
05062021m036.d	1.642	28458	DC-CA96	Sample	P1-A9	15.0	0.100	400.0	0.00375	99.27	0.104	0.4168				
05062021m037.d	1.642	28458	DC-CA96	Sample	P1-A9	15.0	0.100	400.0	0.00375	99.06	0.104	0.4159	0.42			
05062021m038.d	1.642	718-2M60 0.20 pg/µL		Calibration	Vial 2	15.0				178.17						
05062021m039.d	1.642	28459	DD-CA96	Sample	P1-B1	15.0	0.100	400.0	0.00375	140.39	0.146	0.5858				
05062021m040.d	1.642	28459	DD-CA96	Sample	P1-B1	15.0	0.100	400.0	0.00375	137.84	0.144	0.5753	0.58			
05062021m041.d	1.642	718-2M61 0.10 pg/µL		Calibration	Vial 3	15.0				87.81						

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	Ave % Rec	Std Dev
05062021m042.d	-----	28400	DA-WA*370	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05062021m043.d	-----	28400	DA-WA*370	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05062021m044.d	1.642	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0				55.61						
05062021m045.d	-----	28474	DA-ID167	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05062021m046.d	-----	28474	DA-ID167	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05062021m047.d	1.642	718-2M62 0.050 pg/µL		Calibration	Vial 4	15.0	0.000	1.0		51.80						
05062021m048.d	-----	28456	DA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05062021m049.d	-----	28456	DA-CA96	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05062021m050.d	1.636	718-2M63 0.0250 pg/µL		Calibration	Vial 5	15.0	0.000	1.0		23.48						

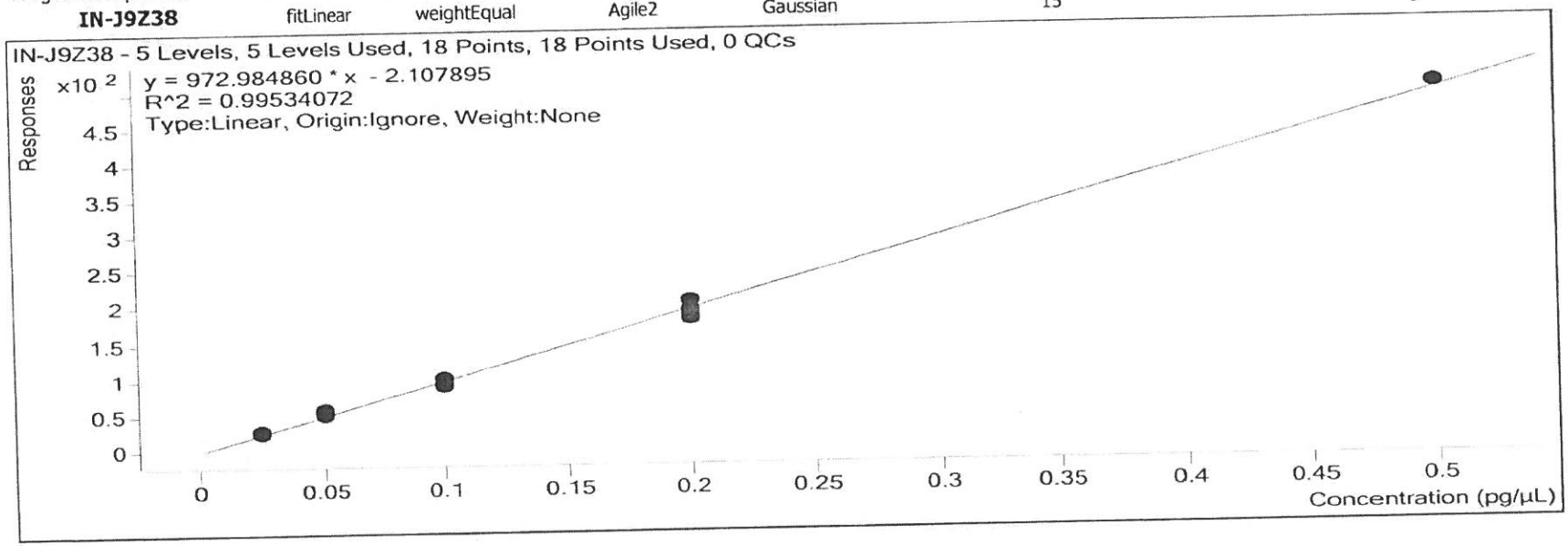
Calculated LOD response at 0.0225 pg/µL= 19.78
Calculated LOQ response at 0.050 pg/µL= 46.54
"-----" Denotes response below area threshold

5/6/2021
M
P. 2 of 2

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\QuantResults\05062021m.batch.bin 5/6/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	Gaussian	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m007.d	Calibration	1	☑	494	0.5000
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D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m020.d	Calibration	2	☑	184	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m026.d	Calibration	2	☑	181	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m038.d	Calibration	2	☑	178	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m009.d	Calibration	3	☑	98	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m017.d	Calibration	3	☑	91	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m023.d	Calibration	3	☑	91	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m029.d	Calibration	3	☑	98	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m035.d	Calibration	3	☑	92	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m041.d	Calibration	3	☑	88	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m010.d	Calibration	4	☑	48	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m032.d	Calibration	4	☑	54	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m044.d	Calibration	4	☑	56	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m047.d	Calibration	4	☑	52	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m011.d	Calibration	5	☑	25	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05062021\05062021m050.d	Calibration	5	☑	23	0.0250

5/14/2021

Compound: **Cyantraniliprole**

Injection Date: **5/13/2021**

LID#: 12401.20-CAR14, Dill (Dry) NJ249 & WI388, extracted 5/13/2021

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	Ave % Rec	Std Dev
05132021p001.d	4.676	Condition		Sample	P1-A1	15.0										
05132021p002.d	4.679	Condition		Sample	P1-A2	15.0										
05132021p003.d	4.679	Condition		Sample	P1-A3	15.0										
05132021p004.d	4.679	Condition		Sample	P1-A1	15.0										
05132021p005.d	4.683	Condition		Sample	P1-A2	15.0										
05132021p006.d	4.683	Condition		Sample	P1-A3	15.0										
05132021p007.d	4.686	Condition		Sample	P1-A1	15.0										
05132021p008.d	4.683	Condition		Sample	P1-A2	15.0										
05132021p009.d	4.683	Condition		Sample	P1-A3	15.0										
05132021p010.d	4.683	Condition		Sample	Vial 1	15.0										
05132021p011.d	4.686	718-2M64 0.50 pg/µL		Calibration	Vial 1	15.0				861.23						
05132021p012.d	4.683	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				350.36						
05132021p013.d	4.683	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				166.17						
05132021p014.d	4.686	718-2M67 0.050 pg/µL		Calibration	Vial 4	15.0				85.68						
05132021p015.d	4.686	718-2M68 0.0250 pg/µL		Calibration	Vial 5	15.0				43.58						
05132021p016.d	4.683	28416C100R1	DA-NJ249	Sample	P1-A1	15.0	0.100	40000.0	0.0000375	430.06	0.250	99.8182				
05132021p017.d	4.683	28416C100R1	DA-NJ249	Sample	P1-A1	15.0	0.100	40000.0	0.0000375	426.55	0.248	99.0055	99.4	99%		
05132021p018.d	4.686	28416C100R2	DA-NJ249	Sample	P1-A2	15.0	0.100	40000.0	0.0000375	470.33	0.273	109.1472				
05132021p019.d	4.686	28416C100R2	DA-NJ249	Sample	P1-A2	15.0	0.100	40000.0	0.0000375	463.17	0.269	107.4880	108	108%		
05132021p020.d	4.683	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				344.88						
05132021p021.d	4.683	28416C100R3	DA-NJ249	Sample	P1-A3	15.0	0.100	40000.0	0.0000375	341.59	0.198	79.3258				
05132021p022.d	4.686	28416C100R3	DA-NJ249	Sample	P1-A3	15.0	0.100	40000.0	0.0000375	334.25	0.194	77.6243	78.5	78%	95%	15%
05132021p023.d	4.686	28416C0.1R2	DA-NJ249	Sample	P1-A4	15.0	0.100	100.0	0.0150	129.79	0.0757	0.0757				
05132021p024.d	4.686	28416C0.1R2	DA-NJ249	Sample	P1-A4	15.0	0.100	100.0	0.0150	125.90	0.0734	0.0734	0.0745	75%		
05132021p025.d	4.683	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				168.51						
05132021p026.d	4.686	28416C0.1R3	DA-NJ249	Sample	P1-A5	15.0	0.100	100.0	0.0150	129.89	0.0757	0.0757				
05132021p027.d	4.686	28416C0.1R3	DA-NJ249	Sample	P1-A5	15.0	0.100	100.0	0.0150	128.35	0.0748	0.0748	0.0753	75%	75%	
05132021p028.d	4.686	28418	DC-NJ249	Sample	P1-A6	15.0	0.100	40000.0	0.0000375	254.84	0.148	59.2307				
05132021p029.d	4.686	28418	DC-NJ249	Sample	P1-A6	15.0	0.100	40000.0	0.0000375	252.16	0.147	58.6091	59			
05132021p030.d	4.683	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				345.26						
05132021p031.d	4.683	28419	DD-NJ249	Sample	P1-A7	15.0	0.100	40000.0	0.0000375	193.55	0.113	45.0320				
05132021p032.d	4.683	28419	DD-NJ249	Sample	P1-A7	15.0	0.100	40000.0	0.0000375	183.74	0.107	42.7606	44			
05132021p033.d	4.683	28430	DC-WI388	Sample	P1-A8	15.0	0.100	20000.0	0.000075	128.48	0.0749	14.9802				
05132021p034.d	4.686	28430	DC-WI388	Sample	P1-A8	15.0	0.100	20000.0	0.000075	125.63	0.0733	14.6501	15			
05132021p035.d	4.683	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				171.90						
05132021p036.d	4.683	28431	DD-WI388	Sample	P1-A9	15.0	0.100	20000.0	0.000075	74.28	0.0435	8.7028				
05132021p037.d	4.686	28431	DD-WI388	Sample	P1-A9	15.0	0.100	20000.0	0.000075	72.04	0.0422	8.4426	8.6			
05132021p038.d	-----	28416	DA-NJ249	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05132021p039.d	-----	28416	DA-NJ249	Sample	P1-B1	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05132021p040.d	4.683	718-2M67 0.050 pg/µL		Calibration	Vial 4	15.0				87.94						
05132021p041.d	-----	28428	DA-WI388	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05132021p042.d	-----	28428	DA-WI388	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05132021p043.d	4.683	718-2M68 0.0250 pg/µL		Calibration	Vial 5	15.0				41.61						

Calculated LOD response at 0.0225 pg/µL= 38.00

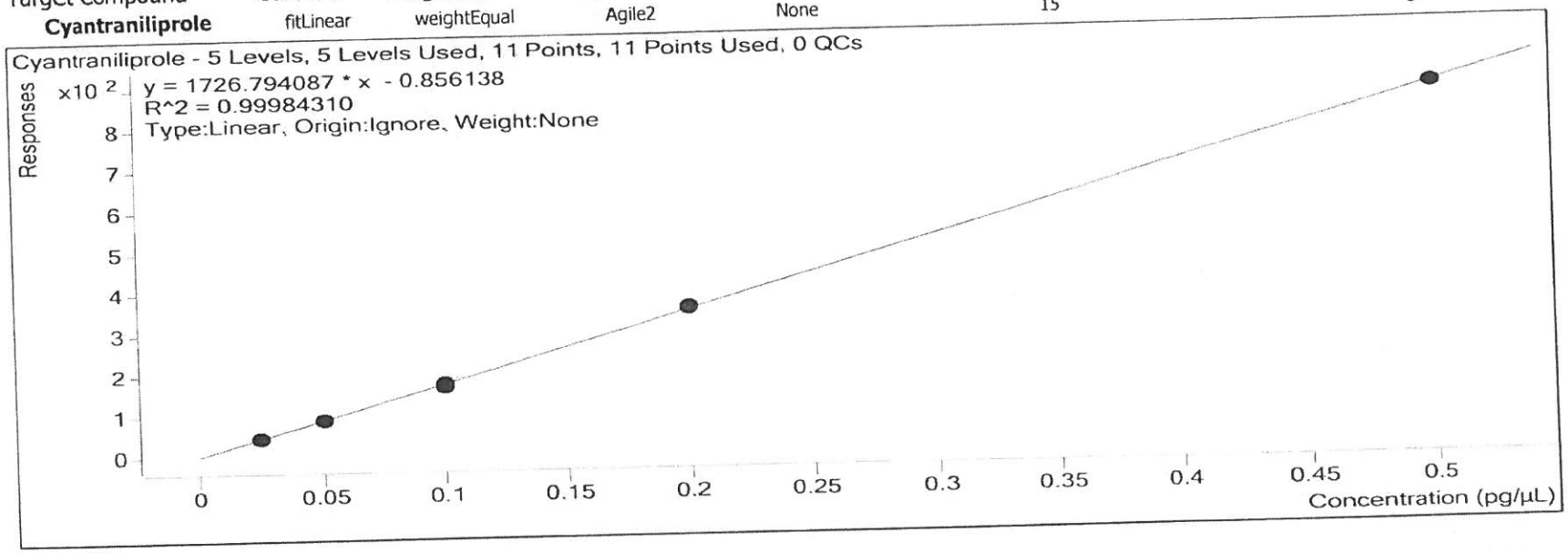
Calculated LOQ response at 0.050 pg/µL= 85.48

"-----" Denotes response below area threshold

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\QuantResults\05132021p.batch.bin 5/14/2021 MM

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p011.d	Calibration	1	☑	861	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p012.d	Calibration	2	☑	350	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p020.d	Calibration	2	☑	345	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p030.d	Calibration	2	☑	345	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p013.d	Calibration	3	☑	166	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p025.d	Calibration	3	☑	169	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p035.d	Calibration	3	☑	172	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p014.d	Calibration	4	☑	86	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p040.d	Calibration	4	☑	88	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p015.d	Calibration	5	☑	44	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021p043.d	Calibration	5	☑	42	0.0250

Compound **IN-J9Z38** Injection Date **5/13/2021**

5/13/2021

LID#: 12401.20-CAR14, Dill (Dry) NJ249 & WI388, extracted 5/13/2021

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	Ave % Rec	Std Dev
05132021m001.d	1.609	Condition		Sample	P1-A1	15.0										
05132021m002.d	1.615	Condition		Sample	P1-A1	15.0										
05132021m003.d	1.615	Condition		Sample	P1-A1	15.0										
05132021m004.d	1.622	Condition		Sample	P1-A2	15.0										
05132021m005.d	1.622	Condition		Sample	P1-A2	15.0										
05132021m006.d	1.622	Condition		Sample	P1-A2	15.0										
05132021m007.d	1.622	718-2M64 0.50 pg/µL		Calibration	Vial 1	15.0				490.95						
05132021m008.d	1.622	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				196.68						
05132021m009.d	1.622	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				102.21						
05132021m010.d	1.622	718-2M67 0.050 pg/µL		Calibration	Vial 4	15.0				47.57						
05132021m011.d	1.622	718-2M68 0.0250 pg/µL		Calibration	Vial 5	15.0				25.00						
05132021m012.d	1.622	28416C0.1R2	DA-NJ249	Sample	P1-A1	15.0	0.100	100.0	0.0150	102.90	0.103	0.1028				
05132021m013.d	1.629	28416C0.1R2	DA-NJ249	Sample	P1-A1	15.0	0.100	100.0	0.0150	96.92	0.0967	0.0967	0.0997	100%		
05132021m014.d	1.629	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				196.99						
05132021m015.d	1.622	28416C0.1R3	DA-NJ249	Sample	P1-A2	15.0	0.100	100.0	0.0150	97.93	0.0977	0.0977				
05132021m016.d	1.629	28416C0.1R3	DA-NJ249	Sample	P1-A2	15.0	0.100	100.0	0.0150	99.54	0.0993	0.0993	0.0985	99%	99%	
05132021m017.d	1.622	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				107.07						
05132021m018.d	1.629	28418	DC-NJ249	Sample	P1-A3	15.0	0.100	2000.0	0.00075	238.02	0.241	4.8274				
05132021m019.d	1.622	28418	DC-NJ249	Sample	P1-A3	15.0	0.100	2000.0	0.00075	243.02	0.246	4.9300	4.9			
05132021m020.d	1.629	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				194.03						
05132021m021.d	1.629	28419	DD-NJ249	Sample	P1-A4	15.0	0.100	2000.0	0.00075	266.37	0.270	5.4090				
05132021m022.d	1.629	28419	DD-NJ249	Sample	P1-A4	15.0	0.100	2000.0	0.00075	273.38	0.278	5.5526	5.5			
05132021m023.d	1.629	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				101.63						
05132021m024.d	1.629	28430	DC-WI388	Sample	P1-A5	15.0	0.100	100.0	0.0150	305.93	0.311	0.3110				
05132021m025.d	1.629	28430	DC-WI388	Sample	P1-A5	15.0	0.100	100.0	0.0150	301.67	0.307	0.3067	0.31			
05132021m026.d	1.622	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				194.70						
05132021m027.d	1.622	28431	DD-WI388	Sample	P1-A6	15.0	0.100	100.0	0.0150	223.37	0.226	0.2263				
05132021m028.d	1.629	28431	DD-WI388	Sample	P1-A6	15.0	0.100	100.0	0.0150	242.23	0.246	0.2457	0.24			
05132021m029.d	1.629	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				106.22						
05132021m030.d	~~1.5610~~	28416	DA-NJ249	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05132021m031.d	~~1.5610~~	28416	DA-NJ249	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05132021m032.d	1.629	718-2M67 0.050 pg/µL		Calibration	Vial 4	15.0				50.08						
05132021m033.d	-----	28428	DA-WI388	Sample	P1-A8	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05132021m034.d	-----	28428	DA-WI388	Sample	P1-A8	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05132021m035.d	1.629	718-2M68 0.0250 pg/µL		Calibration	Vial 5	15.0				25.57						

Calculated LOD response at 0.0225 pg/µL= 24.63

Calculated LOQ response at 0.050 pg/µL= 51.44

"-----" Denotes response below area threshold

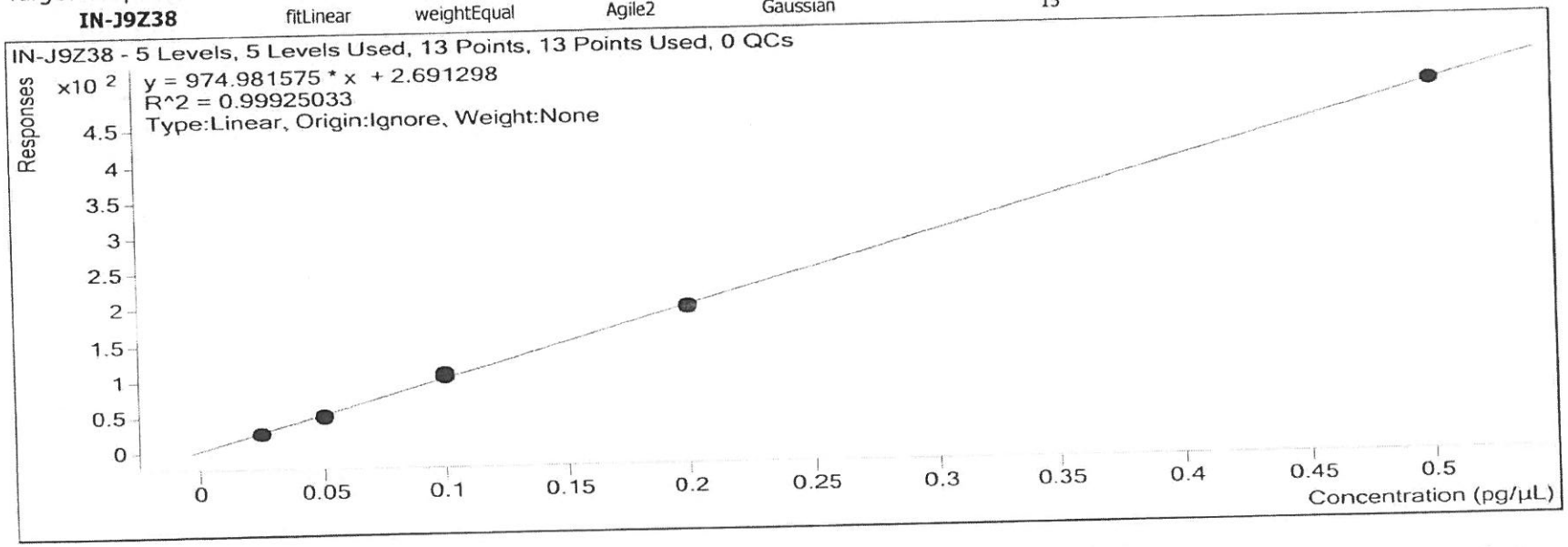
Struckthrough data not reported, integrator identified a back ground peak at wrong retention time. The peak was zeroed out.

