

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

MEETING MINUTES

DATE: March 27, 2023

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

Member	Present	Absent
Ayer, Clara	x	
Beckford, Roy		x
Bradshaw, Terry	x	
Chamberlin, Jonathan	x	
Cutler, Clarice	x	
Ransom, Earl		x
Rebozo, Ryan		x
Schubart, Steven	x	
Owen, Sarah	x	
Harper, Wendy Sue	x	
DiPietro, Laura	x	
Dwinell, Steve	x	
Morgan Griffith	x	
Guests in Attendance		
Stephanie Smith		
Dave Huber		
Clark Parmelee		
Zach Szczukowski		
Heather Darby		
Fred Putnam Jr (VT Beekeepers Association)		
Brooke Decker		
Lisa Fantelli		
Bethany Creaser		

Meeting called to order: 1:00 PM EST

Meeting adjourned: 3:43 PM EST

Next meeting: Monday April 24, 2023

Agenda:

1:00 PM – Welcome & Introductions

1:05 PM – Agenda, previous meeting minutes & action item review

1:10 PM – PHARM activities update

1:25 PM – Heather Darby, Agronomy Specialist, UVM Extension
Neonicotinoid treated seed research outline

Overview of ways to reduce pest harborage from conservation tillage practices
 Outline pest pressure monitoring methods to inform seed purchase decisions
 Overview of economic threshold levels for relevant pests

2:25 PM – Sarah Owen, Vermont State Toxicologist

Literature review of risk assessment of neonicotinoid treated seeds on human health

2:35 PM – Morgan Griffith & Jill Goss, AAFM

Literature review of risk assessment of neonicotinoid treated seeds on the environment

3:00 PM – Agricultural Input Survey Results

3:15 PM – Workplan status, next meeting agenda

3:35 PM – Review of relevant 2023 Legislative Bills

3:45 PM – Public Comments

4:00 PM – Adjourn

New Action Items

Action	Responsible Party	Complete? (date)
AAFM will provide information and research on planter modifications to reduce dust from treated seeds.	AAFM	
VAAFAM will follow up with listserv contacts to see if they distributed to their respective groups and brainstorm how to increase participation in the survey	AAFM	
AAFM will conduct literature review of the EPA registration reviews for neonicotinoids	Morgan/Jill	

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	

Welcome & Introductions, agenda, previous meeting minutes & action item review

- 2/27/2023 meeting minutes accepted unchanged
- No additions/modifications to agenda

PHARM activities update

- Dave Huber (Deputy Director of Public Health and Agricultural Resource Management Division, AAFM)
 - The Agency will be posting an Agricultural Resource Management Specialist (Field Agent) position to be filled as a new position to join the current four Field Agents

serving the state. The position will help the Agency with the additional requirements of the amended pesticide rule.

- The Agency recently passed an end-of-year review of division activities relevant to pesticide regulation compliance, enforcement, environmental monitoring, and risk mitigation with the EPA
- The new Vermont Rule for Control of Pesticides has been in effect for a month, which is a quick turn around for spring and the upcoming growing season. Please reach out to Dave and the Agency with any questions.
 - Pesticide certification core exam has been updated to include elements of the new rule.
 - Updates to the manuals are on AAFM website.
- Stephanie Smith (Deputy Director of Public Health and Agricultural Resource Management Division, AAFM)
 - PHARM seed regulatory staff met with representatives of the American Seed Trade Association (ASTA), the Seed Regulatory and Testing Division at USDA, the Association of Official Seed Certifying Agencies, and the Seed Innovation and Protection Alliance to discuss federal seed law (truth in labeling law), seed certification, protection of intellectual property -plant variety protection and patent protection for design and process of the development of plant varieties.
 - PHARM staff met with representatives from seed distributors to discuss seed treatments and technology. Ninety percent of corn seed sold is treated with an array of active ingredients that are fungicides, insecticides (a neonicotinoid), nematicides, and bio-enhancers.
 - Seed Distributors at the local level order over a year in advance making the best prediction. Fall of 2022 for seed is grown out in 2023 for planting in 2024. There is a relationship between the germplasm grown and the treatments received (multiple modes of action to protect the technology).
 - There are opportunities for moving seed around the country if corn for planting needs to change (72 days to maturity or 120 days to maturity).
 - Flexibility for interstate seed distribution is necessary since demand planning is so early and cannot account for planting conditions in current season.
 - Little opportunity for customized treatment options for corn.
 - Untreated seed represents 0.6% of the seed organic market and small percentage of that seed that has GE traits but not treatments.
 - About 90% of soybean seed is untreated, however it can be treated “downstream” by another seed distributor. Soybean could be treated only with a fungicide.
 - Is possible to get customized soybean treatments depending on distributor.

