

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

MEETING MINUTES

DATE: May 22, 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 |
|---|----------------|---------------|
| St. Pierre, Amanda | | 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 | |
| Griffith, Morgan | x | |
| Guests in Attendance | | |
| Stephanie Smith Jill Goss Dave Huber Clark Parmelee Brooke Decker Jonathan Wolff (Biotechnology Innovation Organization / CropLife America) Lucas Rhoads (Natural Resources Defense Council) Fred Putnam Jr (VT Beekeepers Association) Gene Harrington (Biotechnology Innovation Organization) Lisa Fantelli Patti Casey Heather Darby Dillon Gabbert (Bayer Crop Science) | | |

Meeting called to order: 1:00 PM EST

Meeting adjourned: 3:08 PM EST

Next meeting: Monday June 26, 2023

Agenda:

1:00 PM – Welcome & Introductions

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

1:10 PM – PHARM activities update
Agricultural Input Survey Re-distribution Plan

1:30 PM – Gene Harrington, State Government Affairs, Agriculture & Environment, Biotechnology Innovation Organization
Review of Relevant State Legislation

2:00 PM – Jill Goss, Agency of Agriculture, Food & Markets
Review of Treated Seed Dust-Off Research

2:30 PM – Heather Darby, Agronomy Specialist, UVM Extension
Research Update
Vacuum Planter Modifications

3:00 PM – Workplan status, future meeting agendas

3:40 PM – Review of relevant 2023 Legislative Bills

3:45 PM – Public Comments

4:00 PM – Adjourn

New Action Items

| Action | Responsible Party | Complete? (date) |
|---|--------------------------|-------------------------|
| Provide AIB members with registration information for Annual Field Day at Borderview Research Farm on July 27 | AAFM | |
| Organize state legislation information in a spreadsheet of other states' activities | AAFM | |
| AIB members please send any additional questions we would like answered about Ontario and Quebec regulations by June 26 meeting | AIB members | |
| Summarize Canada's PMRA overview of pollinator protection initiatives and BMPs on a federal level | AAFM | |
| AAFM will ask Agency Counsel for interpretation of Topic G in work plan | AAFM | |

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 | |
| AAFM will provide information and research on planter modifications to reduce dust from treated seeds. | AAFM | 5/22/2023 |

| | | |
|---|------------------|-----------|
| Compare crop acreage numbers to seed tonnage reports | AAFM | |
| Secretary Tebbetts send email to Ag organizations that provide education and technical assistance to increase participation in Ag Input Survey | AAFM | 5/10/2023 |
| Look into possibility of AIB hearing presentation about economic impact of loss of pollinators to food crops. Wendy Sue will reach out to her colleague to ask if they were interested in presenting to AIB | Wendy Sue Harper | |

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

- 4/24/2023 meeting minutes accepted with one edit from member Clarice Cutler
 - 4/24/2023 minutes have been updated and uploaded to the AIB website and Teams site.
- No additions/modifications to agenda

PHARM activities update

- Morgan Griffith (Agrichemical Program Manager, AAFM)
 - Re-distribution of Agricultural Inputs survey
 - Anson sent out an email asking for organization help in disseminating the survey to their members. If we received a response then we shared the survey link.
 - Link sent to:

| | | | Survey sent? |
|--|---------------------------------------|--------------------------------------|--|
| Farm Bureau | Mary White (VP) | fortwaitefarm@gmail.com | link sent to Tommy O'Connor Executive Director 5/11/23 |
| | General contact | vtfb@gmavt.net | |
| VT tree fruit growers | Eric Boire (VTFGA Executive Director) | EricBoire@gmail.com | |
| | Terry Bradshaw | terence.bradshaw@uvm.edu | link sent 5/10/23 |
| Dairy Farmers of America | Kiersten Bourgeois | kiersten.bourgeois@dfamilk.com | |
| Agrimark | Jed Davis | jdavis@cabotcheese.com | |
| Vermont Organic Farmers | Nicole Dehne | nicole@vermontorganic.org | link sent 5/10/23 |
| Vermont Dairy Producers Alliance; | Amanda St. Pierre | dfwt06@yahoo.com | |
| Connecticut River Watershed Alliance; | Paul Doton | pdoton@gmail.com | |
| Franklin/Grand Island Farmer's Watershed Alliance | General contact | farmerswatershedalliancenw@gmail.com | |
| Vermont Vegetable and Berry Growers Association | Vern Grubinger | vernon.grubinger@uvm.edu | |
| Northeast Organic Farmers Association of Vermont, Coordinator, | Christine Hill | christine@nofavt.org | link sent to Lindsey Brand 5/10/23 |
| Vermont Sugar Makers Association | Allison Hope (Executive Director) | allison@vermontmaple.org | |
| Northern Grain Growers Association | Todd Hardie | todd@thornhillfarmvermont.com | link sent 5/10/23 |
| Vermont Horse Council | Mikayla Pick (President) | thesaddlegal@gmail.com | |
| Vermont Sheep and Goat Association | Dave Martin (President) | settlementfarm@comcast.net | link sent 5/10/23 |
| Vermont Young Farmers Coalition | General contact | vtyoungfarmers@gmail.com | |
| Champlain Valley Farmer Coalition | Vijay Nazareth, Executive Director | info@cvfc-vt.com | link sent 5/10/23 |
| Vermont Association of Conservation Districts | Jill Arace (Executive Director) | jill.arace@vacd.org | |
| New Hampshire-Vermont Christmas Tree Growers Association | General contact | info@nh-vtchristmastree.org | link sent to Jim Horst 5/12/23 |
| Vermont Grass Farmers Association | Meghan Sheradin (Executive Director) | meghan@vtgrassfarmers.org | |