5/13/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\QuantResults\05132021m.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	Gaussian	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m007.d	Calibration	1	☑	491	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m008.d	Calibration	2	☑	197	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m014.d	Calibration	2	☑	197	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m020.d	Calibration	2	☑	194	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m026.d	Calibration	2	☑	195	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m009.d	Calibration	3	☑	102	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m017.d	Calibration	3	☑	107	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m023.d	Calibration	3	☑	102	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m029.d	Calibration	3	☑	106	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m010.d	Calibration	4	☑	48	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m032.d	Calibration	4	☑	50	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m011.d	Calibration	5	☑	25	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05132021\05132021m035.d	Calibration	5	☑	26	0.0250

Compound **IN-J9Z38** Injection Date **5/14/2021**

5/14/2021

LID#: 12401.20-CAR14, Dill (Dry) 10 ppm IN-J9Z38, extracted 5/14/2021

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	Ave % Rec	Std Dev
05142021m001.d	1.629	Condition		Sample	P1-A1	15.0										
05142021m002.d	1.636	Condition		Sample	P1-A2	15.0										
05142021m003.d	1.636	Condition		Sample	P1-A3	15.0										
05142021m004.d	1.636	Condition		Sample	P1-A1	15.0										
05142021m005.d	1.636	Condition		Sample	P1-A2	15.0										
05142021m006.d	1.636	Condition		Sample	P1-A3	15.0										
05142021m007.d	1.636	718-2M64 0.50 pg/µL		Calibration	Vial 1	15.0				470.90						
05142021m008.d	1.636	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				181.56						
05142021m009.d	1.636	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				93.29						
05142021m010.d	1.636	718-2M67 0.050 pg/µL		Calibration	Vial 4	15.0				45.64						
05142021m011.d	1.636	718-2M68 0.0250 pg/µL		Calibration	Vial 5	15.0				27.45						
05142021m012.d	1.642	28429C10R1	DB-WI388	Sample	P1-A1	15.0	0.100	4000.0	0.000375	215.35	0.230	9.1809				
05142021m013.d	1.636	28429C10R1	DB-WI388	Sample	P1-A1	15.0	0.100	4000.0	0.000375	206.81	0.220	8.8163	9.00	90%		
05142021m014.d	1.636	718-2M65 0.20 pg/µL		Calibration	Vial 2	15.0				187.31						
05142021m015.d	1.642	28429C10R2	DB-WI388	Sample	P1-A2	15.0	0.100	4000.0	0.000375	215.32	0.229	9.1798				
05142021m016.d	1.642	28429C10R2	DB-WI388	Sample	P1-A2	15.0	0.100	4000.0	0.000375	223.56	0.238	9.5314	9.36	94%		
05142021m017.d	1.642	718-2M66 0.10 pg/µL		Calibration	Vial 3	15.0				97.19						
05142021m018.d	1.642	28429C10R3	DB-WI388	Sample	P1-A3	15.0	0.100	4000.0	0.000375	216.72	0.231	9.2394				
05142021m019.d	1.636	28429C10R3	DB-WI388	Sample	P1-A3	15.0	0.100	4000.0	0.000375	209.70	0.223	8.9398	9.09	91%	91%	2%
05142021m020.d	1.642	718-2M67 0.050 pg/µL		Calibration	Vial 4	15.0				47.18						
05142021m021.d	-----	28429	DB-WI388	Sample	P1-A4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05142021m022.d	-----	28429	DB-WI388	Sample	P1-A4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05142021m023.d	1.636	718-2M68 0.0250 pg/µL		Calibration	Vial 5	15.0				23.18						

Calculated LOD response at 0.0225 pg/µL= 21.34

Calculated LOQ response at 0.050 pg/µL= 47.11

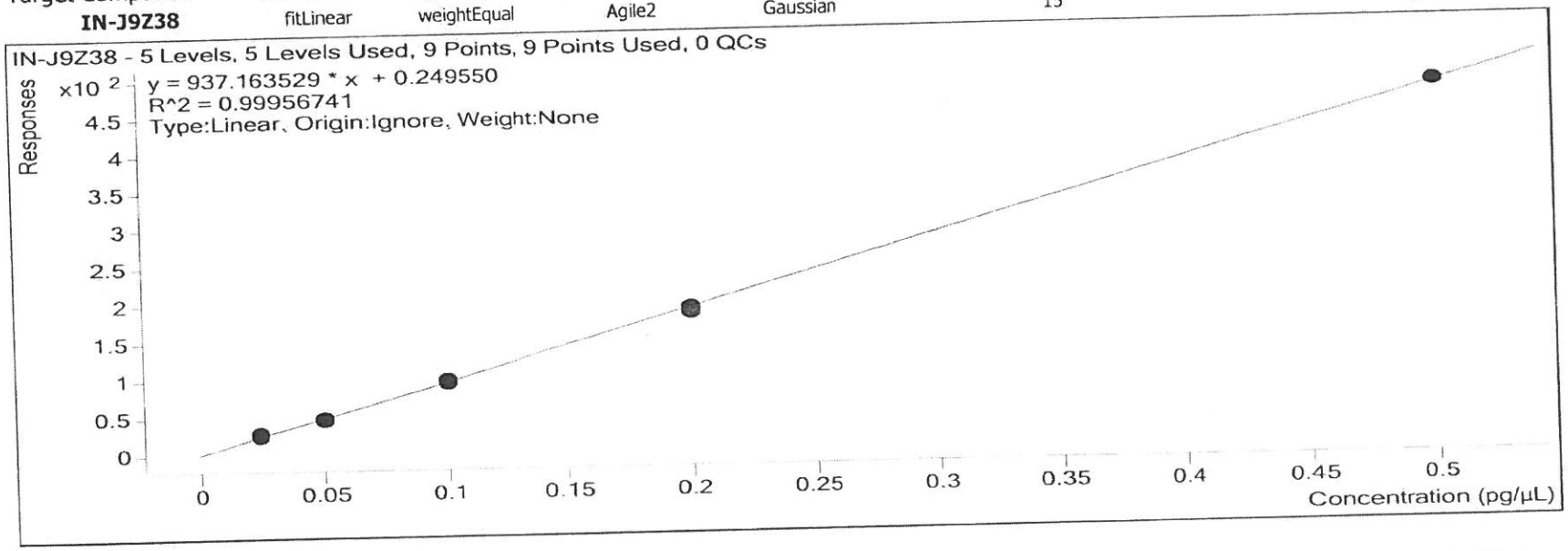
"----" Denotes response below area threshold

5/14/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\QuantResults\05142021m.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	Gaussian	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m007.d	Calibration	1	☑	471	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m008.d	Calibration	2	☑	182	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m014.d	Calibration	2	☑	187	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m009.d	Calibration	3	☑	93	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m017.d	Calibration	3	☑	97	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m010.d	Calibration	4	☑	46	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m020.d	Calibration	4	☑	47	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m011.d	Calibration	5	☑	27	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05142021\05142021m023.d	Calibration	5	☑	23	0.0250

4/9/2021

Compound **Cyantraniliprole**

Injection Date **4/8/2021**

LID#: 12401.20-CAR14, Dill (Seed) ID167, WA*370, FL136 & CA96, extracted 4/8/2021

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	Ave % Rec	Std Dev
04082021a001.d	4.672	Condition		Sample	P1-A1	15.0										
04082021a002.d	4.679	Condition		Sample	P1-A1	15.0										
04082021a003.d	4.683	Condition		Sample	P1-A1	15.0										
04082021a004.d	4.686	Condition		Sample	P1-A1	15.0										
04082021a005.d	4.686	Condition		Sample	P1-A1	15.0										
04082021a006.d	4.686	Condition		Sample	P1-A1	15.0										
04082021a007.d	4.679	Condition		Sample	P1-A1	15.0										
04082021a008.d	4.686	Condition		Sample	Vial 1	15.0										
04082021a009.d	4.689	Condition		Sample	Vial 1	15.0										
04082021a010.d	4.683	718-2M39 0.50 pg/µL		Calibration	Vial 1	15.0				895.38						
04082021a011.d	4.683	718-2M40 0.20 pg/µL		Calibration	Vial 2	15.0				347.84						
04082021a012.d	4.683	718-2M41 0.10 pg/µL		Calibration	Vial 3	15.0				168.23						
04082021a013.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				88.49						
04082021a014.d	4.679	718-2M43 0.0250 pg/µL		Calibration	Vial 5	15.0				35.62						
04082021a015.d	4.679	28478C5.0R1	SA-ID167	Sample	P1-A1	15.0	0.100	2000.0	0.00075	386.58	0.221	4.4119				
04082021a016.d	4.679	28478C5.0R1	SA-ID167	Sample	P1-A1	15.0	0.100	2000.0	0.00075	379.62	0.217	4.3344	4.37	87%		
04082021a017.d	4.679	28478C0.1R1	SA-ID167	Sample	P1-A2	15.0	0.100	100.0	0.0150	174.00	0.102	0.1023				
04082021a018.d	4.683	28478C0.1R1	SA-ID167	Sample	P1-A2	15.0	0.100	100.0	0.0150	164.51	0.0970	0.0970	0.0996	100%		
04082021a019.d	4.679	718-2M40 0.20 pg/µL		Calibration	Vial 2	15.0				343.04						
04082021a020.d	4.679	28480	SC-ID167	Sample	P1-A3	15.0	0.100	10000.0	0.00015	174.59	0.103	10.2602				
04082021a021.d	4.683	28480	SC-ID167	Sample	P1-A3	15.0	0.100	10000.0	0.00015	167.09	0.0984	9.8433	10			
04082021a022.d	4.679	28481	SD-ID167	Sample	P1-A4	15.0	0.100	10000.0	0.00015	239.42	0.139	13.8685				
04082021a023.d	4.679	28481	SD-ID167	Sample	P1-A4	15.0	0.100	10000.0	0.00015	236.71	0.137	13.7180	14			
04082021a024.d	4.679	718-2M41 0.10 pg/µL		Calibration	Vial 3	15.0				169.56						
04082021a025.d	4.683	28406	SC-WA*370	Sample	P1-A5	15.0	0.100	10000.0	0.00015	251.94	0.146	14.5658				
04082021a026.d	4.679	28406	SC-WA*370	Sample	P1-A5	15.0	0.100	10000.0	0.00015	246.90	0.143	14.2852	14			
04082021a027.d	4.679	28407	SD-WA*370	Sample	P1-A6	15.0	0.100	10000.0	0.00015	290.46	0.167	16.7095				
04082021a028.d	4.679	28407	SD-WA*370	Sample	P1-A6	15.0	0.100	10000.0	0.00015	291.25	0.168	16.7534	17			
04082021a029.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				83.25						
04082021a030.d	4.683	28450	SC-FL136	Sample	P1-A7	15.0	0.100	10000.0	0.00015	167.64	0.0987	9.8737				
04082021a031.d	4.683	28450	SC-FL136	Sample	P1-A7	15.0	0.100	10000.0	0.00015	153.74	0.0910	9.1000	9.5			
04082021a032.d	4.679	28451	SD-FL136	Sample	P1-A8	15.0	0.100	10000.0	0.00015	176.57	0.104	10.3704				
04082021a033.d	4.679	28451	SD-FL136	Sample	P1-A8	15.0	0.100	10000.0	0.00015	168.38	0.0991	9.9148	10			
04082021a034.d	4.679	718-2M41 0.10 pg/µL		Calibration	Vial 3	15.0				164.87						
04082021a035.d	4.679	28462	SC-CA96	Sample	P1-A9	15.0	0.100	20000.0	0.000075	413.70	0.236	47.1375				
04082021a036.d	4.679	28462	SC-CA96	Sample	P1-A9	15.0	0.100	20000.0	0.000075	416.74	0.237	47.4765	47			
04082021a037.d	4.679	28463	SD-CA96	Sample	P1-B1	15.0	0.100	20000.0	0.000075	334.20	0.191	38.2875				
04082021a038.d	4.679	28463	SD-CA96	Sample	P1-B1	15.0	0.100	20000.0	0.000075	326.44	0.187	37.4239	38			
04082021a039.d	4.679	718-2M40 0.20 pg/µL		Calibration	Vial 2	15.0				339.79						
04082021a040.d	-----	28478	SA-ID167	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04082021a041.d	-----	28478	SA-ID167	Sample	P1-B2	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04082021a042.d	-----	28404	SA-WA*370	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04082021a043.d	-----	28404	SA-WA*370	Sample	P1-B3	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04082021a044.d	4.679	718-2M42 0.050 pg/µL		Calibration	Vial 4	15.0				86.93						
04082021a045.d	-----	28448	SA-FL136	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04082021a046.d	-----	28448	SA-FL136	Sample	P1-B4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04082021a047.d	4.679	718-2M43 0.0250 pg/µL		Calibration	Vial 5	15.0	0.000	1.0		34.59						

Calculated LOD response at 0.0225 pg/µL= 30.67

Calculated LOQ response at 0.050 pg/µL= 80.08

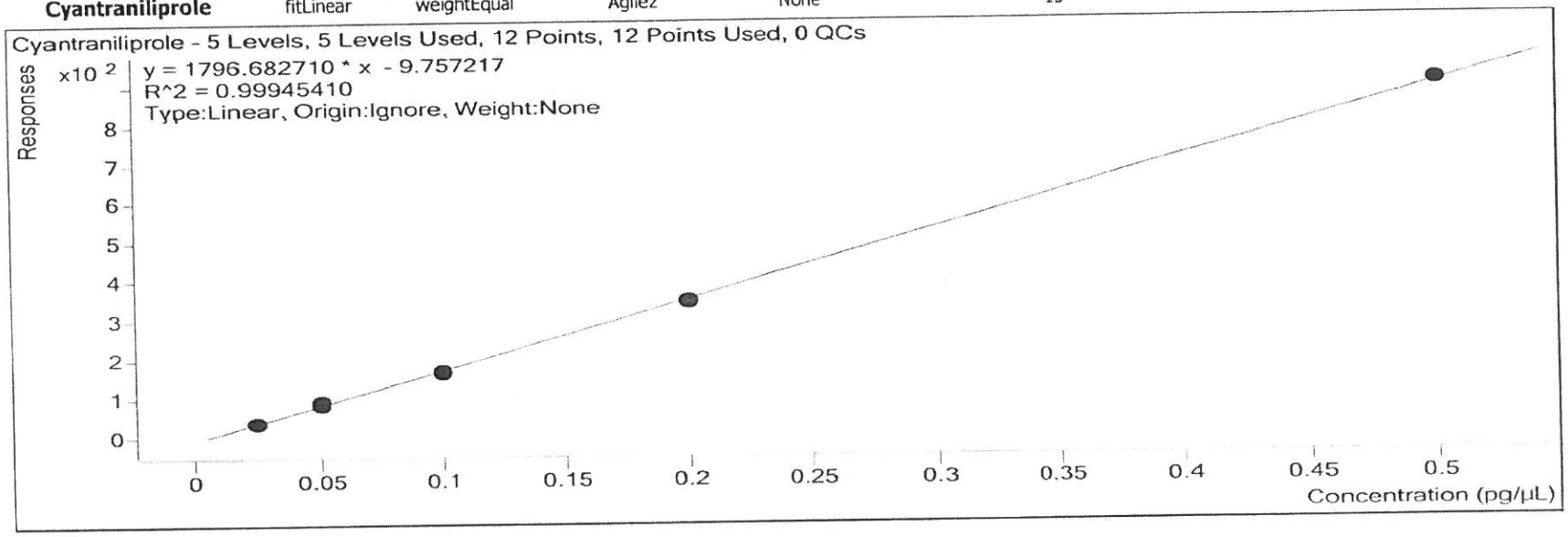
"-----" Denotes response below area threshold

4/9/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\QuantResults\04082021a.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a010.d	Calibration	1	☑	895	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a011.d	Calibration	2	☑	348	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a019.d	Calibration	2	☑	343	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a039.d	Calibration	2	☑	340	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a012.d	Calibration	3	☑	168	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a024.d	Calibration	3	☑	170	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a034.d	Calibration	3	☑	165	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a013.d	Calibration	4	☑	88	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a029.d	Calibration	4	☑	83	0.0500
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D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a014.d	Calibration	5	☑	36	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04082021\04082021a047.d	Calibration	5	☑	35	0.0250

4/13/2021
RE

Compound: **Cyantraniliprole** Injection Date: **4/12/2021**

LID#: 12401.20-CAR14, Dill (Seed) NJ249 & WI388, extracted 4/12/2021

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	Ave % Rec	Std Dev
04122021a001.d	4.672	Condition		Sample	P1-A1	15.0										
04122021a002.d	4.672	Condition		Sample	P1-A2	15.0										
04122021a003.d	4.676	Condition		Sample	P1-A3	15.0										
04122021a004.d	4.676	Condition		Sample	P1-A1	15.0										
04122021a005.d	4.679	Condition		Sample	P1-A2	15.0										
04122021a006.d	4.679	Condition		Sample	P1-A3	15.0										
04122021a007.d	4.683	Condition		Sample	P1-A1	15.0										
04122021a008.d	4.679	Condition		Sample	Vial 1	15.0										
04122021a009.d	4.683	Condition		Sample	Vial 1	15.0										
04122021a010.d	4.683	718-2M44 0.50 pg/µL		Calibration	Vial 1	15.0				888.19						
04122021a011.d	4.683	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				317.43						
04122021a012.d	4.679	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				142.77						
04122021a013.d	4.679	718-2M47 0.050 pg/µL		Calibration	Vial 4	15.0				80.87						
04122021a014.d	4.679	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				36.32						
04122021a015.d	4.679	28420C50R1	SA-NJ249	Sample	P1-A1	15.0	0.100	20000.0	0.000075	634.706	0.368378	73.6755				
04122021a016.d	4.679	28420C50R1	SA-NJ249	Sample	P1-A1	15.0	0.100	20000.0	0.000075	609.932	0.354478	70.8955	72.2855	145%		
04122021a017.d	4.683	28420C50R2	SA-NJ249	Sample	P1-A2	15.0	0.100	20000.0	0.000075	423.00	0.250	49.9187				
04122021a018.d	4.679	28420C50R2	SA-NJ249	Sample	P1-A2	15.0	0.100	20000.0	0.000075	420.29	0.248	49.6149	49.8	100%		
04122021a019.d	4.679	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				306.87						
04122021a020.d	4.679	28420C50R3	SA-NJ249	Sample	P1-A3	15.0	0.100	20000.0	0.000075	413.38	0.244	48.8400				
04122021a021.d	4.679	28420C50R3	SA-NJ249	Sample	P1-A3	15.0	0.100	20000.0	0.000075	414.83	0.245	49.0023	48.9	98%	99%	
04122021a022.d	4.679	28422	SC-NJ249	Sample	P1-A4	15.0	0.100	10000.0	0.00015	406.61	0.240	24.0396				
04122021a023.d	4.679	28422	SC-NJ249	Sample	P1-A4	15.0	0.100	10000.0	0.00015	399.78	0.237	23.6568	24			
04122021a024.d	4.679	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				155.50						
04122021a025.d	4.679	28423	SD-NJ249	Sample	P1-A5	15.0	0.100	10000.0	0.00015	369.73	0.220	21.9705				
04122021a026.d	4.679	28423	SD-NJ249	Sample	P1-A5	15.0	0.100	10000.0	0.00015	367.29	0.218	21.8338	22			
04122021a027.d	4.679	28434	SC-WI388	Sample	P1-A6	15.0	0.100	20000.0	0.000075	264.18	0.160	32.0974				
04122021a028.d	4.679	28434	SC-WI388	Sample	P1-A6	15.0	0.100	20000.0	0.000075	257.74	0.157	31.3743	32			
04122021a029.d	4.679	718-2M47 0.050 pg/µL		Calibration	Vial 4	15.0				78.79						
04122021a030.d	4.679	28435	SD-WI388	Sample	P1-A7	15.0	0.100	20000.0	0.000075	395.84	0.234	46.8715				
04122021a031.d	4.679	28435	SD-WI388	Sample	P1-A7	15.0	0.100	20000.0	0.000075	393.61	0.233	46.6210	47			
04122021a032.d	-----	28420	SA-NJ249	Sample	P1-A8	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04122021a033.d	-----	28420	SA-NJ249	Sample	P1-A8	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04122021a034.d	4.679	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				147.65						
04122021a035.d	-----	28432	SA-WI388	Sample	P1-A9	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04122021a036.d	-----	28432	SA-WI388	Sample	P1-A9	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04122021a037.d	4.679	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				33.20						

Calculated LOD response at 0.0225 pg/µL= 18.25

Calculated LOQ response at 0.050 pg/µL= 67.26

"----" Denotes response below area threshold

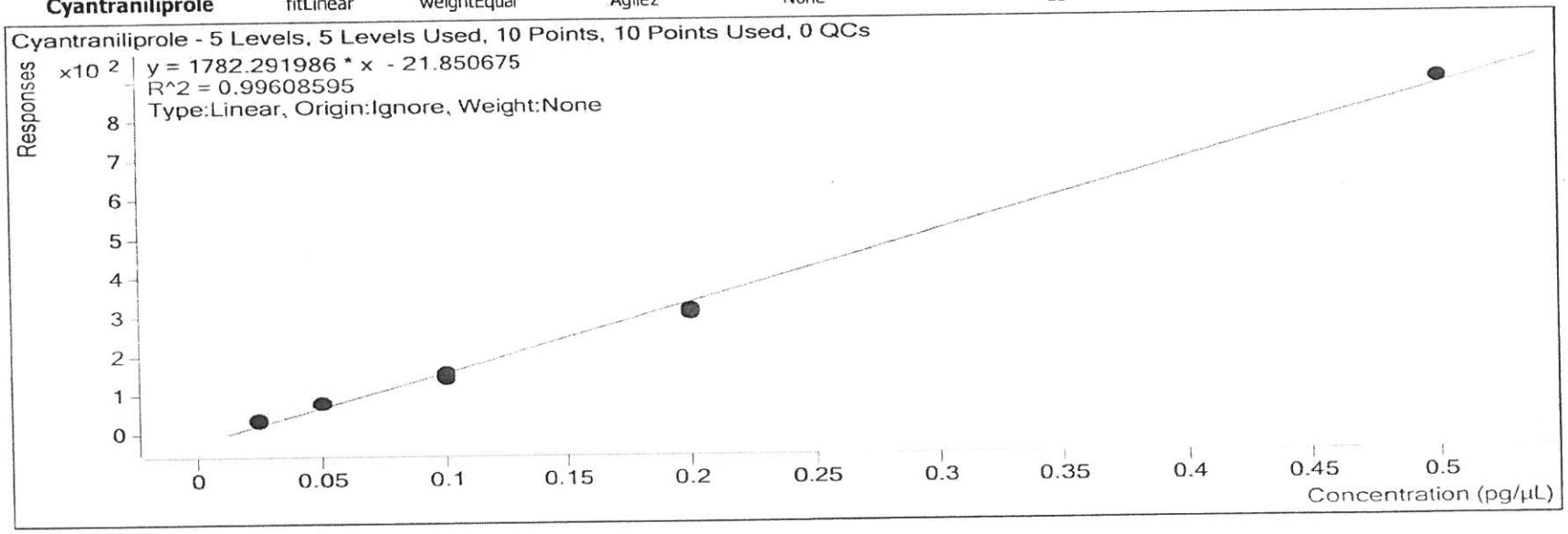
Struckthrough data not reported, dilution error, will re-run with proper dilution.

