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

MEETING MINUTES

DATE: July 25, 2022

LOCATION: 116 State St. Montpelier, VT / Virtual Microsoft Teams Meeting

Member	Present	Absent
Ayer, Clara	x	
Beckford, Roy	x	
Bradshaw, Terry	x	
Chamberlin, Jonathan	x	
Gandhi, Kanika	x	
Giguere, Cary (Proxy: Clark Parmelee)	x	
LaFlamme, Pete (Clarice Cutler)	x	
Ransom, Earl		x
Rebozo, Ryan	x	
Schubart, Steven	x	
Vose, Sarah	x	
Wendy Sue Harper	x	
Guests in Attendance		
Morgan Griffith Andrew Munkres (VBA) Laura Johnson (UVM Ext) Jared Carpenter (Lake Champlain Committee) Judy Bellairs (Sierra Club VT) Emma Shuldice (William Shuldice & Assoc)		

Meeting called to order: 1:06 PM EST

Meeting adjourned: 4:01PM EST

Announcements:

Cary Giguere no longer with the Agency of Agriculture, now works for the Cannabis Control Board

Proposed next meeting Monday, September 26 (members present are available) virtual with in person option

Leif Richardson and Karen Morrison are unable to attend today's meeting

Business:

AGENDA:

1:00 – 1:30

- Overview on Materials provided (Terry Bradshaw)

1:30 – 2:00pm:

- Update from VT Beekeepers Association (Andrew Munkres)

2:00 – 2:30pm:

- Leif Richardson - *Invited*
- Karen Morrison - *Invited*

2:30 – 3:00 pm:

- AAFM Presentation on Solutions/Ideas Presented (Kanika Gandhi)

3:00 – 3:45pm:

- Board member discussion, follow up questions, and policy ideas for the legislature report

NB: Board member discussion will be used exclusively for board member input, meeting guests are asked to hold commentary until the Public Comment agenda portion

3:45 – 3:55pm:

- Public Comment

3:55 – 4:00pm:

- Next Meeting Date
- Housekeeping/logistical questions

Objective of this meeting is to have core group of people to work on BMPs and other H.626 deliverables which can be worked on virtually before next meeting. Can consult with Karen Morrison (California) and others as needed.

Update from VT Beekeepers Association (President - Andrew Munkres)

- VBA – has over 600 members includes backyard/hobby beekeepers
    - Majority of colonies in VT are managed by commercial beekeepers (300+ colonies)
    - Majority of beekeepers in VT are backyard/hobbyist
- Honey Bees
    - Like livestock that cannot be fenced in, forage for nectar, pollen, and water.
        - Nectar provides carbohydrates, which is all adults need
            - Will fly farther for more concentrated sugar solution in nectar

        - Young bees need protein so they need pollen. Pollen is fermented and stored in honeycomb and fed to larva.
        - Water essential to mix with pollen for food and also for cooling of the hive
    - Nectar, pollen and water are potential routes of chemical exposure
    - Benefits of honeybees
        - Produce honey $2-3 million every year
        - Most of impact of honeybees in VT is not measured
        - Pollination services of colonies. Commercial pollination colonies are made up of only honeybee foragers and are specialized for crops
        - Incidental pollination. Colony will pollenate within 2-4 mile radius
        - Prefer to forage within 1 mile of hive
    - State maintains database of apiary locations
        - Site selection starts with at least 2 miles away from other commercial beekeepers, then find landowner, then find windbreak north and west (ideally full southern exposure for heat in winter), accessible by truck, not visible from road to avoid theft, avoid poisoning from nearby agricultural crops.
            - Champlain valley is some of the best honeybee forage in New England (limestone soil provides forage with best nectar)
    - Bees dying as consequence of multiple factors
        - Controlled by beekeeper – parasitic mites, pathogens, disease.
            - This is not sole cause of bee decline/colony collapse
            - Only after neonic exposure was pathogen killing bees. Synergistic effect of neonic exposure and mite/pathogen pressure
        - Beyond control – climate change, asynchronistic bloom, drought
        - Controlled through policy – pesticides
            - Beekeepers have little control over what bees exposed to. Try to locate colonies far from corn/field crops, but difficult in VT.
        - Honeybees are easier to study than native pollinators, but the native pollinators are more susceptible to pesticides so studies underestimate pesticide exposure risk.
        - Fungicides can affect the fermentation of pollen for food for larva
        - Q: are treated seeds better/worse than broadcast insecticide sprays?
- Neonicotinoids
    - Different than previous options because systemic. VBA concerned as seed treatment because most extensive use
    - Persist 30-40 days when exposed to sun, persist 3-4 years in soil from seed treatment, get taken up by any plants in that soil because neonics are water soluble. 50% of soil level has been found expressed in plants
        - UVM master's thesis wildflowers growing in/near treated seed fields have 50% neonic soil level in pollen/nectar
    - 2 types of neonics: 1. nitroguanidine neonics (imidacloprid, thiamethoxam, clothianidin, and dinotefuran) – used mostly on treated seeds 2. cyanonamidine neonics (thiacloprid and acetamiprid) 1000x less toxic than nitroguanidine neonics.