- Have received 4 responses since these communications have been sent
- Dave Huber (Deputy Director of Public Health and Agricultural Resource Management Division, AAFM)
 - Has printed copies of the new Vermont Rule for Control of Pesticides available for AIB members
 - PHARM is in the process of hiring a 5th Field Agent.

Gene Harrington, State Government Affairs, Agriculture & Environment, Biotechnology Innovation Organization: Review of Relevant State Legislation

- Review of state neonicotinoid use laws and regulations
- Federal Regulations
 - FIFRA mandates EPA conduct risk assessments to review products' human health, ecological, and environmental risks.
 - Registration review of products every 15 years, neonics are currently going through this re-registration review. Neonics are expected to finish the review in 2024 with anticipated new mitigation measures in the final interim decision, i.e. lower rates, restricted uses, etc.
 - EPA requested the neonic registrants implement a national stewardship program to increase grower awareness and use of BMPs to reduce ecological risks.
 - This was introduced in the PID and is still being worked on.
 - Treated article exemption under Section 25b (examples are treated clothing, lumber, sponges)
 - The treated seed is not registered as a pesticide but the product used to treat the seed is registered for that use and is used to protect that substance or the article itself.
 - Because the article is being protected by the already regulated and approved pesticide, there is no need to duplicate.
 - In 2016, VT passed legislation for VPAC & AAFM to recommend regulation of treated articles (in 2021 this was shifted to the AIB) and in 2022 AIB has to develop BMPs for treated seeds
 - This makes VT ahead of the curve and different than other states.
 - In Sept 2022, EPA dismissed a 2017 petition requesting EPA to regulate treated seed
 - Their response was that they are already regulating the pesticide product and the use of treatment on seeds
 - EPA intends to work with states to seek information on pesticide seed treatment
 - Federal Seed Act (FSA) is administered by the USDA and has labeling requirements for treated seed
 - What product used (either active ingredient or trade name) to treat must be on the label. As well as the statement "do not use for food, feed, or oil purposes"
 - Federal Food, Drug and Cosmetic Act administered by the FDA, required treated seed to be colored
- State regulations
 - Oregon 2015 (in response to 2013 bee kill incident) bans neonic applications to linden and basswood trees [does not apply to treated seed]
 - Maryland 2016 law restricts homeowner/consumer use of neonics [does not apply to farmers or treated seed]
 - Connecticut 2016 law neonics made "restricted use", no applications to linden or basswood trees, and required CT dept of Ag to develop BMPs for minimizing release of neonic dust from treated seeds
 - 1st state to have regulation relevant to treated seeds
 - [BMPHandlingNeonicotinoidTreatedSeeds.pdf \(ct.gov\)](#)
 - Dust was primary concern in passing CT law in 2016