4/13/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\QuantResults\04122021a.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a010.d	Calibration	1	☑	888	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a011.d	Calibration	2	☑	317	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a019.d	Calibration	2	☑	307	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a012.d	Calibration	3	☑	143	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a024.d	Calibration	3	☑	156	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a034.d	Calibration	3	☑	148	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a013.d	Calibration	4	☑	81	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a029.d	Calibration	4	☑	79	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a014.d	Calibration	5	☑	36	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04122021\04122021a037.d	Calibration	5	☑	33	0.0250

Compound
Cyantraniliprole

Injection Date
4/13/2021

4/13/2021

LID#: 12401.20-CAR14, Dill (Seed) 50 ppm concurrent recovery rerun, extracted 4/12/2021

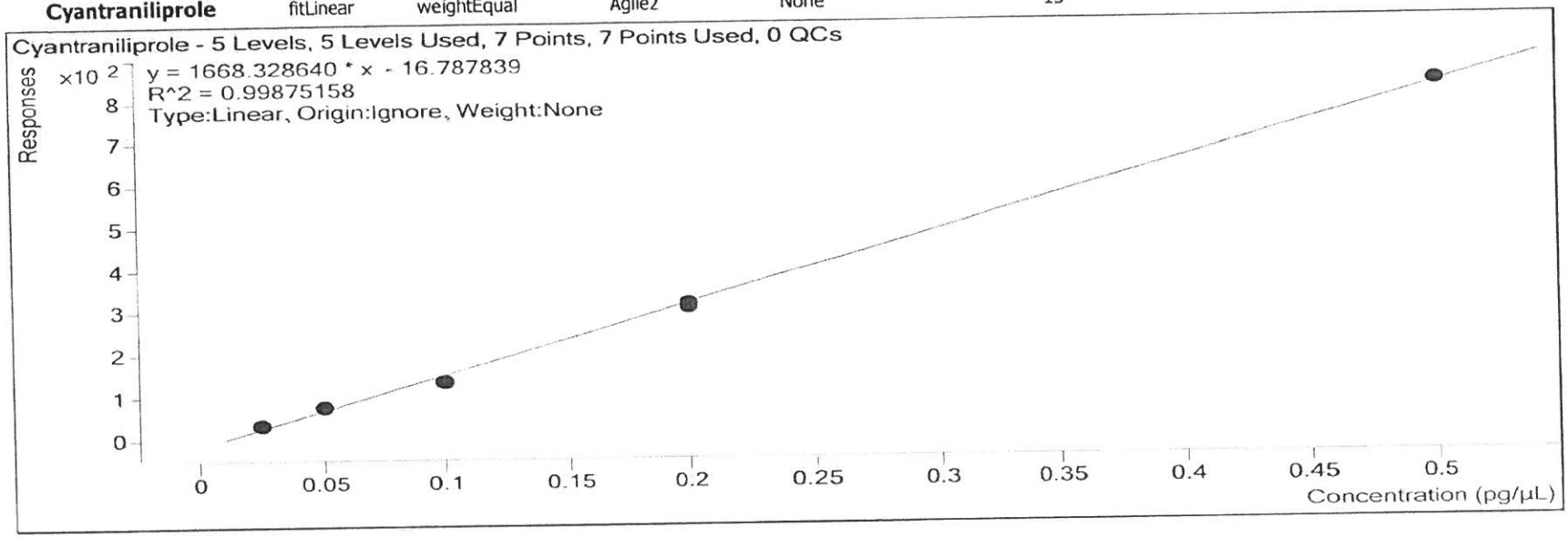
Data File	RT	SampleName	Sample Info	Sample Type	Vial Pos	Inj Vol (µL)	g	mL Vol	mg Inj	Resp	Conc (pg/µL)	ppm	Ave ppm	% Rec	Ave % Rec	Std Dev
04132021a001.d	4.672	Condition		Sample	P1-A1	15.0										
04132021a002.d	4.662	Condition		Sample	P1-A2	15.0										
04132021a003.d	4.666	Condition		Sample	P1-A1	15.0										
04132021a004.d	4.672	Condition		Sample	P1-A2	15.0										
04132021a005.d	4.672	Condition		Sample	P1-A1	15.0										
04132021a006.d	4.676	Condition		Sample	P1-A2	15.0										
04132021a007.d	4.676	Condition		Sample	P1-A1	15.0										
04132021a008.d	4.679	Condition		Sample	Vial 1	15.0										
04132021a009.d	4.679	Condition		Sample	Vial 1	15.0										
04132021a010.d	4.679	718-2M44 0.50 pg/µL		Calibration	Vial 1	15.0				824.41						
04132021a011.d	4.679	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				307.73						
04132021a012.d	4.683	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				133.46						
04132021a013.d	4.683	718-2M47 0.050 pg/µL		Calibration	Vial 4	15.0				74.32						
04132021a014.d	4.683	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				32.79						
04132021a015.d	4.686	28420C50R1	SA-NJ249	Sample	P1-A1	15.0	0.100	20000.0	0.000075	331.18	0.209	41.7149				
04132021a016.d	4.683	28420C50R1	SA-NJ249	Sample	P1-A1	15.0	0.100	20000.0	0.000075	329.80	0.208	41.5485	41.6	83%		
04132021a017.d	4.683	28420C50R2	SA-NJ249	Sample	P1-A2	15.0	0.100	20000.0	0.000075	379.57	0.238	47.5155				
04132021a018.d	4.686	28420C50R2	SA-NJ249	Sample	P1-A2	15.0	0.100	20000.0	0.000075	380.43	0.238	47.6189	47.6	95%	*	
04132021a019.d	4.683	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				312.94						
04132021a020.d	-----	28420	SA-NJ249	Sample	P1-A8	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04132021a021.d	-----	28420	SA-NJ249	Sample	P1-A8	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010	*		
04132021a022.d	4.683	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				31.99						

Calculated LOD response at 0.0225 pg/µL= 20.75
Calculated LOQ response at 0.050 pg/µL= 66.63
"-----" Denotes response below area threshold
*Data previously reported, data not reported from this set.

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\QuantResults\04132021a.batch.bin 4/13/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a010.d	Calibration	1	☑	824	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a011.d	Calibration	2	☑	308	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a019.d	Calibration	2	☑	313	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a012.d	Calibration	3	☑	133	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a013.d	Calibration	4	☑	74	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a014.d	Calibration	5	☑	33	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04132021\04132021a022.d	Calibration	5	☑	32	0.0250

Compound
Cyantraniliprole

Injection Date
6/3/2021

LID#: 12401.20-CAR14, Dill (Oil) WA*370 & WI388, extracted 6/3/2021

6/4/2021 NM

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	Ave % Rec	Std Dev
06032021a001.d	4.649	Condition		Sample	P1-A1	15.0										
06032021a002.d	4.656	Condition		Sample	P1-A2	15.0										
06032021a003.d	4.659	Condition		Sample	P1-A3	15.0										
06032021a004.d	4.659	Condition		Sample	P1-A1	15.0										
06032021a005.d	4.666	Condition		Sample	P1-A2	15.0										
06032021a006.d	4.659	Condition		Sample	P1-A3	15.0										
06032021a007.d	4.686	718-2M84 0.50 pg/µL		Calibration	Vial 1	15.0				842.53						
06032021a008.d	4.689	718-2M85 0.20 pg/µL		Calibration	Vial 2	15.0				330.11						
06032021a009.d	4.686	718-2M86 0.10 pg/µL		Calibration	Vial 3	15.0				169.81						
06032021a010.d	4.689	718-2M87 0.050 pg/µL		Calibration	Vial 4	15.0				78.60						
06032021a011.d	4.689	718-2M88 0.0250 pg/µL		Calibration	Vial 5	15.0				40.46						
06032021a012.d	4.662	28438C0.01R1	OA-WI388	Sample	P1-A1	15.0	0.100	20.0	0.0750	60.88	0.0388	0.00776				
06032021a013.d	4.666	28438C0.01R1	OA-WI388	Sample	P1-A1	15.0	0.100	20.0	0.0750	59.43	0.0379	0.00759	0.00767	77%		
06032021a014.d	4.666	28438C0.01R2	OA-WI388	Sample	P1-A2	15.0	0.100	20.0	0.0750	73.14	0.0460	0.00921				
06032021a015.d	4.669	28438C0.01R2	OA-WI388	Sample	P1-A2	15.0	0.100	20.0	0.0750	71.07	0.0448	0.00896	0.00908	91%		
06032021a016.d	4.689	718-2M87 0.050 pg/µL		Calibration	Vial 4	15.0				75.35						
06032021a017.d	4.669	28438C0.01R3	OA-WI388	Sample	P1-A3	15.0	0.100	20.0	0.0750	61.77	0.0393	0.00786				
06032021a018.d	4.669	28438C0.01R3	OA-WI388	Sample	P1-A3	15.0	0.100	20.0	0.0750	58.72	0.0375	0.00750	0.00768	77%	81%	8%
06032021a019.d	-----	28439	OT-WI388	Sample	P1-A4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
06032021a020.d	-----	28439	OT-WI388	Sample	P1-A4	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
06032021a021.d	4.689	718-2M87 0.050 pg/µL		Calibration	Vial 4	15.0				76.70						
06032021a022.d	-----	28411	OT-WA*370	Sample	P1-A5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
06032021a023.d	-----	28411	OT-WA*370	Sample	P1-A5	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
06032021a024.d	-----	28438 28410	OA-WI388	Sample	P1-A6	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
06032021a025.d	-----	28438 28410	OA-WI388	Sample	P1-A6	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
06032021a026.d	4.689	718-2M88 0.0250 pg/µL		Calibration	Vial 5	15.0				40.89						

Calculated LOD response at 0.0225 pg/µL= 33.31
Calculated LOQ response at 0.050 pg/µL= 79.86
"-----" Denotes response below area threshold

EE 5/27/2021 NM

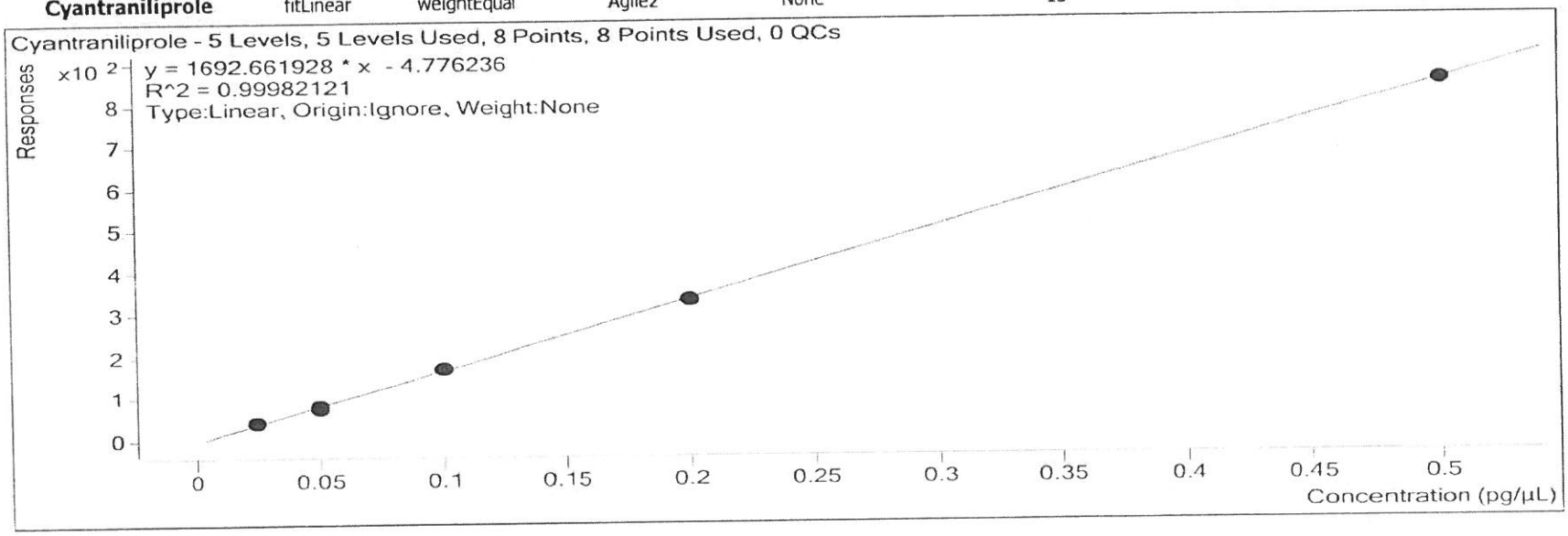
160

6/4/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\QuantResults\06032021a.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a007.d	Calibration	1	☑	843	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a008.d	Calibration	2	☑	330	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a009.d	Calibration	3	☑	170	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a010.d	Calibration	4	☑	79	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a016.d	Calibration	4	☑	75	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a021.d	Calibration	4	☑	77	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a011.d	Calibration	5	☑	40	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a026.d	Calibration	5	☑	41	0.0250

6/4/2021

Compound **IN-J9Z38** Injection Date **6/3/2021**

LID#: 12401.20-CAR14, Dill (Oil) WA*370 & WI388, extracted 6/3/2021

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	Ave % Rec	Std Dev
06032021a027.d	6.244	Condition		Sample	P1-A7	15.0										
06032021a028.d	6.244	Condition		Sample	P1-A8	15.0										
06032021a029.d	6.244	Condition		Sample	P1-A9	15.0										
06032021a030.d	6.244	718-2M84 0.50 pg/µL		Calibration	Vial 1	15.0				475.99						
06032021a031.d	6.244	718-2M85 0.20 pg/µL		Calibration	Vial 2	15.0				177.80						
06032021a032.d	6.244	718-2M86 0.10 pg/µL		Calibration	Vial 3	15.0				88.95						
06032021a033.d	6.244	718-2M87 0.050 pg/µL		Calibration	Vial 4	15.0				48.53						
06032021a034.d	6.244	718-2M88 0.0250 pg/µL		Calibration	Vial 5	15.0				27.70						
06032021a035.d	6.244	718-2M89 0.010 pg/µL		Calibration	P1-C1	15.0				9.96						
06032021a036.d	6.244	28438C0.01R1	OA-WI388	Sample	P1-A7	15.0	0.100	40.0	0.0375	23.24	0.0244	0.00977				
06032021a037.d	6.237	28438C0.01R1	OA-WI388	Sample	P1-A7	15.0	0.100	40.0	0.0375	27.53	0.0290	0.0116	0.0107	107%		
06032021a038.d	6.244	28438C0.01R2	OA-WI388	Sample	P1-A8	15.0	0.100	40.0	0.0375	27.25	0.0287	0.0115				
06032021a039.d	6.244	28438C0.01R2	OA-WI388	Sample	P1-A8	15.0	0.100	40.0	0.0375	27.44	0.0289	0.0116	0.0115	115%		
06032021a040.d	6.244	718-2M88 0.0250 pg/µL		Calibration	Vial 5	15.0				27.27						
06032021a041.d	6.244	28438C0.01R3	OA-WI388	Sample	P1-A9	15.0	0.100	40.0	0.0375	26.57	0.0280	0.0112				
06032021a042.d	6.244	28438C0.01R3	OA-WI388	Sample	P1-A9	15.0	0.100	40.0	0.0375	30.96	0.0326	0.0130	0.0121	**121%**	114%	7%
06032021a043.d	-----	28439	OT-WI388	Sample	P1-B1	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010				
06032021a044.d	-----	28439	OT-WI388	Sample	P1-B1	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010	<0.010			
06032021a045.d	6.244	718-2M88 0.0250 pg/µL		Calibration	Vial 5	15.0				26.10						
06032021a046.d	-----	28411	OT-WA*370	Sample	P1-B2	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010				
06032021a047.d	-----	28411	OT-WA*370	Sample	P1-B2	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010	<0.010			
06032021a048.d	-----	28438 28410	OA-WI388	Sample	P1-B3	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010				
06032021a049.d	-----	28438 28410	OA-WI388	Sample	P1-B3	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010	<0.010			
06032021a050.d	6.244	718-2M89 0.010 pg/µL		Calibration	P1-C1	15.0				9.90						

GE 9/27/2021

Calculated LOD response at 0.009 pg/µL = 8.71

Calculated LOQ response at 0.0250 pg/µL = 23.78

"-----" Denotes response below area threshold

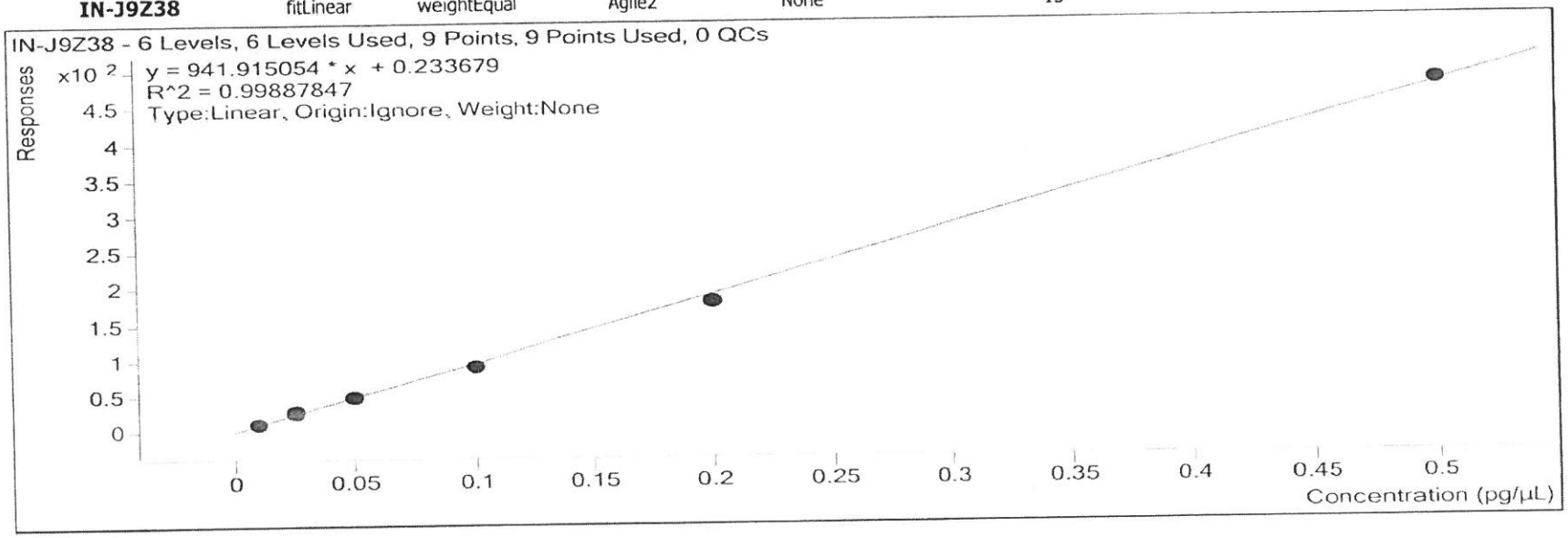
Recovery in **BOLD** were >70%, will notify Study Director

6/4/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\QuantResults\06032021m.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a030.d	Calibration	1	☑	476	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a031.d	Calibration	2	☑	178	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a032.d	Calibration	3	☑	89	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a033.d	Calibration	4	☑	49	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a034.d	Calibration	5	☑	28	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a040.d	Calibration	5	☑	27	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a045.d	Calibration	5	☑	26	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a035.d	Calibration	6	☑	10	0.0100
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06032021\06032021a050.d	Calibration	6	☑	10	0.0100

Compound: **Cyantraniliprole** Injection Date: **4/21/2021**

LID#: 12401.20-CAR14, Dill (Fresh) Storage Stability (916 Days), extracted 4/21/2021

