VERMONT AGENCY OF AGRICULTURE, FOOD AND MARKETS (AAFM)
AGRICULTURAL INNOVATION BOARD (AIB)

MEETING MINUTES

DATE: January 27, 2025

LOCATION: Vermont Agency of Agriculture, Food and Markets 94 Harvest Lane, Williston, VT 05495 – Conference Room 210 / Virtual Microsoft Teams Meeting

Member	**Present**	**Absent**
St. Pierre, Amanda	x	
Beckford, Roy	x	
Nourse, Nate	x	
Chamberlin, Jonathan		x
Pajak, Abbi		x
Corse, Leon	x	
Rebozo, Ryan		x
Schubart, Steven	x	
Wadman, Pam	x	
Harper, Wendy Sue		x
DiPietro, Laura	x	
Dwinell, Steve	x	
Griffith, Morgan	x	
Guests in Attendance		
Jill Goss Stephanie Smith Pam Bryer Shawn Lucas (UVM) Ross Saxton Andrea Kirk (VT Toxicologist, VDH) Ross Saxton (water quality specialist, AAFM) Ross Conrad (beekeeper) Patti Casey Brooke Decker Dillon Gabbert (CLA / RISE) Emily May (Xerces Society) Zach Szczukowski Jessica Tessier Heather Darby (UVM) Mia Park (Xerces Society) Alisha Utter (Farmer Consultant) Sydney Miller (UVM)		

Meeting called to order: 1:00 PM EST

Meeting adjourned: 2:50 PM EST

Next meeting: March 24, 2025

Agenda:

1:00 PM – Welcome & introductions

1:05 PM – Agenda, previous meeting minutes

1:10 PM – AAFM update, AIB annual report & preliminary farmer survey results review

1:20 PM – Neonicotinoid Research Update – Heather Darby, PhD, Agronomic and Soils Specialist, University of Vermont Extension

2:20 PM – Neonicotinoid Treated Article Seeds and Neonicotinoid Pesticides Best Management Practices Draft Rule Update

2:45 PM – Public Comments

3:00 PM – Adjourn

New Action Items

Action	Responsible Party	Complete? (date)
Provide Morgan with additional suggestions for next topics for AIB to address	AIB Members	

Ongoing Action Items

Action	Responsible Party	Complete? (date)
AIB members let Morgan know if eligible for per diem reimbursement to receive necessary paperwork	All eligible AIB members	
Provide Morgan with additional suggestions for next topics for AIB to address	AIB Members	

Welcome & Introductions, agenda & previous meeting minutes

- Meeting minutes from December accepted without edits
- Brian Kemp ended his appointment fulfilling Organic Farmer AIB member role and we have Leon Corse joining to fulfill this position.
    - Organic dairy farmer – organic for last 17 years
- At the end of February we also say goodbye to Wendy Sue who has served 3 consecutive 1 year terms. We welcome Shawn Lucas from UVM to fulfill the Soil Biologist spot

AAFM Update, AIB annual report & preliminary farmer survey results review

- Annual Report submitted to legislature on Jan 15 2025
- Received limited Vermont responses to AIB survey questions included in UVM Entomology Lab's survey to high tunnel growers
    - 5 VT responses, all selected disposal of farm materials as a concern for impact on the environment and 4 out of 5 selected microplastics as an environmental impact of concern
    - Lack of availability of alternatives and lack of knowledge of alternatives were challenges to reducing agricultural inputs
    - Survey is still open – expect to have more Vermont responses in the next month or two.
- Proposed schedule of AIB meetings every other month: March 24, May 19, July 28, Sept 22, Dec 8
    - Meeting schedule approved by members, new calendar invites will be sent

Neonicotinoid Research Update – Heather Darby, PhD, Agronomic and Soils Specialist, University of Vermont Extension