- Vermont 2019 law outdoor use neonics registered as restricted use [expressly exempted treated article seed]
- Maine 2021 law adopt rulemaking prohibiting the use of neonic products used in outdoor residential landscapes. September 2022 rules became effective making certain neonics state restricted pesticides [does not apply to treated seed]
- Vermont 2022 law requires AAFM after AIB consultation to adopt rules for BMPs for use of neonic treated article seeds. Also report by AIB on whether BMPs should be adopted for treated seeds that are not neonic treated seeds.
- Massachusetts 2022 rulemaking made neonics with outdoor non-structural and non-agricultural uses state restricted use [does not impact ag uses, including treated seeds]
- New York 2022 rulemaking that beginning January 1 2023 neonics labeled for foliar, outdoor use, and/or seed treatment will be reclassified as state restricted use
- New Jersey 2022 law adopt rules classifying neonics as restricted use. As of Oct 31 2023 person restricted from selling or using any neonic unless pesticide is registered and only be applied by licensed applicator to an agricultural plant. [expressly exempts any application to protect agricultural seed]
- Rhode Island 2022 law effective Jan 1 2024 makes outdoor neonic use only by certified applicators (restricted use). Also no applications on linden or basswood trees or any plant in bloom. [expressly exempts treated seeds]
- Colorado 2023 law adopt rules making neonic restricted use [law does not mention treated seed – CO dept of ag believes seed would be out of scope]
- Minnesota 2023 legislation 1) prohibits use of neonic in wildlife management area, state park, etc 2) Ag and Pollution Control Agency has to develop consumer guidance regarding the proper use and disposal of treated seed 3) this guidance has to be posted obviously at retail location where selling treated seed 4) prohibits person from using/storing/handling/distributing/disposing treated seed in manner that endangers humans, food, livestock, fish, wildlife or will cause adverse effects on environment 5) certain cities can limit residential use of neonics
- Only 2 that are specific to treated seed are CT and NY
 - CT BMPs shall include 1) methods to minimize dust when pouring seed from bag into planter 2) guidance on positioning of vacuum system discharge to direct towards soil 3) time frames for mowing of flowering vegetation next to crop fields 4) Identify weather conditions that minimize dust drift 5) suggestions for use of seed lubricants to minimize dust drift
 - NY restricted use of seed treatment, but does not apply to the planting of the treated seed
- Minnesota issued BMPs for using neonic treated seed
 - [Stewardship Guidelines and Best Management Practices for Neonicotinoid Insecticide-Treated Seed \(state.mn.us\)](#)
 - 2016 MN reviewed of neonic use, registration and pollinator impacts
 - [Executive summary review of neonicotinoids \(state.mn.us\)](#)
- Washington 2021 legislation directing Dept of Ag (WSDA) to write report that included recommendations addressing risk to bees/pollinators from use of neonics and treated seeds

- In that report, “WSDA know of no bee deaths related to neonicotinoid pesticide applications or seed treatments in the last seven years”
 - Makes no recommendations related to neonic treated seed
 - [WSDA 2021 Report to the State Legislature -- Protection of Pollinator Health: Pollinators and Neonicotinoids \(betterseed.org\)](#)
 - Pending state neonic treated seed legislation
 - CA (bill number is AB 1042) and NY (New York legislation A. 3226/S. 1856) are considering legislation that would ban or restrict use of neonic treated seed
 - [Bill Text: CA AB1042 | 2023-2024 | Regular Session | Introduced | LegiScan](#)
 - [Bill Search and Legislative Information | New York State Assembly](#)
 - NY bill would ban neonic treated seed by Jan 2026, has passed the Assembly, but has not passed the Senate - session adjourns June 8
 - CA bill is broader treated seed in general giving CA authority to develop regulations for use of treated seed. Going to Assembly this week – session is through August
 - Nevada (AB 162) and Connecticut (SB 963) are considering neonic legislation but don’t cover treated seeds
 - California Department of Pesticide Regulation rejected petition by several environmental groups to regulate neonic treated seeds in 2020
 - In Feb 2023 many of same environmental groups filed suit against CA DPR
 - In Feb 2022 CA DPR noticed of proposed rulemaking to more closely regulate how neonics can be used in agricultural settings and quoted that EPA pollinator risk assessments evaluated risks from residues in pollen and nectar of crops from seed treatment applications and found that seed treated applications result in low neonic residues in pollen and nectar so low risk to honey bees. CA DPR agrees with EPA and therefore will not include seed treatment applications in neonic rulemaking.
- **When AAFM/AIB write report we should organize this information in a spreadsheet of other states’ activities

Jill Goss, Agricultural Resource Management Specialist, Agency of Agriculture, Food and Markets:
Review of Treated Seed Dust-off Research

- Reviewed Dr. Art Schaafsma and others’ research on neonic treated seed fugitive dust
- Dr. Schaafsma was interviewed by Real Agriculture ([Planter Modification Can Fix Neonic Problem, says University of Guelph Researcher - YouTube](#)) and said that dust-off of neonic is a machinery problem and can be mitigated by 1) clean the air that is sucked into the planter and 2) clean the air as it is exhausted from the planter
 - These modifications can eliminate over 95% of the fugitive neonic dust from treated seed
- Once in the ground, seed treatments are shown to stay relatively close to the site it is planted in. But the dust is subject to be redistributed
- Schaafsma tested traditional seed lubricants (talc and/or graphite) vs Bayer Crop Science’s Fluency agent and found that Fluency had 95% efficiency in the lab, but only 60% efficiency in the field and concluded that the difference was due to use of vacuum planters.