4/22/2021 M

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	Ave % Rec	Ave % Rec	Std Dev
04212021a001.d	4.642	Condition		Sample	P1-A1	15.0										
04212021a002.d	4.662	Condition		Sample	P1-A2	15.0										
04212021a003.d	4.669	Condition		Sample	P1-A3	15.0										
04212021a004.d	4.676	Condition		Sample	P1-A1	15.0										
04212021a005.d	4.683	Condition		Sample	P1-A2	15.0										
04212021a006.d	4.683	Condition		Sample	P1-A3	15.0										
04212021a007.d	4.683	Condition		Sample	P1-A1	15.0										
04212021a008.d	4.683	Condition		Sample	P1 A2	15.0										
04212021a009.d	4.683	Condition		Sample	P1-A3	15.0										
04212021a010.d	4.683	718-2M49 0.50 pg/µL		Calibration	Vial 1	15.0				788.67						
04212021a011.d	4.686	718-2M50 0.20 pg/µL		Calibration	Vial 2	15.0				325.45						
04212021a012.d	4.686	718-2M51 0.10 pg/µL		Calibration	Vial 3	15.0				156.45						
04212021a013.d	4.689	718-2M52 0.050 pg/µL		Calibration	Vial 4	15.0				79.67						
04212021a014.d	4.689	718-2M53 0.0250 pg/µL		Calibration	Vial 5	15.0				37.78						
04212021a015.d	4.686	28440C0.1R2	FA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	159.31	0.100	0.1001				
04212021a016.d	4.686	28440C0.1R2	FA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	155.41	0.0977	0.0977	0.0989	99%		
04212021a017.d	4.686	28440C0.1R3	FA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	154.98	0.0974	0.0974				
04212021a018.d	4.686	28440C0.1R3	FA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	152.29	0.0957	0.0957	0.0965	97%		
04212021a019.d	4.686	718-2M50 0.20 pg/µL*		Calibration	Vial 2	15.0				320.43						
04212021a020.d	4.686	28440C0.1R4	FA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	168.60	0.106	0.1060				
04212021a021.d	4.686	28440C0.1R4	FA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	166.73	0.105	0.1048	0.105	105%	100%	5%
04212021a022.d	4.689	28440S0.1R1	FA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	175.79	0.111	0.1105				
04212021a023.d	4.686	28440S0.1R1	FA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	175.78	0.111	0.1105	0.111	109%		
04212021a024.d	4.686	718-2M51 0.10 pg/µL*		Calibration	Vial 3	15.0				161.52						
04212021a025.d	4.686	28440S0.1R2	FA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	131.00	0.0822	0.0822				
04212021a026.d	4.686	28440S0.1R2	FA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	130.08	0.0817	0.0817	0.0819	81%		
04212021a027.d	4.686	28440S0.1R3	FA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	119.56	0.0750	0.0750				
04212021a028.d	4.686	28440S0.1R3	FA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	118.20	0.0742	0.0742	0.0746	73%	88%	19%
04212021a029.d	4.683	718-2M52 0.050 pg/µL*		Calibration	Vial 4	15.0				76.09						
04212021a030.d	-----	28440	FA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04212021a031.d	-----	28440	FA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04212021a032.d	4.683	718-2M53 0.0250 pg/µL*		Calibration	Vial 5	15.0				40.21						

Calculated LOD response at 0.0225 pg/µL= 36.42

Calculated LOQ response at 0.050 pg/µL= 79.96

"-----" Denotes response below area threshold

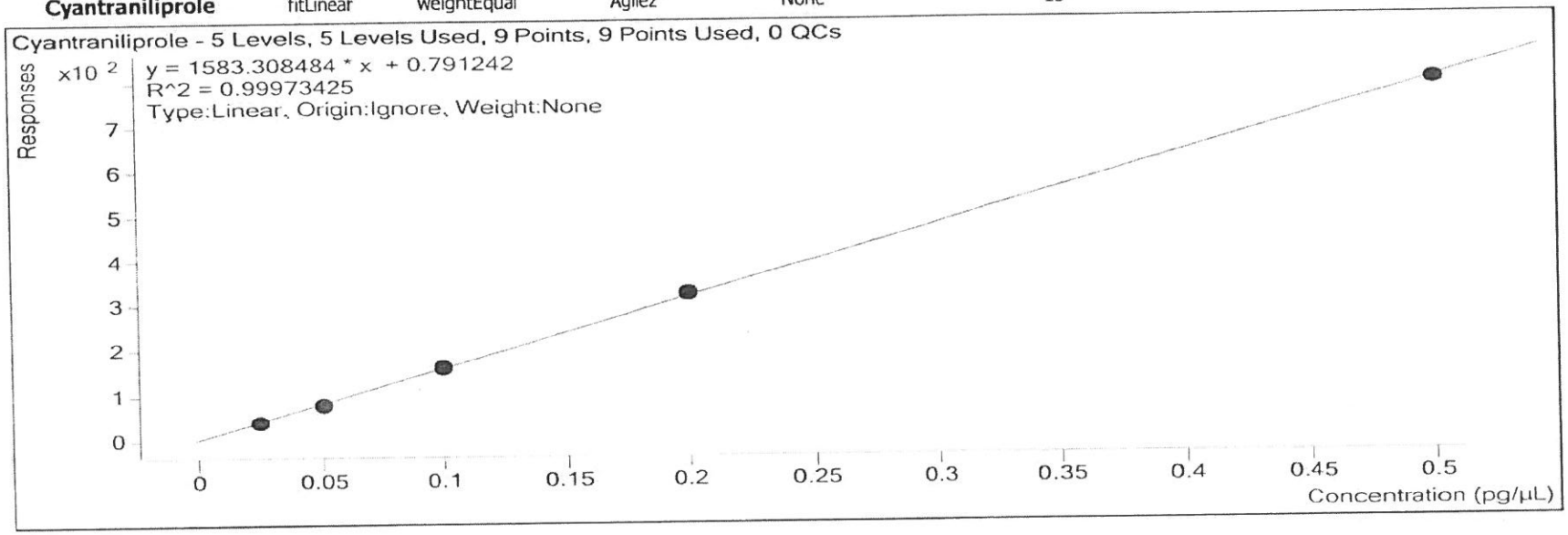
* At the time of injection the wrong standard ID was applied from the worklist, the correct standard ID was applied in this worksheet prior to printing of the summary page and chromatograms.

4/22/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\QuantResults\04212021a.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a010.d	Calibration	1	☑	789	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a011.d	Calibration	2	☑	325	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a019.d	Calibration	2	☑	320	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a012.d	Calibration	3	☑	156	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a024.d	Calibration	3	☑	162	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a013.d	Calibration	4	☑	80	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a029.d	Calibration	4	☑	76	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a014.d	Calibration	5	☑	38	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04212021\04212021a032.d	Calibration	5	☑	40	0.0250

Compound
Cyantraniliprole

Injection Date
5/26/2021

LID#: 12401.20-CAR14, Dill (Dry) Storage Stability (951 Days), extracted 5/26/2021

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	Ave % Rec	Std Dev
05262021p001.d	4.683	Condition		Sample	P1-A1	15.0										
05262021p002.d	4.679	Condition		Sample	P1-A2	15.0										
05262021p003.d	4.679	Condition		Sample	P1-A3	15.0										
05262021p004.d	4.679	Condition		Sample	P1-A1	15.0										
05262021p005.d	4.679	Condition		Sample	P1-A2	15.0										
05262021p006.d	4.679	Condition		Sample	P1-A3	15.0										
05262021p007.d	4.683	Condition		Sample	P1-A1	15.0										
05262021p008.d	4.679	Condition		Sample	P1-A2	15.0										
05262021p009.d	4.683	Condition		Sample	P1-A3	15.0										
05262021p010.d	4.683	Condition		Sample	Vial 1	15.0										
05262021p011.d	4.683	718-2M69 0.50 pg/µL		Calibration	Vial 1	15.0				865.98						
05262021p012.d	4.683	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				333.67						
05262021p013.d	4.683	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				176.03						
05262021p014.d	4.683	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				73.38						
05262021p015.d	4.683	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				44.36						
05262021p016.d	4.686	28444C0.1R4	DA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	155.13	0.0921	0.0921				
05262021p017.d	4.686	28444C0.1R4	DA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	154.91	0.0920	0.0920	0.0920	92%		
05262021p018.d	4.683	28444C0.1R5	DA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	138.62	0.0825	0.0825				
05262021p019.d	4.686	28444C0.1R5	DA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	136.85	0.0815	0.0815	0.0820	82%		
05262021p020.d	4.683	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				177.26						
05262021p021.d	4.683	28444C0.1R6	DA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	164.20	0.0974	0.0974				
05262021p022.d	4.683	28444C0.1R6	DA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	162.48	0.0964	0.0964	0.0969	97%	90%	8%
05262021p023.d	4.683	28444S0.1R10	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	132.66	0.0791	0.0791				
05262021p024.d	4.683	28444S0.1R10	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	133.01	0.0793	0.0793	0.0792	78%		
05262021p025.d	4.686	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				323.89						
05262021p026.d	4.683	28444S0.1R11	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	152.57	0.0906	0.0906				
05262021p027.d	4.683	28444S0.1R11	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	151.86	0.0902	0.0902	0.0904	89%		
05262021p028.d	4.683	28444S0.1R12	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	128.53	0.0767	0.0767				
05262021p029.d	4.683	28444S0.1R12	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	133.79	0.0797	0.0797	0.0782	77%	81%	7%
05262021p030.d	4.683	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				172.52						
05262021p031.d	-----	28444	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05262021p032.d	-----	28444	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05262021p033.d	4.683	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				42.24						

Calculated LOD response at 0.0225 pg/µL= 34.96
Calculated LOQ response at 0.050 pg/µL= 82.44
"-----" Denotes response below area threshold
Storage Stability samples were fortified at 0.1017 ppm

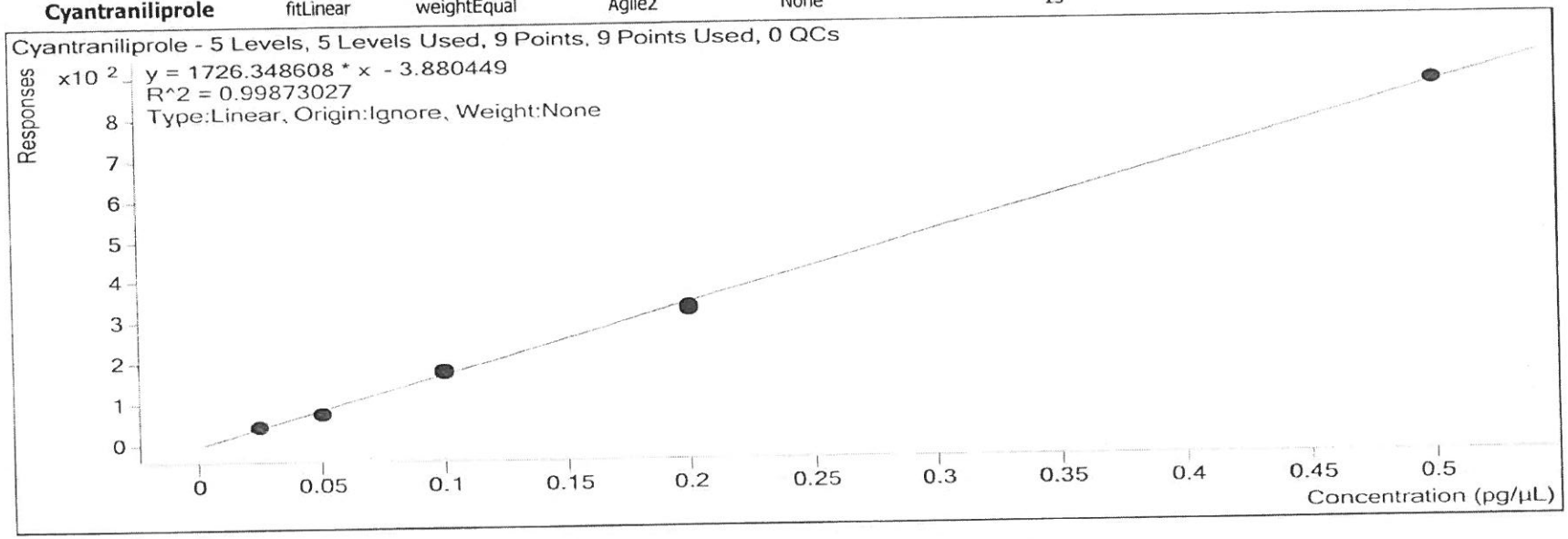
Reprinted
with corrections
Initials
Date 8/18/2021

5/27/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\QuantResults\05262021p.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p011.d	Calibration	1	☑	866	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p012.d	Calibration	2	☑	334	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p025.d	Calibration	2	☑	324	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p013.d	Calibration	3	☑	176	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p020.d	Calibration	3	☑	177	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p030.d	Calibration	3	☑	173	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p014.d	Calibration	4	☑	73	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p015.d	Calibration	5	☑	44	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021p033.d	Calibration	5	☑	42	0.0250

Compound **IN-J9Z38** Injection Date **5/26/2021**

LID#: 12401.20-CAR14, Dill (Dry) Storage Stability (951 Days), extracted 5/26/2021

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	Ave % Rec	Std Dev
05262021m001.d	1.602	Condition		Sample	P1-A1	15.0										
05262021m002.d	1.609	Condition		Sample	P1-A2	15.0										
05262021m003.d	1.615	Condition		Sample	P1-A3	15.0										
05262021m004.d	1.615	Condition		Sample	P1-A1	15.0										
05262021m005.d	1.615	Condition		Sample	P1-A2	15.0										
05262021m006.d	1.615	Condition		Sample	P1-A3	15.0										
05262021m007.d	1.622	718-2M69 0.50 pg/µL		Calibration	Vial 1	15.0				457.54						
05262021m008.d	1.622	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				187.51						
05262021m009.d	1.622	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				93.70						
05262021m010.d	1.622	718-2M72 0.050 pg/µL		Calibration	Vial 4	15.0				47.23						
05262021m011.d	1.622	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				26.65						
05262021m012.d	1.622	28444C0.1R4	DA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	96.03	0.105	0.1048				
05262021m013.d	1.629	28444C0.1R4	DA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	97.06	0.106	0.1059	0.105	105%		
05262021m014.d	1.629	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				176.26						
05262021m015.d	1.622	28444C0.1R5	DA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	91.54	0.0998	0.0998				
05262021m016.d	1.622	28444C0.1R5	DA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	91.15	0.0994	0.0994	0.0996	100%		
05262021m017.d	1.629	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				89.21						
05262021m018.d	1.629	28444C0.1R6	DA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	89.25	0.0973	0.0973				
05262021m019.d	1.629	28444C0.1R6	DA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	94.27	0.103	0.1028	0.100	100%	102%	3%
05262021m020.d	1.629	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				177.15						
05262021m021.d	1.629	28444S0.1R10	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	103.69	0.113	0.1132				
05262021m022.d	1.629	28444S0.1R10	DA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	98.41	0.107	0.1074	0.110	106%		
05262021m023.d	1.629	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				95.16						
05262021m024.d	1.629	28444S0.1R11	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	94.01	0.103	0.1025				
05262021m025.d	1.629	28444S0.1R11	DA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	99.59	0.109	0.1087	0.106	102%		
05262021m026.d	1.629	718-2M70 0.20 pg/µL		Calibration	Vial 2	15.0				181.02						
05262021m027.d	1.629	28444S0.1R12	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	97.80	0.107	0.1067				
05262021m028.d	1.629	28444S0.1R12	DA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	96.28	0.105	0.1050	0.106	102%	103%	3%
05262021m029.d	1.629	718-2M71 0.10 pg/µL		Calibration	Vial 3	15.0				89.80						
05262021m030.d	-----	28444	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
05262021m031.d	-----	28444	DA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
05262021m032.d	1.636	718-2M73 0.0250 pg/µL		Calibration	Vial 5	15.0				23.84						

Calculated LOD response at 0.0225 pg/µL= 21.34

Calculated LOQ response at 0.050 pg/µL= 46.31

"-----" Denotes response below area threshold

Storage Stability samples were fortified at 0.1039 ppm

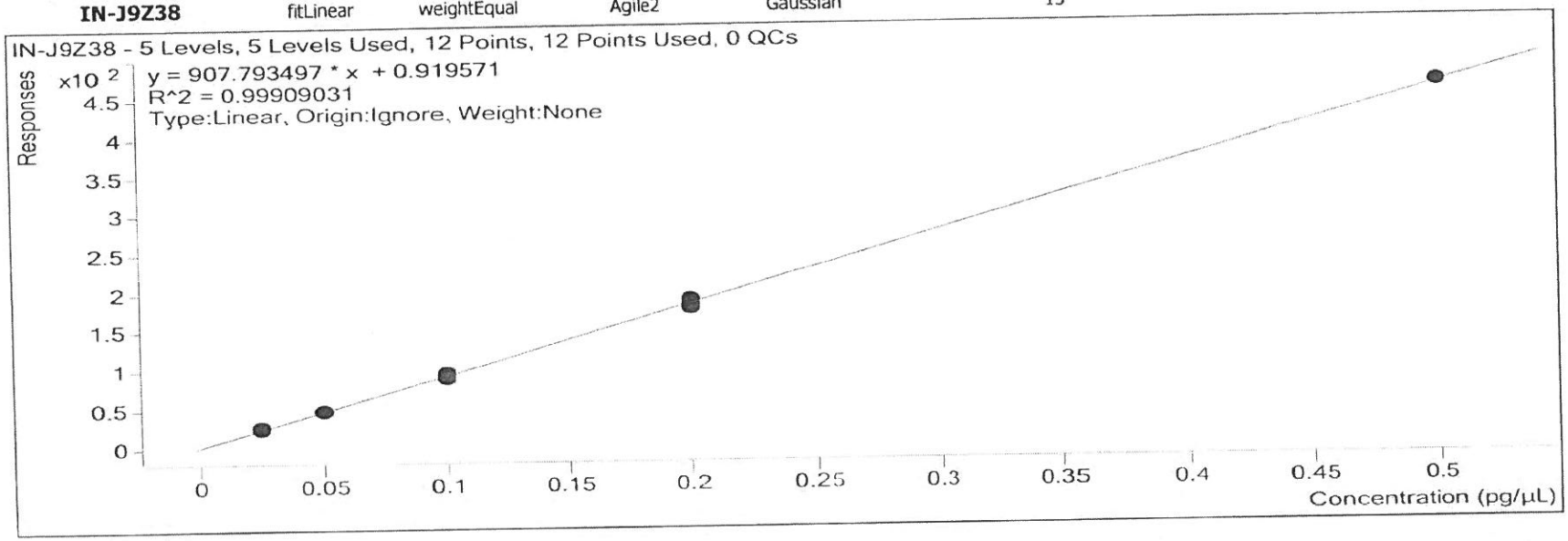
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Date 8/18/2021

5/26/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\QuantResults\05262021m.batch.bin

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	Gaussian	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m007.d	Calibration	1	☑	458	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m008.d	Calibration	2	☑	188	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m014.d	Calibration	2	☑	176	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m020.d	Calibration	2	☑	177	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m026.d	Calibration	2	☑	181	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m009.d	Calibration	3	☑	94	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m017.d	Calibration	3	☑	89	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m023.d	Calibration	3	☑	95	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m029.d	Calibration	3	☑	90	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m010.d	Calibration	4	☑	47	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m011.d	Calibration	5	☑	27	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\05262021\05262021m032.d	Calibration	5	☑	24	0.0250

Compound: **Cyantraniliprole** Injection Date: **4/15/2021**

LID#: 12401.20-CAR14, Dill (Seed) Storage Stability (910 Days), extracted 4/15/2021

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	Ave % Rec	Ave % Rec	Std Dev
04152021a001.d	4.662	Condition		Sample	P1-A1	15.0										
04152021a002.d	4.669	Condition		Sample	P1-A2	15.0										
04152021a003.d	4.672	Condition		Sample	P1-A3	15.0										
04152021a004.d	4.676	Condition		Sample	P1-A1	15.0										
04152021a005.d	4.679	Condition		Sample	P1-A2	15.0										
04152021a006.d	4.679	Condition		Sample	P1-A3	15.0										
04152021a007.d	4.679	Condition		Sample	P1-A1	15.0										
04152021a008.d	4.683	Condition		Sample	Vial 1	15.0										
04152021a009.d	4.683	Condition		Sample	Vial 1	15.0										
04152021a010.d	4.683	718-2M44 0.50 pg/µL		Calibration	Vial 1	15.0				872.05						
04152021a011.d	4.683	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				314.27						
04152021a012.d	4.683	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				173.61						
04152021a013.d	4.686	718-2M47 0.050 pg/µL		Calibration	Vial 4	15.0				72.96						
04152021a014.d	4.683	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				43.92						
04152021a015.d	4.683	28448C0.1R2	SA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	171.76	0.104	0.1042				
04152021a016.d	4.683	28448C0.1R2	SA-FL136	Sample	P1-A1	15.0	0.100	100.0	0.0150	173.01	0.105	0.1050	0.105	105%		
04152021a017.d	4.683	28448C0.1R3	SA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	173.49	0.105	0.1052				
04152021a018.d	4.683	28448C0.1R3	SA-FL136	Sample	P1-A2	15.0	0.100	100.0	0.0150	169.25	0.103	0.1028	0.104	104%		
04152021a019.d	4.683	718-2M45 0.20 pg/µL		Calibration	Vial 2	15.0				326.81						
04152021a020.d	4.683	28448C0.1R4	SA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	143.45	0.0880	0.0880				
04152021a021.d	4.683	28448C0.1R4	SA-FL136	Sample	P1-A3	15.0	0.100	100.0	0.0150	137.47	0.0846	0.0846	0.0863	86%	98%	10%
04152021a022.d	4.683	28448S0.1R19	SA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	143.18	0.0878	0.0878				
04152021a023.d	4.686	28448S0.1R19	SA-FL136	Sample	P1-A4	15.0	0.100	100.0	0.0150	141.28	0.0868	0.0868	0.0873	86%		
04152021a024.d	4.679	718-2M46 0.10 pg/µL		Calibration	Vial 3	15.0				177.33						
04152021a025.d	4.683	28448S0.1R20	SA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	158.60	0.0967	0.0967				
04152021a026.d	4.683	28448S0.1R20	SA-FL136	Sample	P1-A5	15.0	0.100	100.0	0.0150	157.07	0.0958	0.0958	0.0963	95%		
04152021a027.d	4.683	28448S0.1R21	SA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	140.91	0.0865	0.0865				
04152021a028.d	4.679	28448S0.1R21	SA-FL136	Sample	P1-A6	15.0	0.100	100.0	0.0150	130.29	0.0805	0.0805	0.0835	82%	88%	6%
04152021a029.d	4.683	718-2M47 0.050 pg/µL		Calibration	Vial 4	15.0				63.11						
04152021a030.d	-----	28448	SA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
04152021a031.d	-----	28448	SA-FL136	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
04152021a032.d	4.679	718-2M48 0.0250 pg/µL		Calibration	Vial 5	15.0				44.95						