- Preliminary data, still summarizing full 2024 data
- Why use seed treatment? Wet and cold conditions are conducive to disease and insect damage to crops
- Yield responses and subsequent economic returns from seed treatment use can vary, many factors determine the impact: type of crop, planting date, weather, field conditions, management practices, and field history.
- Seed treatments commonly include: dye/colorant, binder, biologicals, inoculants, insecticides, fungicides, nematicides
- Planter dust research from ~2015-2017 showed that dust from planters contained insecticide and fungicides
    - Most research from Corn Dust Consortium published in 2017
    - Found that seed treatment was not sticking onto seed, but tested in 2014 and 2015 and hasn't been looked at since innovations in seed coatings
- UVM research collected dust during planting with dust collection units placed down wind from planted area. Dust collection units collected dust on slides with sticky substance at 0cm, 30cm, and 200cm above ground. Also collected dust from directly below planter.
    - Collected weather, and soil conditions at farms when the dust collection occurred. 2024 was a wet spring so not a lot of dust. Most fields were on sandy soils, because challenging years to plant in wet fields. Overall not good conditions to create dust
    - Detection limit <0.43 ng/cm2
    - One clothianidin detection in Middlebury farm 0.7 ng/cm2 at soil surface
    - Question: how far from planters where the dust collection units?
        - Dust collection at edge of field so the planter started next to collection units then moved away about 500ft as continued to plant through field.
    - Question: does Corn Dust Consortium (CDC) have field moisture or wind speed conditions recorded with their data for our data to compare to?
        - Will have to go back and review, don't recall
    - Dust collection directly from planter project
        - Vacuum bag placed over planter exhaust

        - Compared different seed fluency agents and tested dust released from planter for neonics
        - CDC showed some fluency agents were more abrasive than others against the seed treatment. There was not strong recommendation because results were variable. Since CDC research, seed treatment has improved so Heather wanted to test this again
        - Collection slides were placed in the vacuum bag
        - Looked at 4 different fluency agents: graphite, talc, DUST (soybean based product), Bayer Fluency Agent
            - DUST was cakey texture and may have challenges for VT growers working in wet/humid conditions
            - Graphite was significantly higher in concentration of clothianidin detected in dust collected than Bayer Fluency Agent, but not clear differences between other treatments.
            - Detections ranged from 4500-20000 ug/cm2
    - Compared 2 different seed brands that had same seed treatment (lumigen at same 1250 rate), one brand seemed to have higher clothianidin detections in dust collected directly from planter across all seed lubricants.
        - Shows there is a difference in how the seed coatings are keeping the treatment on the seed.
        - Bayer fluency agent significantly suppressed amount of neonic abrading off of seed regardless of seed company, whereas graphite significantly abraded seed treatment off of one seed company tested more than the other.
- Impact on water quality (from surface runoff and from tiled fields)
    - At St. Albans Bay, in Jewett Brook watershed, heavy clay/poorly trained soil field at Discovery Acres. 3-6 acres each of 4 plots under different management practices i.e. conservation tillage, manure injection vs broadcast, etc.
    - 2023 Heavy rainfall resulted in flush of clothianidin from tile and surface runoff water samples
    - 2024 was a drier year (less samples were collected)
        - 14 out of 29 (48%) tile samples had detectable levels of clothianidin (>1.0 ug/L)
        - 7 out of 25 (28%) surface samples had detectable levels of clothianidin
        - No detectable levels of clothianidin until Jun 7 2024
        - No sampling since end of August because has been dry so water hasn't triggered sampling
        - 2024 results were similar to last year
- Clothianidin levels in soil before planting at Discovery Acres
    - Field was in its 4th year of corn (all neonic treated corn planted)
    - Preplant soil testing in April each year
    - 2023 88% of samples detected clothianidin at 0-2.5", 44% of samples detected clothianidin at 2.5-6"
    - 2024 44% of samples detected clothianidin at 0-2.5", 44% of samples detected clothianidin at 2.5-6"
        - Possible due to less rain, but hard to say
    - End of season soil testing (Nov 2023/Oct 2024)