- Schaafsma says that even when redirect exhaust to go back onto the soil there is still a possibility of redistribution from the soil surface.
- Some ideas suggested by Schaafsma for consideration:
 - Make seed coatings more abrasive resistant
 - Add an additional coating to make more abrasive resistant
 - Use filters on intake and exhaust air of vacuum planters
 - Use cyclone machines to clean exhaust air prior to release into atmosphere
 - Applying dust-off with use of coultter planter (coultter planter applies the treatment into a furrow with the seeds)
- Corn Dust Research Consortium (CDRC) study in April 2013 to look at Bayer Fluency lubricant vs talc/graphite ([Neonicotinoid Contaminated Dust and Pollinator Exposure during Planting: Results from 2013 – Field Crop News](#)) by Tracey Baute
 - Pre-study monitoring conducted in range 2-3km of the 9 paired study fields and continued weekly from planting to week 6 (collected pollen and dead bees for ID and residue analysis)
 - Weekly scouting around field sites and at bee hives to evaluate pollen available
 - Findings:
 - Neonic dust was emitted from exhaust of vacuum planters – captured directly at exhaust and at dust towers 2m above ground downwind of planting (suggests dust leaves field via wind drift)
 - Found 28% reduction in neonic ingredient in the planter exhaust when using Bayer Fluency
 - Planters have direct effect on what is found in/on flowering resources downwind (correlation between dust escaping planter and downwind levels on dandelions)
 - Found neonic residues in standing water, in soil at field surface (top 5cm), in dry soil dust stirred up when planter moves through, and in virgin corn pollen at tasseling BUT residues were several orders of magnitude lower than residues found escaping the planter manifolds.
 - This study resulted in PMRA/OMAF and MRA's BMPs for pollinator protection and responsible use of insecticide seed treatments
 - [Protecting pollinators when using treated seed - best management practices - Canada.ca](#)
- Field Crop News: What growers do to mitigate dust drift at planting
 - Use fluency agent (not graphite/talc)
 - Adapt equipment to direct exhaust air downward to the ground
 - Alert beekeepers in the area prior to planting to allow time to relocate hives
 - Adapt conservation tillage to limit loss of soils which can have neonic residues
 - Follow IPM, using treated seed only when indicated
 - Control blooming weeds prior to planting treated seeds to reduce pollinator attraction to fields
 - Future steps may include using polymers in seed coat, filtering air taken into planters so less abrasive dust

- Environmental Science & Technology paper: Quantifying neonic residues escaping during maize planting with vacuum planters ([Quantifying Neonicotinoid Insecticide Residues Escaping during Maize Planting with Vacuum Planters | Environmental Science & Technology \(acs.org\)](#))
 - German study had found that emissions from pneumatic planters were 4% of the applied dose to seed
 - Italian study reported 0.52-1.85% of seed treatment in emissions
 - Possible routes of escape:
 - During seed planting
 - During routine cleaning of equipment
 - Dry and windy planting conditions can increase spread of dust
 - Decrease of the planter's fan airflow of 30% may reduce dust emission by more than 80%
 - 2013-2014 study in Ontario
 - Collected soil dust samples pre-plant, sampled planter exhaust, dust sticky trap towers downwind
 - On average loss of 0.21% of treatment rate measured as residue in dust. 95.8% of that was from seed treatment residues and remaining 4.2% was from disturbed field soils
 - Need to mitigate release of neonic fugitive dust from:
 - Soil dust with neonic residues from previous applications entering intake of planter
 - Dry dust entering intake causing abrasion of seed coating
 - Added talc causing abrasion of seed coating
 - Researchers recommend reducing the dust from planting by:
 - Develop seed coatings to improve adherence of active ingredients to treated seed
 - Reducing abrasion from talc or from surface dust entering vacuum air stream
 - Removing active ingredient from planter exhaust
 - Adopting conservation tillage practices to reduce surface soil disturbance before, during and after planting
 - "...results unequivocally show that well over 95% of the exposure to non-target organisms for neonicotinoid insecticide seed treatment use originates from the exhaust during planting..."
- Pest Management Science paper: The role of field dust in pesticide drift when pesticide treated maize seeds are planted with vacuum-type planters ([The role of field dust in pesticide drift when pesticide-treated maize seeds are planted with vacuum-type planters - Schaafsma - 2018 - Pest Management Science - Wiley Online Library](#))
 - Field dust entering vacuum planters is abrasive to seed treatments and increases amount of treatment lost via exhaust – 2.6% on average 12.6% worst case scenario
 - Residues in soil from previous years contribute to residues in exhaust
 - Filtering the exhaust air in this study was main contributing factor to the 98% reduction in fugitive neonic achieved.
 - But have to figure out what to do with the spent/used filters that have pesticide residues on them