Heather Darby, Agronomy Specialist, UVM Extension

- Has worked at UVM Extension for 20 years, their outreach program used to focus on helping growers decide what treatments and rates to use on seed, if any. Then it became universal to use an insecticide treatment in the planter box, applied and mixed by the grower. When it moved to seeds purchased with seed insecticide treatment already applied, growers were uncertain if it would cost more. Options then became limited, growers could select the rate of insecticide seed treatment.

- Most farmers want fungicide seed treatment, but that is almost impossible to get without the insecticide seed treatment.
 - Heather obtained fungicide-only treated seed, but requested way ahead of time and had to “sign off” on the risk of using it.
 - Using untreated seed is considered a liability by the seed company
- Because of lack of options when purchasing seed, UVM Extension has not done a lot of education around seed treatments
 - Heather recognized the gap in education about the risks associated with seed treatment, so she applied for an EPA grant to focus on education, outreach and risk management about seed treatments.
 - Applied for grant in 2019, received grant in 2022
 - Other farmer groups highlighted this education need as a priority for them
 - Scope of EPA grant is education and outreach and includes webinar series, on-farm field days, pest identification and one-on-one risk management with farmers.
 - Will have 6 farm demonstration sites with plots of fungicide-only treated corn to compare to fungicide and neonicotinoid treated corn.
 - What do you want the farmers to learn?
 - Pest life cycles, environmental implications of using treated seed, ways to reduce pesticide use, ways to reduce off-target movement of the pesticide, demonstrations (not replicated, no statistical analysis) to see what impact of neonicotinoid seed treatment has on plant stands.
- To look at how neonicotinoids move through water Heather’s team has a project at Discovery Acres that is funded through the Lake Champlain Basin Program. It is an evaluation of best management practices to reduce agricultural impact on water quality in the Jewett Brook watershed. The best management practices are being evaluated on tile-drained and non tile-drained fields.
 - Surface runoff and tile drain water samples will be collected and analyzed for neonicotinoids starting this fall (20 samples/year)
- Another study will be looking at neonicotinoids (from treated seed) in soil at Borderview Research Farm. It will be comparing neonicotinoid treated seed and non neonicotinoid treated seed with 6 planting dates and 48 plots. This project may receive funding from VAAFM.
 - This site is considered “neonic-free” because no neonicotinoids have been used there for at least 20 years.
- Vermont has 2 primary pests in corn and soybean fields: (1) seed corn maggot and (2) wireworm
 - Insecticides have been used for a very long time in VT to control seed corn maggot. It is very hard to predict if the problem is going to be severe.
 - Wireworm problems are most common in fields rotated from sod.
 - Organic corn fields only have the control option of delayed planting (when soil temperatures are above 60F) to manage seed corn maggot.
 - Late planting can make seeds less prone to fungal pathogens and seed corn maggot. But if everyone planted late there is not enough time to plant all the acres they need. So planting late is not always a practical solution, but it could work for organic farmers because often their acreage is smaller.
 - With growing degree day models to predict when/if the pest is going to be there, but not the magnitude or severity of the problem.

- There is no rescue treatment available for corn seed maggot or wireworm so there is high risk if farmers wait to see if the pest is going to be a problem or not.
 - There can be multiple generations of corn seed maggot in VT, but the first generation causes the biggest damage, especially when the corn is growing really slowly (when it's cooler weather).
- Corn seed maggot really likes decaying organic matter, so greater losses in fields with abundant decaying organic matter. No-till/conservation tillage practices are less attractive to seed corn maggot because there is no exposed decaying organic matter.
- Corn seed maggot plant injury increases (higher risk) when temperatures are cool and germination is slow.
- Corn seed maggot infestations are field-wide instead of in localized patches.
 - There is no rescue treatment other than re-planting
- Cultural controls for seed corn maggot include:
 - Practices that speed germination (i.e. planting later in the season when soil temperature is warmer)
 - Plowing in sod and green manures at least 2-3 weeks in advance of planting.
 - Growing degree day model calculations can predict fly emergence between generations and farmers can aim to plant during that time of reduced pressure
- The corn seed used in Heather's trials does have GE trait, but that trait is for lepidoptera species and therefore will not effect corn seed maggot or wireworm pests.
- Wireworms are the soil-dwelling larvae of click beetles.
 - Slug problem side-note: in VT the verdict is still out if slugs increase because neonicotinoids reduce predatory beetle populations. No-till practices lead to increased slug damage.
 - Wireworms build up in sod crops, the worst cases are when long term sod fields are planted into corn.
 - Wireworms are a longer lasting problem throughout the season. you can see issues in corn at the 4-6 leaf stage.
 - Scouting is hard about the most for wireworms
 - Bait stations (grain in hole in ground) attract wireworms.
 - 1 wireworm/bait station is the economic threshold level for treatment (5-10 bait stations per 30 acres)
 - In VT we cannot scout for wireworms in the spring because the ground has to warm up to 45F then wait 2 weeks after stations set before monitoring and by that point farmers need to plant.
 - Farmers can monitor their fields in the fall before the soil temperature drops below 45F and after the corn is harvested.
 - There is another wireworm scouting method involving shovels of soil throughout the field
- Access to seed
 - Sometimes farmers are charged more for untreated seed
 - Albert Lea Seed company focuses on non-gmo/organic seed and catering to the market that wants choice. They advertise \$10/bag discount for insecticide-free seed. Although all the corn is not available with this option and in the long run saves the farmer \$3-5 per acre, so farmers have to weigh if that savings is worth the unknown risk.