Calculated LOD response at 0.0225 pg/µL= 29.32

Calculated LOQ response at 0.050 pg/µL= 77.24

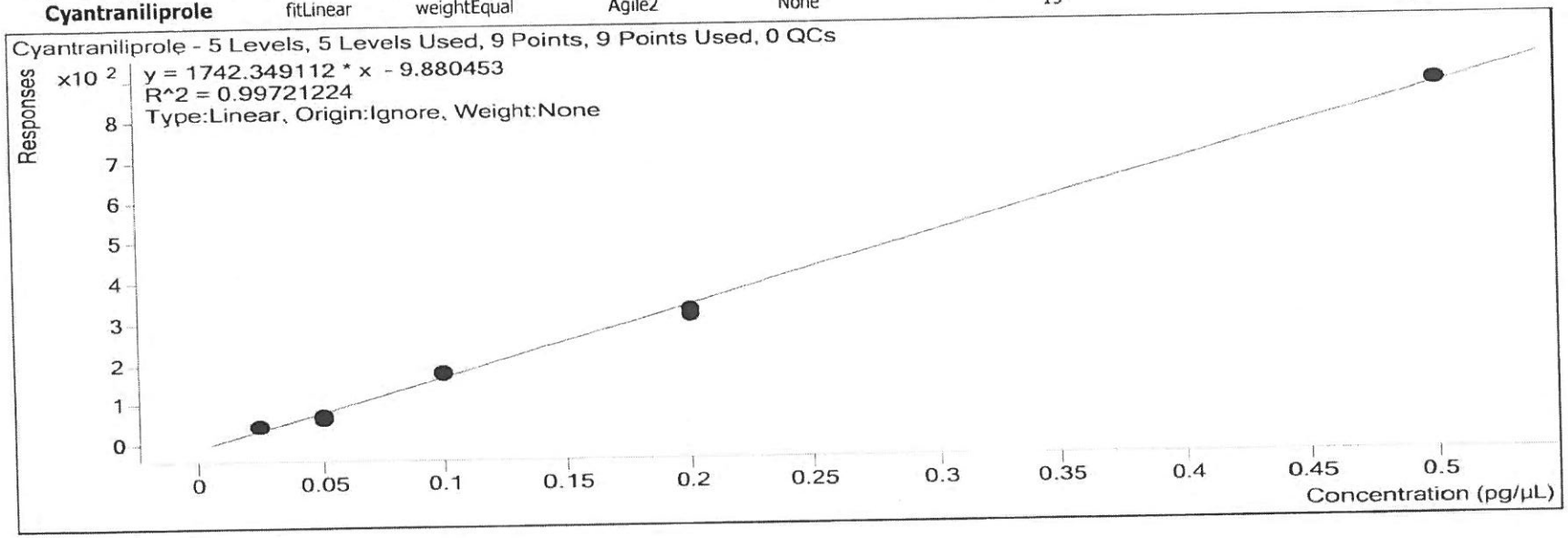
"-----" Denotes response below area threshold

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Date 4/21/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\QuantResults\04152021a.batch.bin 4/16/2021

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a010.d	Calibration	1	☑	872	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a011.d	Calibration	2	☑	314	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a019.d	Calibration	2	☑	327	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a012.d	Calibration	3	☑	174	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a024.d	Calibration	3	☑	177	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a013.d	Calibration	4	☑	73	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a029.d	Calibration	4	☑	63	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a014.d	Calibration	5	☑	44	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\04152021\04152021a032.d	Calibration	5	☑	45	0.0250

Compound
Cyantraniliprole

Injection Date
6/17/2021

LID#: 12401.20-CAR14, Dill (Oil) Storage Stability (930 Days), extracted 6/17/2021

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	Ave % Rec	Std Dev
06032021a001.d	4.666	Condition		Sample	P1-A1	15.0										
06032021a002.d	4.662	Condition		Sample	P1-A2	15.0										
06032021a003.d	4.662	Condition		Sample	P1-A3	15.0										
06032021a004.d	4.662	Condition		Sample	P1-A1	15.0										
06032021a005.d	4.666	Condition		Sample	P1-A2	15.0										
06032021a006.d	4.666	Condition		Sample	P1-A3	15.0										
06032021a007.d	4.669	718-2M95 0.50 pg/µL		Calibration	Vial 1	15.0				762.58						
06032021a008.d	4.672	718-2M96 0.20 pg/µL		Calibration	Vial 2	15.0				282.27						
06032021a009.d	4.672	718-2M97 0.10 pg/µL		Calibration	Vial 3	15.0				131.64						
06032021a010.d	4.669	718-2M98 0.050 pg/µL		Calibration	Vial 4	15.0				70.03						
06032021a011.d	4.669	718-2M99 0.0250 pg/µL		Calibration	Vial 5	15.0				35.95						
06032021a012.d	-----	718-2M100 0.010 pg/µL	(IN-J9Z38 Only)	Calibration	P1-C1	15.0				-----						
06032021a013.d	4.669	28410C0.1R1	OA-WA*370	Sample	P1-A1	15.0	0.100	100.0	0.0150	141.74	0.101	0.1007				
06032021a014.d	4.669	28410C0.1R1	OA-WA*370	Sample	P1-A1	15.0	0.100	100.0	0.0150	135.62	0.0967	0.0967	0.0987	99%		
06032021a015.d	4.666	28410C0.1R2	OA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	122.01	0.0878	0.0878				
06032021a016.d	4.666	28410C0.1R2	OA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	120.44	0.0868	0.0868	0.0873	87%		
06032021a017.d	4.669	718-2M96 0.20 pg/µL		Calibration	Vial 2	15.0				282.28						
06032021a018.d	4.666	28410C0.1R3	OA-WA*370	Sample	P1-A3	15.0	0.100	100.0	0.0150	109.42	0.0796	0.0796				
06032021a019.d	4.666	28410C0.1R3	OA-WA*370	Sample	P1-A3	15.0	0.100	100.0	0.0150	108.43	0.0790	0.0790	0.0793	79%	88%	10%
06032021a020.d	4.666	28410S0.1R28	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	111.26	0.0808	0.0808				
06032021a021.d	4.666	28410S0.1R28	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	111.71	0.0811	0.0811	0.0810	80%		
06032021a022.d	4.666	718-2M97 0.10 pg/µL		Calibration	Vial 3	15.0				129.83						
06032021a023.d	4.666	28410S0.1R29	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	108.34	0.0789	0.0789				
06032021a024.d	4.666	28410S0.1R29	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	107.88	0.0786	0.0786	0.0788	77%		
06032021a025.d	4.666	28410S0.1R30	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	109.54	0.0797	0.0797				
06032021a026.d	4.662	28410S0.1R30	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	109.66	0.0798	0.0798	0.0797	78%	78%	1%
06032021a027.d	4.669	718-2M98 0.050 pg/µL		Calibration	Vial 4	15.0				73.45						
06032021a028.d	-----	28410 (Cyan)	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010				
06032021a029.d	-----	28410 (Cyan)	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	-----	<0.050	<0.010	<0.010			
06032021a030.d	-----	28410 (IN-J9Z38)	OA-WA*370	Sample	P1-A8	15.0	0.100	40.0	0.0375	----- *						
06032021a031.d	-----	28410 (IN-J9Z38)	OA-WA*370	Sample	P1-A8	15.0	0.100	40.0	0.0375	----- *						
06032021a032.d	4.669	718-2M99 0.0250 pg/µL		Calibration	Vial 5	15.0				32.31						

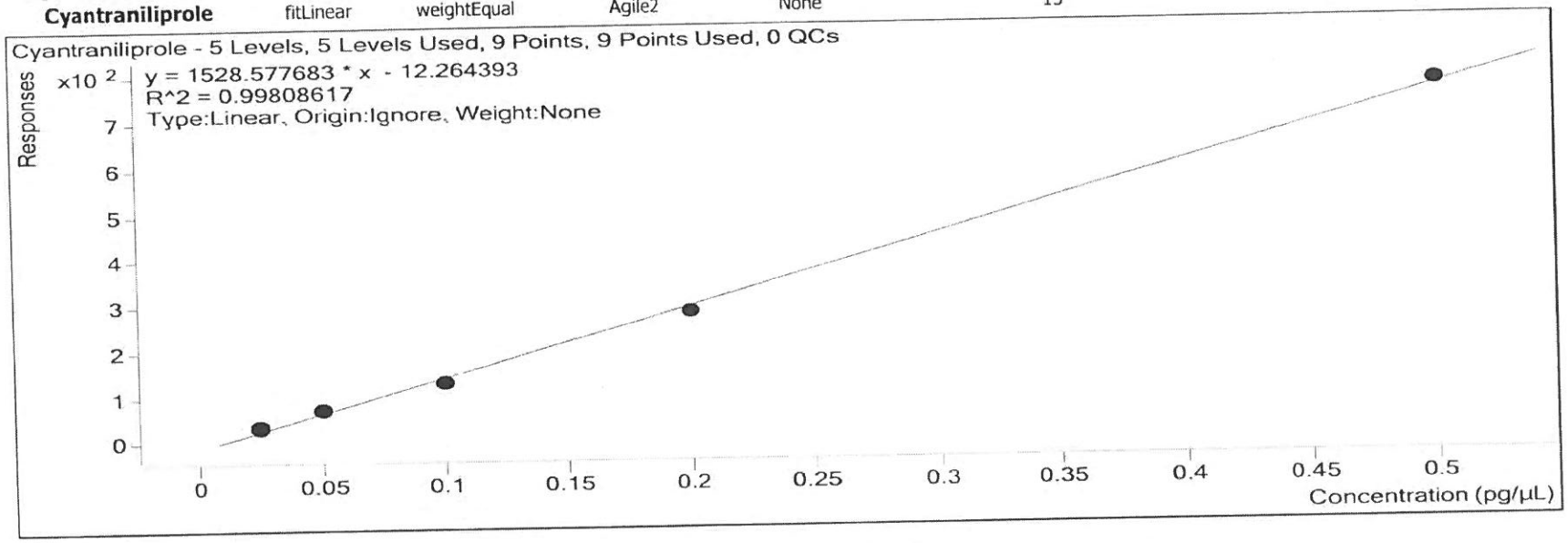
Calculated LOD response at 0.0225 pg/µL= 22.13
Calculated LOQ response at 0.050 pg/µL= 64.16
"-----" Denotes response below area threshold
* Control was further diluted for IN-J9Z38 analysis
Storage Stability samples were fortified at 0.1017 ppm
Note: Data file names were inadvertently not updated prior to analysis. Data files are stored in the correct folder with correct data and time stamps.

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Initials MM
Date 8/18/2021

Batch Data Path D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\QuantResults\06172021a.batch.bin 6/18/2021 ms

Calibration Info

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
Cyantraniliprole	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a007.d	Calibration	1	☑	763	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a008.d	Calibration	2	☑	282	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a017.d	Calibration	2	☑	282	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a009.d	Calibration	3	☑	132	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a022.d	Calibration	3	☑	130	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a010.d	Calibration	4	☑	70	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a027.d	Calibration	4	☑	73	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a011.d	Calibration	5	☑	36	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a032.d	Calibration	5	☑	32	0.0250

Compound **IN-J9Z38** Injection Date **6/17/2021**

LID#: 12401.20-CAR14, Dill (Oil) Storage Stability (930 Days), extracted 6/17/2021

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	Ave % Rec	Std Dev
06032021a001.d	6.224	Condition		Sample	P1-A1	15.0										
06032021a002.d	6.224	Condition		Sample	P1-A2	15.0										
06032021a003.d	6.224	Condition		Sample	P1-A3	15.0										
06032021a004.d	6.224	Condition		Sample	P1-A1	15.0										
06032021a005.d	6.230	Condition		Sample	P1-A2	15.0										
06032021a006.d	6.230	Condition		Sample	P1-A3	15.0										
06032021a007.d	6.230	718-2M95 0.50 pg/µL		Calibration	Vial 1	15.0				469.87						
06032021a008.d	6.230	718-2M96 0.20 pg/µL		Calibration	Vial 2	15.0				178.21						
06032021a009.d	6.230	718-2M97 0.10 pg/µL		Calibration	Vial 3	15.0				101.81						
06032021a010.d	6.230	718-2M98 0.050 pg/µL		Calibration	Vial 4	15.0				49.55						
06032021a011.d	6.224	718-2M99 0.0250 pg/µL		Calibration	Vial 5	15.0				25.72						
06032021a012.d	6.224	718-2M100 0.010 pg/µL		Calibration	P1-C1	15.0				10.13						
06032021a013.d	6.224	28410C0.1R1	OA-WA*370	Sample	P1-A1	15.0	0.100	100.0	0.0150	93.69	0.0986	0.0986				
06032021a014.d	6.224	28410C0.1R1	OA-WA*370	Sample	P1-A1	15.0	0.100	100.0	0.0150	87.99	0.0924	0.0924	0.0955	95%		
06032021a015.d	6.224	28410C0.1R2	OA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	91.63	0.0963	0.0963				
06032021a016.d	6.224	28410C0.1R2	OA-WA*370	Sample	P1-A2	15.0	0.100	100.0	0.0150	88.00	0.0924	0.0924	0.0944	94%		
06032021a017.d	6.224	718-2M96 0.20 pg/µL		Calibration	Vial 2	15.0				185.53						
06032021a018.d	6.224	28410C0.1R3	OA-WA*370	Sample	P1-A3	15.0	0.100	100.0	0.0150	96.11	0.101	0.1012				
06032021a019.d	6.224	28410C0.1R3	OA-WA*370	Sample	P1-A3	15.0	0.100	100.0	0.0150	101.36	0.107	0.1068	0.1040	104%	98%	5%
06032021a020.d	6.224	28410S0.1R28	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	76.05	0.0796	0.0796				
06032021a021.d	6.224	28410S0.1R28	OA-WA*370	Sample	P1-A4	15.0	0.100	100.0	0.0150	72.19	0.0754	0.0754	0.0775	75%		
06032021a022.d	6.224	718-2M97 0.10 pg/µL		Calibration	Vial 3	15.0				96.05						
06032021a023.d	6.224	28410S0.1R29	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	64.00	0.0666	0.0666				
06032021a024.d	6.217	28410S0.1R29	OA-WA*370	Sample	P1-A5	15.0	0.100	100.0	0.0150	71.55	0.0747	0.0747	0.0707	68%		
06032021a025.d	6.224	28410S0.1R30	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	69.93	0.0730	0.0730				
06032021a026.d	6.217	28410S0.1R30	OA-WA*370	Sample	P1-A6	15.0	0.100	100.0	0.0150	66.02	0.0688	0.0688	0.0709	68%	70%	4%
06032021a027.d	6.224	718-2M98 0.050 pg/µL		Calibration	Vial 4	15.0				46.78						
06032021a028.d	-----	28410 (Cyan)	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	----- *						
06032021a029.d	-----	28410 (Cyan)	OA-WA*370	Sample	P1-A7	15.0	0.100	20.0	0.0750	----- *						
06032021a030.d	-----	28410 (IN-J9Z38)	OA-WA*370	Sample	P1-A8	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010				
06032021a031.d	-----	28410 (IN-J9Z38)	OA-WA*370	Sample	P1-A8	15.0	0.100	40.0	0.0375	-----	<0.0250	<0.010	<0.010			
06032021a032.d	6.224	718-2M99 0.0250 pg/µL		Calibration	Vial 5	15.0				28.27						

Calculated LOD response at 0.009 pg/µL= 10.50

Calculated LOQ response at 0.0250 pg/µL= 25.37

"-----" Denotes response below area threshold

* Control was concentrated for cyantraniliprole analysis

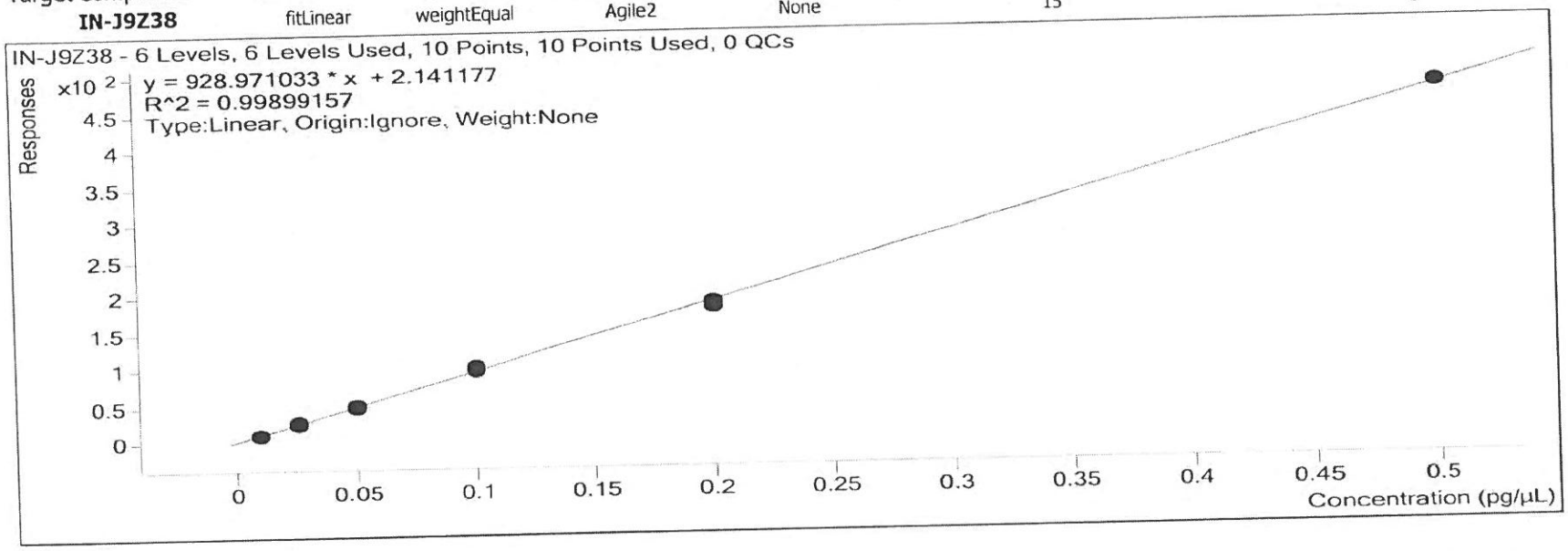
Storage Stability samples were fortified at 0.1039 ppm

Note: Data file names were inadvertently not updated prior to analysis. Data files are stored in the correct folder with correct data and time stamps.

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Date 8/18/2021

6/18/2021 MS

Target Compound	CurveFit	Weighting	Integrator	Smoothing	SmoothingFunctionWidth	SmoothingGaussianWidth
IN-J9Z38	fitLinear	weightEqual	Agile2	None	15	5



Calibration STD

	Cal Type	Level	Enabled	Response	Exp Conc
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a007.d	Calibration	1	☑	470	0.5000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a008.d	Calibration	2	☑	178	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a017.d	Calibration	2	☑	186	0.2000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a009.d	Calibration	3	☑	102	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a022.d	Calibration	3	☑	96	0.1000
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a010.d	Calibration	4	☑	50	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a027.d	Calibration	4	☑	47	0.0500
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a011.d	Calibration	5	☑	26	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a032.d	Calibration	5	☑	28	0.0250
D:\MassHunter\Cyantraniliprole\12401_Dill\Falcon\Data\06172021\06032021a012.d	Calibration	6	☑	10	0.0100

ATTACHMENT C: STANDARD USE FORMS

IR-4 Laboratory IR-4 North Central Region Research Center Michigan State University

ANALYTICAL REFERENCE STANDARD RECORD AND USE LOG

Part 1, Page 373

Common Name	Cyantraniliprole
Trade Name	DPX-HGW 86 - 847
CAS #	736994-63-1
Company/Source	Dupont
Contact Person/Phone #	Sheldon Sumpter sheldon.sumpter@fmc.com
Lot Number/ID	D100103-555
Purity	98.9%
Characterization	Company
Date Received	15 Jun 2018
Expiration Date	01 Aug 2030
Recertification/Exp Date	
Serial Number Assigned	ARS- 445 B
Storage Location /°C	#2, < 0°
Date Opened	
Initial Weight, g	50.2 mg
Date Discarded/Consumed	

This is a true copy of the original.
Signature [signature] Date [illegible]

ARS Use

Amount Used, g	Balance Used	Log Vol, Pg	Date	Analyst's Initial
0.01028	AE240	Vol IV, 120	10 Oct 18	RC "Stock"

http://www.ir4.msu.edu/Files/Pdf/Form_1.pdf

IR-4 Laboratory IR-4 North Central Region Research Center Michigan State University

ANALYTICAL REFERENCE STANDARD RECORD AND USE LOG

Part 1, Page 374

Common Name	IN-J9238-003 (cyantraniliprole metabolite)
Trade Name	
CAS #	
Company/Source	DuPont
Contact Person/Phone #	Sheldon Sumpter sheldon.sumpter@fmc.com
Lot Number/ID	2000903-00405C
Purity	97.2% ~~(→94.9%) kg 28Dec20~~ (wrong page) kg 28Jan20
Characterization	Company
Date Received	15 Jun 2018
Expiration Date	22 Aug 2018
Recertification/Exp Date	~~(→9Dec19/31Dec21 % →2%) kg 31Jan20~~ (wrong page) kg 28Jan20
'erial Number Assigned	ARS- 4468
Storage Location /°C	#2 / <0°C
Date Opened	kg 01Mar2021 ← (6)
Initial Weight, g (1)	50.1 mg
Date Discarded/Consumed	

ARS Use

Amount Used, g	Balance Used	Log Vol, Pg	Date	Analyst's Initial
0.01069	AE240	IV, 120	10 Oct 18	RC "stock"

http://www.ir4.msu.edu/Files/Pdf/Form_1.pdf

IR-4 Laboratory IR-4 North Central Region Research Center Michigan State University