- There are differences among types and brands of planters
- Question: are there any more recent studies on this topic?
 - Have not found any, confirmed by Heather Darby that there is not a lot of recent research
- Question: have these ideas been implemented in VT?
 - Heather Darby answered that no, this topic has not been a major educational topic to VT Ag communities. Farmers have largely no idea about this area of research or opportunities for mitigation. Her research group has started talking about planter modifications about a month ago and VT farmers received it with interest and excitement.
 - But need realistic practical options
 - Nearly 60-70% of VT planters are pneumatic

Heather Darby, Agronomy Specialist, UVM Extension: Research Update and Vacuum Planter Modifications

- Gave an update on her treated seed research plots and sampling
 - On farm studies have been planted – neonic treated seed vs fungicide only treated seed
 - Wireworm bait traps were put out 2 weeks prior to planting, removed before planting and numbers per trap calculated
 - Seed corn maggot fly sticky traps were put out to look at populations and peak flight timing
 - Peak flight likely early last week in Alburgh
 - The peak flight was timed when farmers were most likely planting
 - The first plantings are starting to emerge now so will evaluate in the field in the next few weeks to see any losses from corn seed maggot
 - Have a research study where corn is planted at different dates (neonic treated vs fungicide only) to see coordination with peak corn seed maggot flight
 - Soil samples have been taken and sent to the lab for analysis
 - Only a few water samples collected because there has been too little rain
- Goal for her team to install a couple different dust mitigation systems on the UVM planters over the summer and highlight them at the Annual Field Day.
 - Her team will learn about how to modify a planter to mitigate dust and pass along what they learned to the farmers
 - When first introduced topic to farmers they were wondering what to do with the spent/used filter cartridges
 - Heather’s team could not find a pre-assembled planter modification kit available (even in Canada) so will fabricate one themselves and showcase on the 3 different planters that UVM owns
- AIB members are welcome to come to the Annual Field day on July 27 at Borderview Research Farm where the afternoon session will specifically be focused on this topic
 - **AAFM will provide AIB members with registration information
 - This will be in place of a specific AIB field trip to Heather’s research fields

Workplan status, next meeting agenda

- Ontario & Quebec regulation overview. We have some summary type documents posted to Teams, but we are reaching out to Crop Life Canada to help present to the board about the neonic treated seed requirements in both regions.
 - Some questions we have asked to be addressed in this presentation are:
 - Has there been a change in usage of neonic treated seeds since requirements in place?
 - Are farmers following the requirements in order to get NTS? Or are they just planting untreated? Or just not planting anything?
 - What products, made by what manufacturers, are registered as alternatives to neonics as seed treatments? What diamides products are registered?
 - **AIB members please send any additional questions we would like answered about Ontario and Quebec regulations by June 26 meeting
 - Has there been an impact to farmers under the new rules?
 - Provide an example of a treated seed bag label with required language?
 - How does having a diverse landscape with non-pesticide treated forage providing alternative pollen sources affect impact of neonic treated seeds on pollinators?
 - Also have Louis Robert, retired from Quebec Ministry of Agriculture, Fisheries and Food (MAPAQ), available and willing to present at the July meeting about Quebec's regulations
- ** AAFM will summarize Canada's PMRA overview of pollinator protection initiatives and BMPs on a federal level
- Other presenters we have lined up are:
 - Elson Shields (retired from Cornell) to talk about his study on seed corn maggot and the economic impacts of not having NTS
 - John Tooker (entomologist from Penn State) to talk about IPM and NTS
 - Corteva/Pioneer seed presentation about treated seed logistics within the US and maybe in combination with a Corteva representative (Christine Hazel, Global Regulatory Leader) to talk about the economic benefits and efficacy of seed treatments.
- ** AAFM will ask Agency Counsel for interpretation of Topic G in work plan

Review of relevant 2023 Legislative Bills

- None
- This section of the agenda will be removed for future meeting until the 2024 legislative session begins.

Public Comments

- None

** - indicates action item