- Heather's webinar series will begin next Fall
- Send Heather any resources you would like to share with farmers
- If you were king what would you change?
 - Manage planters and dust and pollinator communications
 - Slight modifications to planters can reduce dust from treated seeds so state programs to modify vacuum planters may be beneficial
 - Jonathan Chamberlin provided Dr. Schaafsma doing research in Guelph, Ontario about planter modifications to reduce dust
 - ** AAFM will provide information and research on planter modifications to reduce dust from treated seeds.
- AIB members should consider attending field days with Heather, but a trip to Borderview Research Farm should be planned for members in late June/early July.

Sarah Owen, Vermont State Toxicologist: Literature review of risk assessment of neonicotinoid treated seeds on human health

- Sarah Owen reviewed the EPA human health risk assessment for imidacloprid.
- There are dietary exposures and occupational exposure populations.
- For dietary exposures the EPA looks if residues are expected in the food crop and set a tolerance to be included in the total risk. Residue from seed treatment use of imidacloprid is negligible. Therefore in the dietary assessment most exposure is from foliar use of the active ingredient.
- For occupational exposures there were 2 scenarios in the assessment: (1) farmer buys the seed already treated and (2) farmer treats the seed themselves.
 - There is more exposure when the farmer treats the seed themselves
 - There is very little risk for exposure when the farmer buys the seed already treated
- Although only reviewed imidacloprid, she would guess the other neonicotinoids would be similar if they have a similar use profile.
- Neonicotinoids have a favorable human health profile compared to the organophosphates that they replaced, which were a high risk to human health.
- Sarah will continue to review the remaining neonicotinoid human health risk assessments and report to the AIB if she sees something of note. The complete review of human health risk assessment should be complete by the fall for a report.

Morgan Griffith, Agrichemical Program Manager, Agency of Agriculture, Food and Markets: Literature review of risk assessment of neonicotinoid treated seeds on the environment

- Summary of select research and review articles provided by AIB members relevant to neonicotinoid treated seeds and their impact on soil, water, areas adjacent to agricultural fields, pollinators and other organisms.
- Refer to presentation slides and notes with the meeting materials for details about the references summarized relevant to the environmental impacts of neonicotinoid treated seeds.
 - An annotated bibliography was provided to AIB members
- ** AAFM will conduct literature review of the EPA registration reviews for neonicotinoids

Agricultural Input Survey Results

- Refer to survey results presentation slides for details and statistics of responses.

- AIB members are concerned the responses are not a good representation of corn acreage in the state.
- Responses seem to show we received good representation of organic dairy farmers in VT
- What is the number of responses to a survey that make the results statistically significant?
- AIB members (Clara, Steve Schubart, Wendy Sue, Terry, Jonathan, Clarice) think we should send the survey out again, but with a revised plan of dissemination (i.e. targeting specific segments) to increase participation.
 - **VAAFM will follow up with listserv contacts to see if they distributed to their respective groups and brainstorm how to increase participation in the survey
 - Can we utilize the VT Farm Bureau? CT River Valley Watershed Group?

Workplan status, next meeting agenda

- AIB members agree with having the VT Beekeepers Association present at the next meeting (April 24)
- Members would like to hear perspectives/research from entomologists in regions like Pennsylvania and New York, as well as farmers and researchers in Ontario to address the topics outlined in the workplan.

Review of relevant 2023 Legislative Bills

- AAFM is only aware of a bill (H.431) that was introduced, read first time and referred to the Committee on Environment and Energy that is an act relating to the use of pesticide chlorpyrifos and the herbicides glyphosate and atrazine.

Public Comments

- None

** - indicates action item