ANALYTICAL REFERENCE STANDARD RECORD AND USE LOG

Stock Solutions from ARS's

Part 2, Page 87

ARS Name			Cyantraniliprole		
ARS Serial Number			ARS- 445B		
Wt, g	Purity%	Corr Wt, g	0.01028	98.9	0.01016692
Serial Number Assigned			5445B-1		
Final Concentration, ppm			101.7		
Final Volume, mL			100		
Diluting Solvent(s)			Acetonitrile		
Preparation Date			10 Oct 18		
Analyst's Initals			RC		
Expiration Date			10 Apr 20		
Storage Location /°C			Room A131 Freezer #2 / Typical Temp. <20 °C		
Date Discarded/Consumed					

Dilutions of Stock Solutions

Source Serial Number	5445B-1 5446B-1			
Source Concentration, ppm	101.7 103.9			
Source Amount Used, mL	1			
Serial Number Assigned	F445BG-1			
Final Concentration, ppm	1.017 1.039			
Final Volume, mL	100			
Diluting Solvent(s)	Acetonitrile			
Preparation Date	10 Oct 18			
Analyst's Initials	RC	This is a true copy of the original.		
Expiration date	10 Apr 19	Signature	Date 20 Apr 2020	
Exp Date (Recertification)				
Storage Location/°C	#2 / <20°C			
Date Discarded/Consumed & Analyst's Initials	17Apr19 LG			

http://www.ir4.msu.edu/Files/Pdf/Form_2.pdf

IR-4 Laboratory IR-4 North Central Region Research Center Michigan State University

ANALYTICAL REFERENCE STANDARD RECORD AND USE LOG

Stock Solutions from ARS's

Part 2, Page 88

ARS Name			IN-J9238-003 (cyantraniliprole metabolite)		
ARS Serial Number			ARS-446B		
Wt, g	Purity%	Corr Wt, g	0.01069	97.2	0.01039068
Serial Number Assigned			S446B-1		
Final Concentration, ppm			103.9		
Final Volume, mL			100		
Diluting Solvent(s)			Acetonitrile		
Preparation Date			10 Oct 18		
Analyst's Initals			RC		
Expiration Date			10 Apr 20		
Storage Location /°C			Room A131 Freezer # 2 / Typical Temp. -20 °C		
Date Discarded/Consumed					

Dilutions of Stock Solutions

Source Serial Number				
Source Concentration, ppm				
Source Amount Used, mL				
Serial Number Assigned				
Final Concentration, ppm				
Final Volume, mL				
Diluting Solvent(s)				
Preparation Date				
Analyst's Initials				
Expiration date				
Exp Date (Recertification)				
Storage Location/°C				
Date Discarded/Consumed & Analyst's Initials				

This is a true copy of the original.
Signature [signature] Date 12/15/2020

http://www.ir4.msu.edu/Files/Pdf/Form_2.pdf

IR-4 Western Region Laboratory and
Trace Analytical Laboratory

SOP Number: 601

REFERENCE STANDARD RECEIPT/USE

Chemical HGW86-842 **Standard #** 718

Parent HGW86-842 **Date Received** 09/17/20

Source[1] FMC **Certified By** FMC

Lot # D100103-555 **Physical Form** Solid

Original Expiration Date[2] 02/01/21 **Original Purity**[2] 98.9%

Extended Expiration Date/Purity/Recertified By[3]:

1) 1/4/27 / 98.9 % / FMC **Initial** BH **Date** 1/28/21
2) ____ / ____ % / ____ **Initial** ____ **Date** ____
3) ____ / ____ % / ____ **Initial** ____ **Date** ____
4) ____ / ____ % / ____ **Initial** ____ **Date** ____

Notes AKA: Cyantraniliprole (obtained from the std bottle), DPX-HGW86 or Cyazpyr. 842 is the research lot.

CoA Rec'd ? Yes **CoA and label agree:** Yes **(M)SDS:** Yes **Storage:** Room Temperature

Signature Bronson Hung **Date** 9/18/20

USE RECORDS

Location	Date	Amount Used (g)	Balance ID	Initial	Amount Left (g)	Standard Stock #
CHE 418	9/17/20	Initial		BH	0.3001 g	
CHE 418	10/12/20	0.01016	Scrappy	BH	0.28994	718-1
CHE 418	1/29/21	0.01012	Scrappy	BH	0.27982	718-2

[1]Enter the Registrant from the Protocol or the chemical company providing the standard.
[2]Enter the original expiration date and purity and when the standard was received.
[3]When the standard is recertified, enter the extended expiration date, purity and company that recertified the standard.

*****Write Standard # on CoA and Original Standard Container*****

Revised on: 08/21/15 Page____

IR-4 Western Region Laboratory and
Trace Analytical Laboratory

SOP Number: 601

REFERENCE STANDARD RECEIPT/USE

Chemical IN-J9Z38-003 **Standard #** 719

Parent HGW86-842 **Date Received** 09/17/20

Source[1] FMC **Certified By** FMC

Lot # 2000902-00405C **Physical Form** Solid

Original Expiration Date[2] 07/23/28 **Original Purity**[2] 97.2%

Extended Expiration Date/Purity/Recertified By[3]:

1) _____ / ____ % / _____ **Initial** _____ **Date** _____
2) _____ / ____ % / _____ **Initial** _____ **Date** _____
3) _____ / ____ % / _____ **Initial** _____ **Date** _____
4) _____ / ____ % / _____ **Initial** _____ **Date** _____

Notes -003 is the research lot number. Parent Cyantraniliprole (HGW86-842, DPX-HGW86)

CoA Rec'd ? Yes **CoA and label agree:** Yes **(M)SDS:** Yes **Storage:** Room Temperature

Signature Brianna Hung **Date** 9/18/20

USE RECORDS

Location	Date	Amount Used (g)	Balance ID	Initial	Amount Left (g)	Standard Stock #
CHE 418	9/17/20	Initial		BH	0.3002 g	
CHE 418	10/12/20	0.01030	Scrappy	BH	0.2899	719-1
CHE 418	1/29/21	0.01033	Scrappy	BH	0.27957	719-2

[1]Enter the Registrant from the Protocol or the chemical company providing the standard.
[2]Enter the original expiration date and purity and when the standard was received.
[3]When the standard is recertified, enter the extended expiration date, purity and company that recertified the standard.

*****Write Standard # on CoA and Original Standard Container*****

Revised on: 08/21/15

Page_____

IR-4 Western Region Laboratory and
Trace Analytical Laboratory

SOP Number: 602

STANDARD USE FORM - STOCK

Name Cyantraniliprole **Purity** 98.9% **Source** FMC

Date Received 09/17/2020 **Expiration Date** 01/04/2027 **Lot #** D100103-555

Stock Solution:

(0.01012 g X 98.9% Purity X 1000mg/g X 1000 µg/mg)/(100 mL) = 100 µg/mL

Solvent: Acetonitrile Storage: Refrigerator

Stock Standard # 718-2 Expiration Date 7/29/2021

Prepared by Bronson Hung Date 1/29/2021

ALIQUOTS

Date	mL Removed	Syringe/Pipette Size	Spike or Dilution	New Std #	Expiration Date	Initial
1/29/21	2.5	5mL Pipetman	D	718-2M1	3/29/21	BH
2/2/2021	0.125	PIPETTOR	S(3x)	N/A	N/A	
2/4/2021	0.125	PIPETTOR	S	N/A	N/A	
2/10/2021	1.250	PIPETTOR	S(3x)	N/A	N/A	
3/22/2021	0.250	PIPETTOR	S(3x)	N/A	N/A	
3/25/2021	0.250	PIPETTOR	S	N/A	N/A	
3/29/2021	2.5	PIPETTOR	D	718-2M3)	5/29/2021	
3/30/2021	1.250	PIPETTOR	S(3x)	N/A	N/A	
4/2/2021	0.250	PIPETTOR	S	N/A	N/A	
4/5/2021	0.125	PIPETTOR	S(3x)	N/A	N/A	
4/8/2021	0.125	PIPETTOR	S	N/A	N/A	
4/12/2021	1.250	PIPETTOR	S(3x)	N/A	N/A	
4/16/2021	0.250	PIPETTOR	S(3x)	N/A	N/A	
4/29/2021	0.125	PIPETTOR	S(3x)	N/A	N/A	

Note: Cyantraniliprole is also known as HGW86-842.

Revised on: 6/03/08

Page # 1

4/29/2021

IR-4 Western Region Laboratory and
Trace Analytical Laboratory

SOP Number: 602

STANDARD USE FORM - STOCK

Name CYANTRANILIPROLE **Stock Standard #** 718-2

ALIQUOTS

Date	mL Removed	Syringe/Pipette Size	Spike or Dilution	New Std #	Expiration Date	Initial
5/5/2021	0.125	PIPETTOR	S	N/A	N/A	MM
5/13/2021	2.50	PIPETTOR	S	N/A	N/A	MM
6/2/2021	2.5	PIPETTOR	D	718-2M80	7/29/2021	MM
6/7/2021	0.25	PIPETTOR	S(3x)	N/A	N/A	MM
6/8/2021	0.25	PIPETTOR	S	N/A	N/A	MM
6/9/2021	0.25	PIPETTOR	S	N/A	N/A	MM

Revised on: 04/02/21

Page # 2

4/29/2021
MM

IR-4 Western Region Laboratory and
Trace Analytical Laboratory

SOP Number: 602

STANDARD USE FORM - STOCK

Name IN-J9Z38-003 **Purity** 97.2% **Source** FMC

Date Received 09/17/2020 **Expiration Date** 07/23/2028 **Lot #** 2000902-00405C

Stock Solution:

(0.01033 g X 97.2% Purity X 1000mg/g X 1000 µg/mg)/(100 mL) = 100 µg/mL

Solvent: Acetonitrile Storage: Refrigerator

Stock Standard # 719-2 Sonication: 1 mins Expiration Date 7/29/2021

Prepared by Bronson Hung Date 1/29/2021

ALIQUOTS

Date	mL Removed	Syringe/Pipette Size	Spike or Dilution	New Std #	Expiration Date	Initial
1/29/21	2.5	5mL Pipetman	D	718-2M1	3/29/21	BH
2/2/2021	0.125	Pipettor	S(3x)	N/A	N/A	NMS
2/4/2021	0.125	Pipettor	S	N/A	N/A	NMS
3/25/2021	2.5	Pipettor *	D	718-2M30	5/25/2021	NMS
4/29/2021	0.125	Pipettor	S(3x)	N/A	N/A	NMS
5/5/2021	0.125	Pipettor	S	N/A	N/A	NMS
5/14/2021	0.250	Pipettor	S(3x)	N/A	N/A	NMS
6/2/2021	2.5	Pipettor	D	718-2M50	7/29/2021	NMS

* Pipettor
EE 5/14/2021

Revised on: 6/03/08

Page #_____

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2				Final Volume (mL)	Final Conc. (µg/mL)	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38-003		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
1/29/21	718-2	2.5	719-2	2.5			25	10	718-2M1	ACN*	03/29/21	R	BH
1/29/21					718-2M1	2.5	25	1.0	718-2M2	ACN*	03/29/21	R	TM
1/29/21					718-2M2	2.5	25	0.10	718-2M3	ACN*	03/29/21	R	TM
1/29/21					718-2M3	2.5	25	0.010	718-2M4	ACN*	03/29/21	R	TM
							1/30/2021						

*ACN = Acetonitrile

Revised on: 6/03/08

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1/30/2021

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IR-4 Western Region Laboratory, University of California, Davis

Analytical Summary Report, PR# 12401

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
3/22/2021					718-2M3	0.125	25	0.50 pg/µL	718-2M25	*	3/29/2021	R	
3/22/2021					718-2M4	0.500	25	0.20 pg/µL	718-2M26	*	3/29/2021	R	
3/22/2021					718-2M4	0.250	25	0.10 pg/µL	718-2M27	*	3/29/2021	R	
3/22/2021					718-2M4	0.125	25	0.050 pg/µL	718-2M28	*	3/29/2021	R	
3/22/2021					718-2M4	0.125	50	0.0250 pg/µL	718-2M29	*	3/29/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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3/22/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
3/29/2021	718-2	2.5	719-2	2.5			25	10 µg/mL	718-2M30	ACN	5/29/2021	R	NM
3/29/2021					718-2M30	2.5	25	1.0 µg/mL	718-2M31	ACN	5/29/2021	R	NM
3/29/2021					718-2M31	2.5	25	0.10 µg/mL	718-2M32	ACN	5/29/2021	R	NM
3/29/2021					718-2M32	2.5	25	0.010 µg/mL	718-2M33	ACN	5/29/2021	R	NM
3/29/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M34	*	4/5/2021	R	NM
3/29/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M35	*	4/5/2021	R	NM
3/29/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M36	*	4/5/2021	R	NM
3/29/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M37	*	4/5/2021	R	NM
3/29/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M38	*	4/5/2021	R	NM

*50:50 Methanol:Water

Revised on: 6/03/08

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3/29/2021 NM

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STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
4/5/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M39	*	4/12/2021	R	NM
4/5/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M40	*	4/12/2021	R	NM
4/5/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M41	*	4/12/2021	R	NM
4/5/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M42	*	4/12/2021	R	NM
4/5/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M43	*	4/12/2021	R	NM

*50:50 Methanol:Water

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Revised on: 6/03/08

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4/5/2021 NM

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
4/12/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M44	*	4/19/2021	R	
4/12/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M45	*	4/19/2021	R	
4/12/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M46	*	4/19/2021	R	
4/12/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M47	*	4/19/2021	R	
4/12/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M48	*	4/19/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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4/12/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
4/21/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M49	*	4/28/2021	R	
4/21/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M50	*	4/28/2021	R	
4/21/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M51	*	4/28/2021	R	
4/21/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M52	*	4/28/2021	R	
4/21/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M53	*	4/28/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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4/21/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
4/29/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M54	*	5/6/2021	R	
4/29/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M55	*	5/6/2021	R	
4/29/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M56	*	5/6/2021	R	
4/29/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M57	*	5/6/2021	R	
4/29/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M58	*	5/6/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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4/29/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
5/6/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M59	*	5/13/2021	R	
5/6/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M60	*	5/13/2021	R	
5/6/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M61	*	5/13/2021	R	
5/6/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M62	*	5/13/2021	R	
5/6/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M63	*	5/13/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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5/6/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
5/13/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M64	*	5/20/2021	R	
5/13/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M65	*	5/20/2021	R	
5/13/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M66	*	5/20/2021	R	
5/13/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M67	*	5/20/2021	R	
5/13/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M68	*	5/20/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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5/13/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
5/21/2021					718-2M32	0.125	25	0.50 pg/µL	718-2M69	*	5/28/2021	R	
5/21/2021					718-2M33	0.500	25	0.20 pg/µL	718-2M70	*	5/28/2021	R	
5/21/2021					718-2M33	0.250	25	0.10 pg/µL	718-2M71	*	5/28/2021	R	
5/21/2021					718-2M33	0.125	25	0.050 pg/µL	718-2M72	*	5/28/2021	R	
5/21/2021					718-2M33	0.125	50	0.0250 pg/µL	718-2M73	*	5/28/2021	R	

*50:50 Methanol:Water

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Revised on: 6/03/08

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5/21/2021

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
6/2/2021	718-2	2.5	719-2	2.5			25	10 µg/mL	718-2M80	ACN	7/29/2021	R	NM
6/2/2021					718-2M80	2.5	25	1.0 µg/mL	718-2M81	ACN	7/29/2021	R	NM
6/2/2021					718-2M81	2.5	25	0.10 µg/mL	718-2M82	ACN	7/29/2021	R	NM
6/2/2021					718-2M82	2.5	25	0.010 µg/mL	718-2M83	ACN	7/29/2021	R	NM
6/2/2021					718-2M82	0.125	25	0.50 pg/µL	718-2M84	*	6/9/2021	R	NM
6/2/2021					718-2M83	0.500	25	0.20 pg/µL	718-2M85	*	6/9/2021	R	NM
6/2/2021					718-2M83	0.250	25	0.10 pg/µL	718-2M86	*	6/9/2021	R	NM
6/2/2021					718-2M83	0.125	25	0.050 pg/µL	718-2M87	*	6/9/2021	R	NM
6/2/2021					718-2M83	0.125	50	0.0250 pg/µL	718-2M88	*	6/9/2021	R	NM
6/2/2021					718-2M86	1.0	10	~~0.0250~~ pg/µL	718-2M89	*	6/9/2021	R	NM

0.010
6/3/2021 NM

*50:50 Methanol:Water

Revised on: 6/03/08

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6/2/2021 NM

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IR-4 Western Region Laboratory, University of California, Davis
Analytical Summary Report, PR# 12401

STANDARD USE FORM - DILUTIONS

Date	Compound 1		Compound 2		Compound 3		Final Volume (mL)	Final Conc.	New Std#	Solvent	Exp. Date	Storage	Initials
	Cyantraniliprole		IN-J9Z38		Mixed							RT/R/F/O	
	Std#	mL	Std#	mL	Std#	mL							
6/17/2021					718-2M82	0.125	25	0.50 pg/µL	718-2M95	*	6/24/2021	R	
6/17/2021					718-2M83	0.500	25	0.20 pg/µL	718-2M96	*	6/24/2021	R	
6/17/2021					718-2M83	0.250	25	0.10 pg/µL	718-2M97	*	6/24/2021	R	
6/17/2021					718-2M83	0.125	25	0.050 pg/µL	718-2M98	*	6/24/2021	R	
6/17/2021					718-2M83	0.125	50	0.0250 pg/µL	718-2M99	*	6/24/2021	R	
6/17/2021					718-2M83	~~0.125~~ 0.050	50	0.010 pg/µL	718-2M100	*	6/24/2021	R	

EE 9/27/2021

*50:50 Methanol:Water

Revised on: 6/03/08

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IR-4 Western Region Laboratory, University of California, Davis

Analytical Summary Report, PR# 12401

ATTACHMENT D: CERTIFICATES OF ANALYSIS

FMC Corporation
FMC Agricultural Solutions
Stine Research Center
Newark, Delaware 19711

CERTIFICATE OF ANALYSIS

The purity reported in this Certificate of Analysis was generated under EPA Good Laboratory Practice Standards (40 CFR Part 160).

Test Item/Substance: IN-J9Z38-003

Lot Number: 2000902-00405C

Analytical Data:
Purity: 97.2%

Physical Form: Solid

Storage: Ambient

The identity of the certified material was established by use of MS.
The purity of the certified material was established by use of Water (KFT) and Organic impurities (area %) by HPLC.

Date of Analysis: 23-Jul-2018
Expiration Date: 23-Jul-2028

Reference: FMC-50408

Testing Facility/Performing Laboratory:

Výzkumný ústav organických syntéz a.s. (VUOS)
Research Institute for Organic Syntheses, Inc.
Centre of Ecology, Toxicology and Analytics
GLP Testing Section
Rybitví c.p. 296
533 54 Rybitví
Czech Republic

Rec 23 Aug 2018
new. CoA.
ARS 446
KB

Mary Ellen McNally
FMC Representative

Signature

August 20th, 2018
Date

This is a true copy of the original.
Signature Date 26/08/2022

E. I. du Pont de Nemours and Company
Stine-Haskell Research Center
S315/Sample Management
PO Box 30
Newark, DE 19714 USA
1-888-638-7668

CERTIFICATE OF ANALYSIS

Revision 1*

The purity reported in this Certificate of Analysis was generated under EPA Good Laboratory Practice Standards (40 CFR Part 160).

Test Item/Substance: IN-J9Z38-003

Batch/Lot Number: 2000902-00405C

Analytical Data:
Purity: 97.2%

Physical Form: Solid

Storage: Ambient

The identity of the certified material was established by use of LC/MS and NMR.
The purity of the certified material was established by use of HPLC/UV.

Date of Analysis: 22-AUG-2008
Expiration Date: 22-AUG-2018

Reference: DuPont-26308

This is a true copy of the original.
Signature [signature] Date 20 Aug 22 20

Testing Facility/Performing Laboratory:
MPI Research, Inc.
3058 Research Drive
State College, PA 16801

Spectral Data Services, Inc.
818 Pioneer Street
Champaign, IL 61820

David E. Brennan
DuPont Representative

David E Brennan
Signature

June 7, 2010
Date

* Characterization data supports an extended expiration date.

Rec 15 Jun 2018
new bottle for ARS 446
labbelled ARS 446B
Kg

E. I. du Pont de Nemours and Company
Stine-Haskell Research Center
S315/Sample Management
PO Box 30
Newark, DE 19714 USA
1-888-638-7668

CERTIFICATE OF ANALYSIS

The purity reported in this Certificate of Analysis was generated under OECD Good Laboratory Practice Standards.

Test Item/Substance:	DPX-HGW86-842
Manufacturing Lot:	D100103-555

Analytical Data:

Purity:	98.9%
Physical Form:	Solid, Powder
Storage:	Ambient

The identity of the certified material was established by use of MS

The purity of the certified material was established by use of IC, VOC, Water (KFT) and Organic impurities (HPLC)

Date of Analysis:	01-Aug-2017
Expiration Date:	01-Aug-2020
Reference:	DuPont-47872

Testing Facility/Performing Laboratory:

Výzkumný ústav organických syntéz a.s. (VUOS)
Research Institute for Organic Syntheses, Inc.
Centre of Ecology, Toxicology and Analytics
GLP Testing Section
Rybitví c.p. 296
533 54 Rybitví
Czech Republic

This is a true copy of the original.
Signature [signature] Date 28 Aug 17

Leah K. Fett — DuPont Representative

Leah K. Fett — Signature

14-Aug-2017 — Date

199

Rec. 15 Jun 2018
ARS ~~466~~ 445 B ① 15 Jun 18
~~new std~~.
new bottle of standard ① 15 Jun 18

IR-4 Western Region Laboratory, University of California, Davis

Analytical Summary Report, PR# 12401

FMC Corporation
Stine Research Center
Newark, Delaware 19711

CERTIFICATE OF ANALYSIS

Revision #1*

The purity reported in this Certificate of Analysis was generated under OECD Good Laboratory Practice Standards.