    - Much higher percentage of samples contained detectable clothianidin at both depths and in both years.
- Clotianidin in soil in site (Alburgh, VT) that had not had neonic-treated seed planted previously. Planted neonic-treated seed with goal to monitor clothianidin levels in soil over time.
    - In May 2023 before planting, did see some clothianidin in 2.5-6" depth
    - Clothianidin was detected in some samples throughout 2023 growing season
    - In April (preplant) 2024 saw no detectable levels of clothianidin in any samples
        - Possibility of neonic degradation, but a lot of factors at play, weather, soil conditions, etc.
- Pest damage conducive systems in VT because grubs and wireworms build up in sod years of rotation
    - For example, 2023 devastation of several hay fields from grubs and wireworm buildup when fields are rotated to hay
    - What puts us at risk? Can we predict when they are going to happen?
- Limited research, but some literature about high organic matter and tillage and cover crops impacting seed corn maggot incidence and damage
    - Looked at different management practices and combination of practices and risk to pest damage (till, no till, broadcast vs injected manure, cover crop etc)
    - Results highly variable, planted very early in cold and wet conditions, worked with statistician to understand percent probability of having damage
        - Probability/Risk of damage significantly higher if tilling or adding manure.
        - Lowest risk of damage with no-till and no manure applications.
            - Hypothesis that tillage is speeding up decomposition which is attractive to pest
            - Recommendation is typically if you plow under lots of lush green material you should wait 2-3 weeks before you plant. But not always an option for VT growers
        - Did not see differences with cover crop vs no cover crop in seed corn maggot damage (only one year data)
        - Tilling and manure happened within a week of planting
        - Ross Saxton has heard from several farmers this past year that they want to be cautious with cover crops because they are making the assumption that cover crops without neonics is going to cause more problems and crop loss. Wants to facilitate discussion and education about what we know with growers at upcoming conferences so we don't lose a lot of the progress we have made over recent years about benefits of cover crops.
        - Depends on cover crop, the majority of the cover crops in VT, if left to get large and then are typically no-till (herbicide burndown) which doesn't seem to be as conducive to pest damage. And most of what we have as cover crops is grass, which doesn't seem as attractive – there is a lot to learn!
            - Cornell has done a similar study and they also did not see an effect of cover crops on pest damage.
- Talk about monitoring flights and using growing degree day calculators to determine risk, met with Cornell and consensus is just because we see peak flight doesn't mean we will see damage. There is not enough predictability just looking at growing degree days in determining if there

will be damage. Cornell and UVM seeing that flight monitoring is not predictable to damage seen.

- Have been monitoring plant stands to see the impact of treated seed
    - Can see peaks of corn seed maggot (CSM) flights against corn populations for treated and not treated seed. Did not see a difference correlated with CSM flight monitoring.
    - Conditions have not been good for corn, regardless of seed treatment we are losing plants based on the population that was planted.
- Diamides vs neonicotinoid
    - Diamides are more expensive to produce, have lower toxicity to non-target insects compared to neonics, not as water soluble
    - Looked at diamides and spinosad seed treatments (with fungicide) in comparison to no treatment, fungicide only and neonicotinoid and fungicide treated seeds.
        - Saw corn seed damage reduced (compared to control or control with bone meal) by fungicide only, and reduced again to 24-25% damaged seed when add insecticide (no difference which type)
- Corn populations by seed treatment, 2024
    - Planted at 36000 plants/acre
    - Corn populations were reduced regardless of seed treatment, but reduced significantly more in control and control with bone meal. No difference amongst seed treatments
- Same study in soybeans had overall less damage than corn, but saw most damage in control with bone meal. No difference in damage amongst control and insecticide seed treatments
- Going to repeat all these studies in 2025, expanding on farm sites (2024 on farm data not completed yet so not shared today)
- Question: does it make a difference for type/make of planter in dust collection?
    - CDC saw some difference in planters, older plate planters vs vacuum planters, vacuum planters are what is most common today.
    - We haven't looked at comparing make of planters, but all were vacuum planters
    - Unrealistic to have solution of collecting dust from planters
- Question: what are your thoughts on spinosad as neonic alternative? Are we worried about resistance since organic producers using it as a pest management option as well?
    - Certainly a possibility. I see diamides as a closer in alternative since seed companies already offering this treatment, so more prepared to offer this alternative sooner.
- Collaborating with Cornell, their results are similar to VT's. We are having trouble identifying risk and what translates into yield loss. We have seen yield loss, but what are the conditions that lead to that loss is the focus of research now.

Neonicotinoid Treated Article Seeds and Neonicotinoid Pesticides Best Management Practices Draft Rule Update

- Draft rule and the accompanying filing set information is currently under AAFM internal review before we submit a copy of the draft rule to the Senate Committee on Agriculture and the House Committee on Agriculture, Food Resiliency, and Forestry for review as required by 6 V.S.A. § 1105a
    - No further member comment
    - Lots of opportunity for comment throughout the formal rulemaking process

Public Comments

- Received letter from the American Seed Trade Association (ASTA), CropLife America (CLA), and Biotechnology Innovation Organization (BIO)

** - indicates action items