EE CT 9/17/20

Test Item/Substance:	HGW86-842
Lot Number:	D100103-555

Std
Rec'd with ~~COA~~ on 9/17/20
Std # 718.

Analytical Data:

Purity:	98.9%
Physical Form:	Solid, Powder
Storage:	Ambient

CT 9/17/20

The identity of the certified material was established by use of MS.

The purity of the certified material was established by use of IC, VOC, Water (KFT) and organic impurities (HPLC)

Date of Analysis:	01-Aug-2017
Expiration Date:	01-Feb-2021
Reference:	Report No. Dupont-47872

TRUE COPY OF ORIGINAL
THIS STAMP IS IN RED.
INITIALS BH
DATE 10/12/26

Testing Facility/Performing Laboratory:

Výzkumný ústav organických syntéz a.s. (VUOS)
Research Institute for Organic Syntheses, Inc.
Centre of Ecology, Toxicology and Analytics
GLP Testing Section
Rybitví c.p. 296
533 54 Rybitví
Czech Republic

Tariq Fares
FMC Representative

Signature

04-Oct-2019
Date

*Extending expiration date six months

200

FMC

FMC Corporation
Stine Research Center
Newark, Delaware 19711

CERTIFICATE OF ANALYSIS

The purity reported in this CoA was generated under OECD principles of Good Laboratory Practice which are compatible with the EPA Good Laboratory Practice standards (40 CFR 160).

Test Item/Substance:	HGW86-842
Lot Number:	D100103-555
Analytical Data:	
Purity:	98.9%
Physical Form:	Solid, Powder
Storage:	Ambient

std# 718 and 650
Cyantraniliprole
Rec'd by e-mail on
1/28/21
BH 1/28/21

The identity of the certified material was established by use of MS

The purity of the certified material was established by use of IC, VOC, Water (KFT) and Organic impurities (HPLC)

Date of Analysis:	04-Jan-2021
Expiration Date:	04-Jan-2027
Reference:	FMC-55274

TRUE COPY OF ORIGINAL
THIS STAMP IS IN RED.
INITIALS BH
DATE 1/29/21

Testing Facility/Performing Laboratory:

Výzkumný ústav organických syntéz a.s. (VUOS)
Research Institute for Organic Syntheses, Inc.
Centre of Ecology, Toxicology and Analytics
GLP Testing Section
Rybitví c.p. 296
533 54 Rybitví
Czech Republic

Tariq Fares
FMC Representative

Signature

28-Jan-2021
Date

FMC Corporation
FMC Agricultural Solutions
Stine Research Center
Newark, Delaware 19711

CERTIFICATE OF ANALYSIS

The purity reported in this Certificate of Analysis was generated under EPA Good Laboratory Practice Standards (40 CFR Part 160).

Test Item/Substance: IN-J9Z38-003 Recd with Std on 9/17/20

Lot Number: 2000902-00405C Std# 719.

Analytical Data:
Purity: 97.2% CT 9/17/20

Physical Form: Solid

Storage: Ambient

The identity of the certified material was established by use of MS.
The purity of the certified material was established by use of Water (KFT) and Organic impurities (area %) by HPLC.

Date of Analysis: 23-Jul-2018
Expiration Date: 23-Jul-2028

Reference: FMC-50408

TRUE COPY OF ORIGINAL
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INITIALS BH
DATE 10/12/20

Testing Facility/Performing Laboratory:

Výzkumný ústav organických syntéz a.s. (VUOS)
Research Institute for Organic Syntheses, Inc.
Centre of Ecology, Toxicology and Analytics
GLP Testing Section
Rybitví c.p. 296
533 54 Rybitví
Czech Republic

Mary Ellen McNally
FMC Representative

Signature

August 20th, 2018
Date

Attachment 4

Checklist for Review of Analytical Summary Reports

Checklist for Review of Analytical Summary Reports

PR #: _____ Active Ingredient/Crop: _____

	Yes	No	NA	Notes
1)Sample Preparation				
1.1 For each sample, was the full sample ground, and mixed thoroughly?				
2)Instrument Condition				
2.1 For GC/MS, are tune files or other appropriate documentation available for each run, to show that the instrument was in good working order at the time the run was made?				
If 2.1 is no, or if the analyst has concerns regarding the instrument condition, the LRD must be consulted. Was the LRD consulted?				
2.2 For other detectors, was the instrument in good working order for each run? The answer to this question will rely on the analyst's professional judgment and will include an evaluation of appropriate data obtained throughout the study, for example, the standard curve, the peak retention times, the area counts of the standards and the signal to noise ratio. Note what data was considered.				
If 2.2 is no, or if the analyst has concerns regarding the instrument condition, the LRD must be consulted. Was the LRD consulted?				

	Yes	No	NA	Notes
3)Analysis				
3.1 Is the peak of interest distinct on each chromatogram? (No shoulder peaks on the peak of interest and no interfering peaks.)				
3.2 Is the S/N ratio adequate? For example, when viewing the chromatograms for the standards through the course of the study, are there any runs where the S/N ratio has dropped significantly? A low S/N ratio is a concern. The answer to this question will rely on the analyst's professional judgment.				
If 3.2 is no, or if the analyst has concerns regarding a change in S/N ratio during a study, the LRD must be consulted. Was the LRD consulted?				
3.31 Are recoveries during method validation comparable to the recoveries in the reference method? (When the average recoveries are compared, the difference is <20%. Spot check the data, detailed calculations are not needed)				
3.32 Are concurrent recoveries during analysis comparable to those seen in method validation? (When the average recoveries are compared the difference is <15%. Spot check the data, detailed calculations are not needed)				
3.4 Did the r-squared value remain consistent during method validation and analysis of samples (Range $\leq$ 0.02)?				
If 3.4 is no, what is the range of the r-squared values? Provide an explanation.				
3.5 Are there manual integrations?				
If 3.5 is yes, were any standards manually integrated?				
If 3.5 is yes, is a reason provided in the ASR?				

	Yes	No	NA	Notes
3.61 Were duplicate injections used for concurrent fortifications?				
If 3.61 is yes, were duplicate injections within 30% of each other?				
3.62 Were duplicate injections used for unknowns?				
If 3.62 is yes, were duplicate injections within 30% of each other?				
4)Results				
4.1 Are control values non-detectable?				
If 4.1 is no, are they <20% of the highest residue value? (860.1340, p.2)				
If 4.1 is no, is this noted in the ASR and the pertinent chromatograms included?				
4.21 Are method validation recoveries and concurrent recoveries consistently >100%? (860.1340, p.2)				
4.22 For method validation and concurrent recoveries, is the CV (defined as the standard deviation/average) <20%? (860.1340, p.3)				

	Yes	No	NA	Notes
5)Analytical Summary Report				
5.1 Were any samples re-extracted and rerun?				
If 5.1 is yes, was the LRD consulted? The LRD needs to approve samples needing re-extraction due to judgment calls, for example, samples with unexpectedly high or low residue results, or a need for manual integration.)				
If 5.1 is yes, was the study director notified? (If the situation is covered in an SOP i.e. samples needing dilution, reanalysis due to a power failure or the vial location was incorrect for injection, document in the study file. The study director does not need to be notified). If answer to this question is no, please note why.				
If 5.1 is yes, is there information explaining the situation and its resolution in the ASR?				
5.2 Is there documentation in the raw data regarding any unexpected circumstances during the run?				
If 5.2 is yes, was the LRD consulted? The LRD needs to approve judgment calls, for example, samples with unexpectedly high or low residue results, or a need for manual integration.)				
If 5.2 is yes, was the study director notified? (If the situation is covered in an SOP i.e. reanalysis due to a power failure or the vial location was incorrect for injection, the study director does not need to be notified). If answer to this question is no, please note why.				
If 5.2 is yes, is there information explaining the situation and its resolution in the ASR?				
If 5.2 is yes, are chromatograms of samples with unusual or inconsistent results included in the ASR? (860.1000, p.18)				

	Yes	No	NA	Notes
5.3 Are standard curves and peak heights/areas for all standards available in the ASR for each run? (860.1000, p. 18)				
If 5.3 is no, please attach a copy of any missing standard curves with peak heights/areas, so the study director may add them as an appendix to the final report.				
5.4 Are the dates the test compounds (standard solutions) were prepared included in the ASR? (860.1500, #3, p. 37)				
If 5.4 is no, please include this information with this checklist (A copy of the standards prep form(s) is fine).				
5.5Are all residue values reported in the ASR bracketed by the standard curve?				
If 5.5 is no, was the study director contacted?				

Analytical Summary Report Reviewed by:

_____

Signature Date

Discussion of Hemp Requests

Presenter: Philip Moore



IR-4 Project

IR-4 and Hemp Path Forward

PMC Meeting Oct 2025

Philip Moore

What is IR-4 doing in hemp Integrated Solutions?

What is IR-4 doing in hemp residue studies?

What is IR-4 submitting to EPA for hemp?

Why is this a problem?

What should happen in the future?

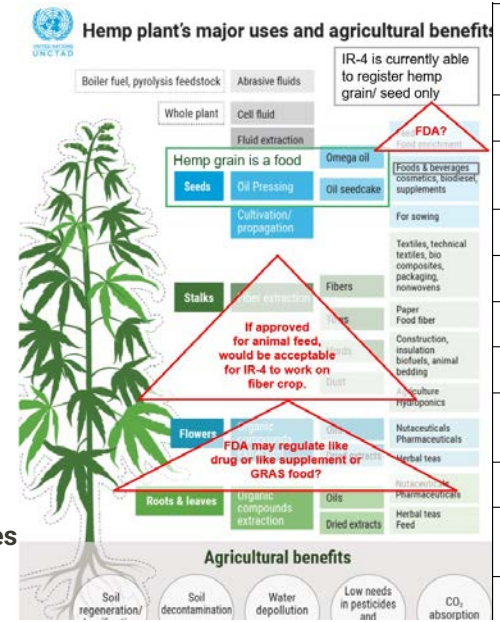
What is IR-4 doing in hemp IS?

- IS00308/ Damping off via seed treatment: 12x in ND, NY, VA, in 2019-20
- IS00357/ CEW: 3x in CA, AL, CO in 2020-21
  - Led to Harvanta 13035 and Coragen 13000 residue studies
- IS00391: Damping off in GH Seeded Organic and Conv., 2x in KY, NY 2021
- IS00369/ Crown and Root Rot in GH and Field: 3x in IN, KY 2022-23
  - Led to Ranman 13058 residue study
- IS00382/ Hemp Russet Mites: 2x in CO, KY 2021-22
  - Led to Abba Ultra 13048 and Portal 13033 residue studies
- IS00370/ PRE Transplant/ Seeded and Post Foliar weeds: 3x in NY, VA, KY 2022-23
  - Developed data for Assure II 13017 residue study
- IS00386: Rice Root Aphids, GH drench: 3x in KY, OH 2023-24
  - Led to Beleaf 13996 residue study
- IS00459 + IS00464 / PRE, EARLY, POST weeds: 4x in ID, IL, NY, NJ 2024

1. **Farm Bill of 2018: “hemp” is a crop again, distinct from cannabis, (<0.3% Δ9 THC)**
2. **IR-4 has received 56 R/PP requests and 17 IS requests since**
3. **These are all nine funded IS studies on Hemp, next slide is the ten residue studies**
4. **Residue requests often come from IS**
5. **Requests for “hemp” studies are (typically) all inclusive (seed, fiber, flower, processed commodities) and include GH unless for weed sci.**

What is IR-4 doing in hemp residue studies?*

- IR-4 done 10 studies, 115 residue trials @ $7,777: $895k
- 95 trials to lab, 6 RAC, @ $1k per: $570k (+SS, decline)
- 10 seed processing -> oil, flour, etc @ $8.7k per: $87k
- Flower processing-> CO_2 + EtOH extracts @ $4k: $40k
- Lab analysis, 10 seed + 6 flower/ oil samples: $160k
- Not including Study Director, QA, RFC, TFM, etc. time
- >$1.75 M spent in 6 years or $292k per year for residue priorities
- 2026: no new hemp priorities at 2025 FUW
- IR-4 will submit our first residue study to EPA this or next quarter
- Now is a perfect time to re-think our process for hemp requests



IR-4 PR Number	Active Ingredient	Study Initiation Year	Field Trial Locations		
			Seed/ Fiber	CBD Field	CBD GH
12834	Flutianil	2020	MD, WI x4	NC, CA, OR	WI
13007	Isofetamid	2021	CA, MD, WI x3	CA, WI, NC, OR	CA, WI
13017	Quizalofop	2021	WI x5 OH	CA, WI NC, OR	-
13058	Cyazofamid	2022	WI x4, OH x2	CA, NC, OR	CA, WI
13048	Abamectin	2022	OH, WIx4	CA, NC, OR	-
13033	Fenpyroximate	2023	ID, WIx4	CA x2, NC	CA x2
13035	Cyclaniliprole	2023	MD, WI X3, ID	WI, NC, CA	CA, WI
13000	Chlorantraniliprole	2024	WI x3, OH x2	CA x2, NC	WI, OH
13011	Zeta-Cypermethrin	2024	WI x3, OH, CA	CA x2, NC	WI, CA
13966	Flonicamid	2025	WI x4, OH x2	NC x2 CA x2	OH, NC

IR-4 Project

*Not actual costs. All numbers are estimates/ based on representative values

What is IR-4 submitting to EPA for hemp?

*Status as of 9/2025

- These requests are fulfilling real needs for actual growers in the US. Hemp is new & demand increasing
- USDA NASS: $445 M in hemp crop in 2024 (40%)
  - -Hemp seed / for re-planting 2,160 acres (61%)
  - -Hemp grain / for eating 4,863 acres (22%)
  - -Hemp fiber / industrial 18,855 acres (59%)
  - -Hemp flower / smokable 11,827 acres (60%)
- SD, ND, MT, KS are major hemp grain production area
- Currently, IR-4 can only seek EPA registrations for hemp grain/ seed, as the edible portion of the plant
- Doing dual-purpose hemp trials with flower + fiber samples to allow IR-4 to have all sample data; if rules changes, will not require conducting a new study

Pesticide	Pest / Use	Current Status*
Gatten (Flutianil)	**Powdery Mildew (PM) / Foliar**	Final report with QA
Kenja (Isofetamid)	**PM, Septoria leaf spot / Foliar**	Waiting on ASR
Assure II (Quizalofop)	**Grass weeds / Foliar**	Final report drafted
Ranman 400SC (Cyazofamid)	**Pythium / Drench, soil spray & irrigation**	Final report in progress
Abba Ultra (Abamectin)	**Two-spotted sp. mite / Foliar**	Waiting on ASR
Portal (Fenpyroximate)	**Broad & russet mites / Foliar**	Field trials complete
Harvanta 50SL (Cyclaniliprole)	**Aphids, leps, stink bug, thrips, whiteflies / Foliar**	Field trials complete
Coragen (Chlorantraniliprole)	**Leps & whiteflies / Foliar**	Trials ongoing
Mustang Maxx (Zeta-Cypermethrin)	**Leps, aphids, Lygus, stink bugs, thrips, weevils / Foliar**	Trials ongoing
Beleaf SG (Flonicamid)	**Rice root aphids / Soil**	Trials started this year

Why is this a problem?

- Hemp requestors do not limit “need” to only food hemp, all use sites are sought
- IR-4 hemp studies, have included all hemp commodities, but can only obtain from EPA seed/grain hemp new uses
- Crop is grown very differently: Fiber, Seed/ Dual Purpose, or Flower

- Laboratory handling hemp is backed up, especially with storage stability req.
- New USDA hemp def. splits industrial and food hemp, from cannabinoid hemp
- Too many resources being put into 1 request. Studies are big and expensive. These take away from other stakeholder needs

IR-4 Project

What should happen in the future?

1. Status Quo – Wait for EPA after our first submission & wait for FDA allow other dietary uses
2. Require all hemp requests split into *Seed/ Grain* Hemp, *Industrial/ fiber* Hemp and *Cannabinoid* Hemp: each require their own priority & residue study protocol. Hope stakeholders recognize that limited IR-4 resources should only go to *seed/grain* hemp
3. Split the requests & pause the *Cannabinoid* and *Industrial* requests until EPA allows (red light)
4. No longer collect samples on fiber and flower commodities for all future hemp studies, *only do grain/seed* (same as Canadian PMC). This is a stop rather than a pause for Cannabinoid and industrial/fiber hemp requests.
5. Some other modification to reduce expenses on hemp studies? Do we as a program, want to keep allocating funds for large hemp studies, with the knowledge it limits our ability to do other studies?

IR-4 QA Update

Presenter: Johanna Mazlo



IR-4 Project

QA Update

October 2025 PMC Meeting

Overview

- EPA Inspections
- QA Update
- 2025 Audit/Inspection Data
- eQA and eDoc Update

2025 EPA Inspections

Year of Inspection	Location
2025 (Jan – July)	Oregon State University – Field Texas A&M, Weslaco, TX – Field (desktop audit) AdPen Jacksonville, FL - Lab New Mexico State University - Field Ohio State University - Field USDA ARS Wooster OH - Field University of Wisconsin (D. Heider) – Field University of Wisconsin (S. Chapman) – Field University of Massachusetts - Field

IR-4 Project

2025 EPA Inspections

Year of Inspection	Location
2025 (Aug – Sept)	Michigan State University (N. Soldan) – Field North Dakota State University (Minot) – Field Wapato, WA - Lab Wapato, WA - Field

EPA Inspections

- Continuing to see an increase in the number of inspections
- Anticipating EPA inspections of the Kearney and Homestead field sites because they will be decommissioned
- QA spending more time with FRDs in preparation of inspections
- Has not resulted in QA missing deadlines or priorities

QA Update - ARS

- Wapato Lab
  - Sherita Normington continues to review raw data/Analytical Summary Reports/Contributing Scientist Reports
- Tifton Lab
  - Yavuz has been performing lab in-life inspections
  - Sherita is picking up a raw data/Analytical Summary Report audit
- ARS Field
  - HQ, WSR & SOR auditors are performing in-life inspections

IR-4 Project

QA Update

- eQA update is a priority and the validation is moving forward
- QA is working on the NEC meeting to ensure that GLP training is part of the meeting
- QA is an active contributor to the Quarterly Meeting including an hour training on GLP
- HQ QA will host Martin and Laurel in October
- Assisting in decommissioning of sites

IR-4 Project

QA Update - Participation on Committees

Committee	QA participants	Comments
ACAC	S. Muir Y. Yagiz	Provide QA insights
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

IR-4 Project

QA Update - Participation on Committees

Committee	QA participants	Comments
HQ SOP	J. Mazlo J. Thompson J. Peterson	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

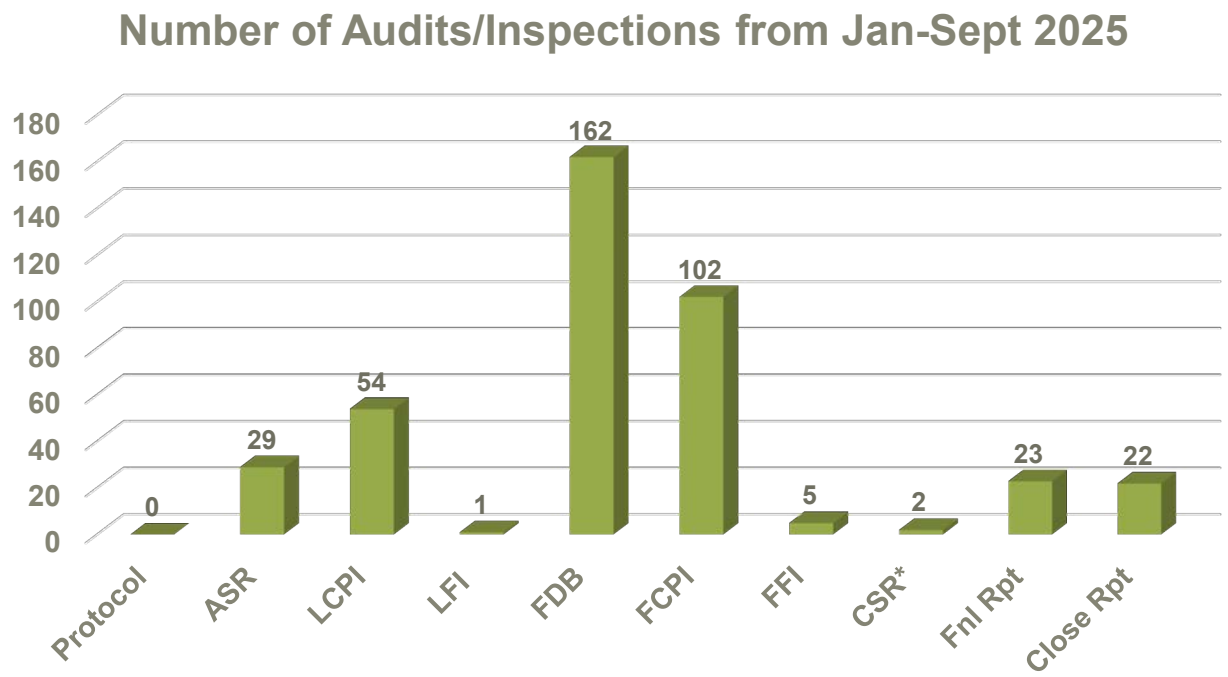
IR-4 Project

QA Update: Electronic Field Notebook

- QA has been actively engaging with the electronic notebook
  - Bringing questions, issues, etc. from the field
  - Working proactively to anticipate GLP issues
  - Audited validation reports
  - Attending the face-to-face training
  - Regular meetings with QC and P. Moore/J. Byrtus
  - Reviewed National SOP and Guidance Document

IR-4 Project

Audit/Inspection Data (Jan – Sept 2025)



Total Equiv. Days
845.5

IR-4 Project

Field Notebooks Audited

Trial Year	2021	2022	2023	2024	2025
2024	2	32	249	31	-
2025 (Jan – Sept 29)	-	3	28	126	4

eQA and eDoc Update

- eQA
  - 654 audits added in 2025
  - 17,932 total audits
- eDocs
  - 7133 total documents
  - Analytical methods 391
  - Working methods 74
  - Certificates of Analysis 201
  - National SOPs 4



IR-4 Project

IR-4 Project

Thank you

Results of the Food Use Workshop

Presenter: Alice Axtell



IR-4 Project

2026 Research Plan: Product Performance

FUW Debrief

- 140 total attendees – 104 in person, 36 virtual
- About ¼ were first-time participants!
- EPA was given permission to attend and present
- Survey results were very positive for both the in-person and the virtual experience
- A reception was hosted to honor Jerry's retirement



FUW Debrief (continued…)

- **First-round nominations** provided limited value for shortlisting and led to some rushed/challenging decisions on the final day.
- **“Under evaluation” projects** remained until the last day, adding some complexity from a tracking perspective.
- Due to limited funds for new H+ priorities, it was proposed to lump these into Integrated Solutions (IS) projects. However, participants were reminded that this was not the intent of IS.
- Two **EPA Orange** coded projects, which present significant barriers to registration at this time, were nominated.

IR-4 Project

Some Background on Residue & Product Performance

- In **2024**, the workshop goals allowed for 37 “A” priorities, 9 “H+” priorities, and 6 Regional or Priority Upgrade Proposals.

- To offset the cost of contract labs needed because of IR-4’s lab backlog, the **2025** workshop goals had to be reduced to only 35 “A” priorities and 6 “H+” priorities, with no Regional Upgrades[1] or Priority Upgrades Proposals[2] permitted.

[1]*Regional Upgrade:* A region-focused research project nominated by an Regional Field Coordinator following the workshop
[2]*Priority Upgrade Proposal:* A region or nation-focused project nominated by a stakeholder with supporting data and rationale following the workshop

IR-4 Project

No. of FUW Priorities Approved for 2026

Residue & Product Performance:

- We started w/ **248** nominated projects and ended w/:
  - **35** new NIFA-funded “A” priorities
  - **2** new sponsored “A” priorities
    - Helena - PR# 14026 peanut / potassium phosphite
    - USDA TASC - PR# 13942 blueberry / iprodione
  - **8** new “H+” priorities
    - 1 extra
    - 1 was an “A” priority and turned into an H+ following the FUW (PR# 13097 walnut / triphenyltin hydroxide) due to registrant requiring performance work prior to a residue study

No of FUW Priorities Approved for 2026

- **Integrated Solutions:**
  - We started w/ **86** nominated projects and ended w/:
    - **11** new “A” priorities:
      - **4 regional** (1 per region) @ ~$46,800
      - **5 national** @ ~$69,550
      - **2 sponsored**
        - IS# 00473 mealybugs / agave (HI Dept. of Ag)
        - IS# 00489 flower reduction / stevia (Plant Pathways)

IR-4 Project

2026 New “A” Priorities (Residue & Performance)

	No. of Projects			
	Entomology	Plant Pathology	Weed Science	TOT
Residue Only*	--	--	--	=14 (40%)
Residue + Performance	9	7	4	=21 (60%)
			TOT	= 35 (100%)

The list of priorities can be found on the IR-4 website under the FUW web page
https://www.ir4project.org/events/2025-food-use-workshop/

2026 New “H+” Priorities (Performance Only)

	No. of Projects			
	Entomology	Plant Pathology	Weed Science	TOT
Potential	4	0	3	= 7 (89 %)
E/CS only	0	0	1	= 1 (11 %)
			TOT	= 8 (100%)

The list of priorities can be found on the IR-4 website under the FUW web page
https://www.ir4project.org/events/2025-food-use-workshop/

2026 IS Priorities

Funding Agency	No. of Projects			
	Entomology	Plant Pathology	Weed Science	TOT
Regional	2	1	1	**= 4**
National	2	2	1	**= 5**
Sponsored	1	0	1	**= 2**
TOT	**= 5**	**= 3**	**= 3**	**= 11**

The list of priorities can be found on the IR-4 website under the FUW web page
https://www.ir4project.org/events/2025-food-use-workshop/

Integrated Solutions Platform Discussion

Presenter: Alice Axtell



IR-4 Project

Integrated Solutions – Recap & Future Directions

Alice Axtell Ph.D.

Where it all started…

In **2017**, the IR-4 Project Management Committee approved a proposal to establish the Integrated Solutions (IS) Platform. From the original communication, the goals of the IS platform were:

1. *To identify solutions to an existing pest management void through product screening research. This is similar to the Food Use "Pest Problems Without Solutions (PPWS)" projects, except that biopesticides will be used to a greater extent in the screening trials, along with conventional products.*
2. *To integrate biopesticides into conventional (non-organic) agricultural systems to help prevent development of pest resistance.*
3. *To substitute biopesticides or short-residual reduced-risk products close to harvest to reduce the risk of MRL violations for specialty crops targeted for export markets (residue mitigation).*
4. *Integrated solutions will also address organic production systems' needs.*



Funding came from the Biopesticide Regulatory Platform

IR-4 Project

How the Platform evolved…

- When the IS program was launched, the expectation was that requests would focus on areas such as residue mitigation, use of biopesticides, and other system-based pest management solutions. However, most of the requests ended up being directed toward identifying solutions for existing pest management voids through product screening research (PPWS).
  - PPWS studies included technologies presented at the Industry Technology Session, products suggested by stakeholders and original PCR requests received under the Residue & Product Performance platform (R&PP).

Reflections on the initial phase of IS research

- While the platform did generate valuable data,
  - The **head-to-head testing** approach with conventional pesticides did not always highlight the potential of biopesticides.
  - **Product screening alone** did not fully capture the innovative, system-based vision originally intended for IS research.
- In contrast, simple conventional product screening proved effective and has **contributed significantly to the R&PP platform**—for example, by generating preliminary efficacy/crop safety data that prompted residue studies for both existing and new projects.

IR-4 Project

Challenges and concerns that led to the IS reboot initiative

- **Limited resources and tight timelines** constrained protocol development to simplified product screenings, reducing opportunities for input from key subject matter experts and for exploring new ideas.
- **The experimental design**—focused on head-to-head comparisons of biopesticides and conventional products—did not fully showcase the potential strengths of the softer chemistries.
- Although efforts have been made, **IS research outcomes** have not yet reached the broader specialty crop community
- **Research deliverables** were not always defined and tracked in the database.

IR-4 Project

Stakeholders feedback from the IS survey & the 2024 FUW listening session

- Do **not** change the original goals of the IS platform
- Do **not** limit the platform to the screening of bio-based pesticides
- Explore solutions that are **realistic, attainable, and cost effective**
- Explore the performance of bio-based pesticides adopting a **system-based approach** to reflect common growers' pest control practices
- Support **national as well as regional** priorities
- Develop robust protocols by deferring trials and using that time to **regroup with key subject matter experts**
- Improve clarity around communication of **study goals and research outcomes**
- **Track deliverables** for IS completed projects

Some of the [major] outcomes of the reboot initiative…

- A **reduced number of new priorities** will be funded per year so that more resources can be allocated for each project.
- **Research trials can be deferred** by a year to enable biology leads to design robust protocols by **engaging with industry partners and leverage specialized expertise**. These dialogues lead to protocols including potential new solutions that are realistic, attainable, and cost effective.
- The IS database now tracks **study goals and achievements.**
- Bio-based pesticides and other softer pest control tools are now explored in a more realistic **system-based approach** that mirrors growers' common practices and may include complementary tools such as but not limited to: biostimulants, adjuvants, beneficials, unique application devices, cultural practices, etc.
- A **proportional funding model** has been implemented to support both national and regional priorities, enhancing fairness & transparency in resource allocation, where 60% of IS (NIFA) funds will support national priorities and 40% of IS (NIFA) funds will support regional priorities

What happened at the 2025 FUW

- In 2025, IR-4 had funds to **support only 6 H+ priorities, yet 95 H+ projects were nominated** during the online nomination period.
- To manage this limitation, stakeholders proposed combining **multiple H+ nominations for the same commodity into 2026 IS projects**.

  **As a side note, some stakeholders have submitted similar requests under both the R&PP and IS platforms to increase the chances of funding if one platform does not support the request.

- As a result, **many waited until the final day** of the workshop to see which IS priorities were selected before making their own H+ selections.
- Stakeholders were reminded, however, **that the IS platform was not intended as a mechanism to "lump in" H+ projects** as a workaround for funding constraints and that IS is meant to be a **more innovative platform** than basic performance screening.

Questions for the PMC committee

1. Should the IS platform prioritize innovation and system-based solutions, or continue supporting conventional product screening (e.g., H+ work) for PPWS requests where bio-based or alternative options are limited, or where more realistic, attainable, and cost-effective solutions are needed?

2. How should we address the practice of bundling multiple H+ requests at the FUW and calling them IS? Should some of the IS funds be transferred to support more H+ work?

3. Conversely, should pesticides exempt from tolerance requirements (e.g., most bio-based products) continue to be managed by the Residue & Product Performance Platform, given that they are tested very differently—and at much higher cost—than conventional products?

IR-4 Project

IR-4 Biopesticide Regulatory Support Platform Update

Presenter: Bill Barney



The IR-4 Project, Biopesticide Regulatory Support, Update

Pest management solutions for specialty crops and specialty uses



Biopesticide Regulatory, Submitted / Under EPA Review

- 1071B, American chestnut, EPA requested withdrawal and resubmission to correct a labelling error of the transgenic trees (change D58 to D54). A number of additional follow-up meetings have been held with EPA; registrant considering pursuing EUP or 25b exemption [chestnut blight]
- 1072B, Nudivirus, sterile moths, additional documentation submitted to EPA, under review at EPA [*Helicoverpa zea*]
- 1081B, Cucumber green mottle mosaic virus vaccine, re-submitted application to remove references to human studies; additional documentation submitted (inert ingredients), under review at EPA
- 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. EPA has requested additional documentation for variants (allergenicity, manufacturing, deposition); 75 day letter received 18 Sept requesting additional documentation, additional meeting held with EPA to discuss items [Citrus greening]
- 1087B, Citrus CRISPR HLB resistant rootstock. Additional documentation submitted, as requested by EPA to meet deadline for Federal Register publication, notice of filing published, risk assessment almost completed, responded to final questions from EPA [Citrus greening]

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Biopesticide Regulatory, Other Actions

- **1077B, Alum, 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; label under development to request pre-submission meeting [Fireblight]**
- ***Aspergillus flavus* AF36 Prevail and Prime, Pre-submission meeting held with EPA to discuss data requirements to remove crop and geographical restrictions for a national label. Label changes and submission documents under development [aflatoxins]**

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Biopesticide Regulatory, Submission packages in development:

- 1070B, Bacteriophages, data package under development [Varroa mite of honeybees]
- 1075B, Pseudomonas soli, pre-submission meetings held; Section 18 proposed for FL, meeting held with FDACS, additional documentation needed [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] EPA determined that an EUP was not required for an EUP for field testing; will also pursue Section 3

Biopesticide Regulatory – New Vetting Process

- ***Streptomyces nourseii* var. *xichangensis*: received a score of 79/100 in the new vetting process, EPA Pre-submission meeting held**
- **Magnet [food grade plant volatiles to be used as attract and kill for *Helicoverpa zea* in sweet corn; received a score of 86/100; Requested pre-submission meeting with EPA, but registrant substituted an new active ingredient that will need biochemical classification**
- **Request from USDA for registration of genetically engineered female lethal system of the New World screwworm, *Cochliomyia hominivorax;* received score of 102/100 in the new vetting process. New report of occurrence 70 miles from southern US border. Biweekly meetings will be held with USDA and EPA.**
- **Alice Axtell has offered to provide support to the program, held preliminary biopesticide regulatory information session. Alice will be involved in registration of the attractant Magnet and provided biochemical classification document for new active ingredient**

IR-4 Project

IR-4 Environmental Horticulture Program Update

Presenter: Josh Kindel



IR-4 Project

Environmental Horticulture Program

Josh Kindel

October 2025

Outline

- Grower & Extension Summary Data
- Workshop Changes
- Outstanding Data
- Program’s Future Vision
- Program’s Proposed Name Change

2025 Grower & Extension Survey

Survey Respondents by Region

Region	Count	Percent
International	7	2%
Northcentral	78	23%
Northeastern	80	24%
Southern	108	32%
Western	62	19%
Grand Total	335	100%

Respondent Affiliation

Segment	Count	Percent
Extension	19	5.7%
Government	2	0.6%
Grower	293	87.5%
Industry	9	2.7%
LCP/Interiorscape	3	0.9%
University or USDA-ARS researcher	9	2.7%

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2025 Grower & Extension Survey

Respondents by Operation

Operation	Responses
Greenhouse	200
Nursery - Field Grown	155
Nursery - Container	128
Landscape	62
Christmas Tree Farm	51
Garden Center	36
Public Garden	23
Interiorscape	16
Sod Farm	6

Respondent Pest Management Strategies

Management Strategy	Responses
Biological Control	188
Chemical Control	168
IPM	205
Organic	116
Standard weekly/monthly program	110
Spray program based on thresholds	139

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2025 Grower & Extension Survey

Respondent Crop Category

Crop Category	Responses
Cut Flowers	196
Herbaceous Perennials	175
Shrubs	157
Foliage Plants	145
Ornamental Grasses	141
Trees	121
Bedding Plants	101
Christmas Trees	59
Seasonal Potted Plants	52
Palms	27
Turf	19

Type of Data Requested

Data Type	Responses	Percent
Crop safety is needed more than efficacy	28	10%
Efficacy is needed more than crop safety	69	24%
Crop safety and efficacy needed equally	194	67%
Total responses	291	100%

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2025 Grower & Extension Survey

Weighted Ranking of Insects/Mites

Insect/Mite	Weighted Ranking
Thrips	192
Mites & Spider Mites	117
Scale & Mealybugs	115
Scarabs	87
Aphids	84
Hemiptera	41
Flea beetle / RHFB	41
Diabrotica	36
Leafhopper	29
Lepidopterans	21

Weighted Ranking of Pathogens

Pathogen	Weighted Ranking
Powdery Mildew	93
Fusarium	65
Botrytis	54
Bacterial Diseases	54
Phytophthora	49
Cercospora Leaf Spot	30
Fireblight	23
Aster Yellows	22
Nematodes	21
Pythium	16

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2025 Grower & Extension Survey

Weighted Ranking of Weeds

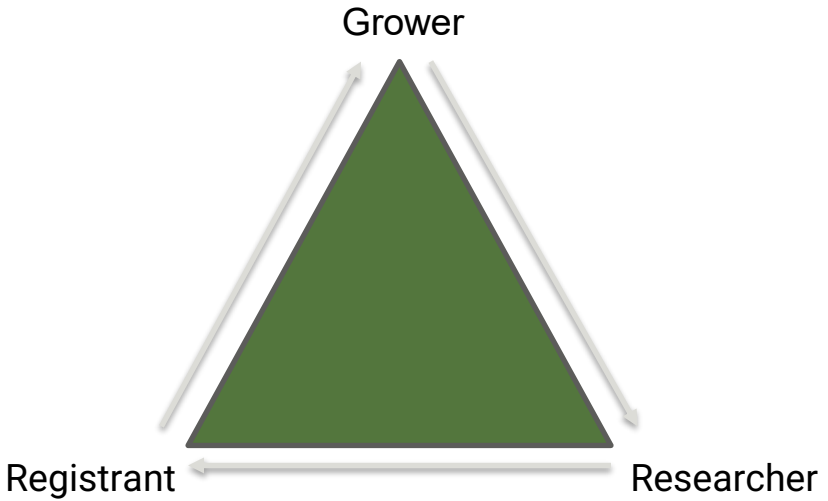
Weed	Weighted Ranking
Ragweed*	67
Runner / Vine weeds	67
Grasses	56
Summer annual weeds	53
Thistle	51
Nutsedge & Sedges	48
Horseweed* / Marestail*	46
Summer Annual Grasses	40
Lambsquarters*	39
Rhizomatous / Stoloniferous grass	25

*Indicates specific mention of resistance found

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Workshop Changes

- Elimination of sticker caucus for priority selection
- Instead, pre-workshop meetings were held leading up to the workshop
  - Three national prep meetings
  - One prep meeting per discipline
  - One prep meeting per region
- Start of the transition to utilizing Research Requests to identify solutions to Grower's Survey



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Outstanding Data

Trial Year	Data Type	Total	Ongoing	% Ongoing	Delayed	% Delayed	Cancelled	% Cancelled	Complete	% Complete
2022	Efficacy*	336	65	19%		0%	29	9%	242	72%
	Phytotoxicity	300	29	10%		0%	30	10%	241	80%
2023	Efficacy*	355	97	27%	7	2%	62	17%	189	53%
	Phytotoxicity	384	103	27%	1	0%	31	8%	249	65%
2024	Efficacy*	247	138	56%		0%	25	10%	84	34%
	Phytotoxicity	428	159	37%		0%	34	8%	235	55%
2025	Efficacy*	160	160	100%		0%		0%		0%
	Phytotoxicity	442	436	99%		0%	6	1%		0%

* Working on number of efficacy studies; data presented is on PR numbers only

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Pesticide Type per Year

Chemical Group	Algaecides		Bactericides				Fungicides				Herbicides			
Trial Year	2022	2023	2022	2023	2024	2025	2022	2023	2024	2025	2022	2023	2024	2025
# of Trials	9	17	16	3	8	4	169	254	203	180	304	262	234	209

Chemical Group	Insecticides				Miticides			Nematicides		
Trial Year	2022	2023	2024	2025	2023	2024	2025	2023	2024	2025
# of Trials	130	183	190	185	13	21	23	6	16	1

Program Future Vision

- Current state of the program is functional, but changes need to be made

- Changes being investigated:
  - How priorities are set during workshops
  - How protocols are created, including data needs
  - Report writing for efficacy studies
  - Study selection portal
  - Database backend updates

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Program Title Discussion

- Historically titled ‘Ornamental Horticulture Program’
- Changed to ‘Environmental Horticulture Program’ in 2018
- Is it time to change the title to Ornamental Horticulture Program once again?
  - Some confusion in the industry of the true activities of EH program

IR-4 Education and Training Committee Update

Presenter: Christina Dineen



Education & Training Committee Update

IR-4 PMC Meeting

October 2025

Christina Dineen

Planning for 2026 NEC

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

- **Registration is open!**
  - Tues, Feb 3rd – Wed, Feb 4th: Conference Style
  - Draft agenda mostly finalized & working on finalizing presenters

Session	Example Topics
General	GLP training, National SOPs, Life of a Project
Field Breakout	Application Types, New Technologies, eFDB
Lab Breakout	Method Development, Writing ASRs, Cleanup/SPEs

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Planning for 2026 NEC

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

- **Thurs, Feb 5th : <u>Optional</u> Field Tour**



  - <u>Tour Highlights:</u>
  - Local farm (Bohicket) w/ Clemson Extension
  - Charleston Tea Garden
  - US Veg. Lab / USDA-ARS Site
  - Boone Hall Farm Tour

IR-4 Project

National SOPs

Committee Members:
Leona Horst
Martin Beran
Mika Tolson
Alex McFall

- **SOPs in Progress**
  - App. Type Definitions (N-03.2) – **finally** in PMC review!
  - EPA Inspec. Procedures (N-01.2) – ready for PMC review
  - Storing & Maintaining Adjuvants (N-03.3) – addressing comments from E&TC; making sure to align with upcoming TS SOP

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Advisories to National SOPs

Committee Members:
Mika Tolson
Nicole Soldan
Robert Welker
Johanna Mazlo

- **Waiting for National SOP Committee Review**
  - 2006-01 Inventory & Transfer of Raw Data to HQ
- **In progress**
  - 2003-04 Test/Reference Substance Receipt & Storage
- **Next to Work on**
  - 2014-01 Maintaining Freezer Storage Systems

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Virtual Trainings Offered



- **Field Training (RFCs)**

Completed	Upcoming
July 22 Webinar Hosted by NER • Intranet overview • Recent EPA inspections • QA audit trends/standouts • eFDB various topics	**Nov 18** – to be hosted by SOR • e-Facility Files • Protocols (updates & what to look for) • FRD tips on conducting GLP trials

- **Lab Training**

Completed	Upcoming
• 07/24/25 – LC side of LC-MS • 09/30/25 – Cleanup/SPEs, Protocols/eQA	• **Nov** – TBD

IR-4 National Education Conference Awards

Presenter: Krystal Chojnacki



IR-4 Project

Award Reminder: 2026 National Education Conference

Krystal Chojnacki

Meritorious Service Award

- **One** recipient from each region, ARS and Headquarters. Due 11/5/2025.
- **Regions**/ARS/HQ will identify the recipient they want to receive the award and submit the recipient to Headquarters.

Technical Service Award

- **One** recipient from each region, ARS and Headquarters. Due 11/5/2025.
- **Regions**/ARS/HQ will identify the recipient they want to receive the award and submit the recipient to Headquarters.

IR-4 Project

National Recognition of Excellence

- One nomination from each region, ARS and Headquarters. Due on 11/5/2025.
- Nominees can be anyone associated with IR-4 except active PMC members.
- The nomination must include at least two letters of support.
- Submission will be via a Google form
- **A max of three nominees will be selected to receive an award by the PMC**

IR-4 Project

LEARN MORE

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