    - Quebec studies are comparable to VT because comparable soil organic matter. Seed Corn Maggot is primary reason why treated seeds used and they are more prevalent in higher organic matter soil.
        - Strips of neonic treated corn vs non treated corn in fields that had not previously been planted in neonic treated seeds. No significant difference in yield, no better economic outcomes with neonic treated seed corn. 2013-2015
    - Used because treated seeds are cheap insurance that you might not need.
    - Upwards of 98% of corn in VT are treated seed – if fungicide only treated seeds to his knowledge no non-target effects
- How honeybees are exposed to neonics and how they are affected
    - Exposed to dust from planting
        - 32-57ppb has been seen on nearby plants from settling dust from air planters
        - 34% from planting dust, other 66% from nectar, pollen, water
    - Pollen, nectar, guttation fluid are toxic
        - Other nearby plants' pollen, nectar and guttation fluid contain levels of neonics
    - Soil levels can affect native bees raising their young in the ground
    - Surface water contain neonic residues
    - Acute exposure – kills the honeybees quickly
    - Chronic exposure – causes death overtime
    - LD50 are less than 1 ppb, but too late for beekeepers if 50% of their colonies are dead
    - LOAEC = lowest observable adverse effect concentration is more applicable to beekeepers
        - 74% exposures are over LOAEC for physical deformities
        - 58% exposures over LOAEC for behavioral changes
        - 37% exposures over LOAEC for reproduction changes
        - Vegetables, ornamentals, and fruits also showing exposures over LOAEC
        - 2020 Cornell University report
- Effects on beekeeping industry
    - Since 2010-2014 seen increase in winter honeybee losses in VT (lose half colonies every winter)
        - Keeping bee replacements on hand, and some trying to propagate enough colonies
        - Studies have been done in NY, Quebec, etc.
- Regulations around the world have they been successful or not?
    - Ontario reduce neonic by 80% extremely effective, frustrated a lot of farmers. Require that you have a problem before you apply a pesticide. Have to monitor for pest and can use treated seed if show above threshold
        - Has to be minimum of 4 years before you can see if policy is making a difference for bee health because can persist in soil that long
    - NY proposed ban on neonic seed treatments by 2025, all turf and ornamental neonic use banned by 2024 – didn't pass this session
    - EU ban since 2018 – banned nitroguanidine neonic class.
- VBA recommendations
    - Air planters should have exhaust filters and air traps so dust captured
    - Alternatives to neonics

        - Organophosphates are not good option because are extremely toxic to honeybees
        - Pyrethroid insecticides are less toxic to bees, some toxicity to fish. Have to apply to soil while planting, not systemic, so not persistent in environment
        - Most promising alternative is anthranilic diamides because they are systemic and can be used as seed treatments, but are a little more expensive. (are any registered for use in USA?)
            - Much less toxic to pollinators, but just as effective insecticide
            - If continue to use treated seed without pest pressure then you should ban just nitroguanidine neonicotinoids to leave some options
    - 432pg report from Cornell resulted in proposed NY legislature
        - Andrew will send link to NY testimony

Overview on Materials provided (Terry Bradshaw)
Remind us Pesticide policy regulated by FIFRA administered by the states, a few states are more strict.

Information given to EPA by pesticide manufacturers, standards are very rigorous in terms of what they have to test for. Re-evaluation as products re-registered.

Neonics replaced organophosphates because less mammalian toxicity.

Our job is to evaluate for all potential impacts, not just honeybees. EPA has published bioassessments of clothianidin, imidacloprid, thiamethoxam and these assessments indicate next steps are probably more federal regulations because of their risk to endangered species and habitats.

Still haven't heard quantitative evidence for need for early season protection for corn/field crops.

3-4 insecticide applications in apples now, down from 6-8 applications because of IPM. Don't see anyone applying IPM strategies to field crops.

Pollinator committee did not recommend prophylactic treatment in field crops, UVM does not have field crop entomologist to support push for IPM in field crops.

Up to this group to make some recommendations and implement them.

Watch out for unintended consequences of banning pesticide products or classes of pesticides.

It is a problem if farmers don't know they are applying pesticide when using products intended to be added to the seed box when planting.

There need to be options for farmers, either seed treatment or insecticide application.

Questions that have not been answered yet

What percent of fields would be over threshold if scouted and monitored?

What is economic threshold required to justify a treatment?

Pesticide policy best done at federal level, so do we wait so our farms can remain competitive? What are EPA plans?

Are BMPs for farming without Neonicotinoids or are our BMPs for using neonicotinoids?
They should be for both to give more options, also for native pollinators, endangered species, birds, aquatic organisms. Also BMPs about colony site selection.

What options should be included in our BMPs for use of neonicotinoids?

What did CA and Ontario use as replacements, once bans in place? What happened to bees when bans were implemented?

What is economic loss from using non-treated seeds? 1-2%?

What other alternatives to neonicotinoids are available?

Do VT farmers have access to fungicide only treated seeds?
JC: soybeans you can order fungicide only treated seeds, corn options are only non-treated (ordered much earlier i.e. Fall before) or fungicide + neonic treated seeds.

What is cost of filters/air traps recommended for air planters? Has anyone else implemented this regulation?
JC: lubricants have to be dry (talc or graphite)

Are there programs available to incentivize/cost share using alternatives?
KG: is part of AIB charge to make alternatives an option without fear of economic loss.
CP: CEAP (Capital Equipment Assistance Program) could help with cost sharing the filters for air planters

What is the impact to crop insurance if farmers chose to move away from using treated seed?

Next steps for Neonicotinoid topic for AIB

Work together online on BMP framework, while monitoring what's happening at EPA.

AAFM should do the heavy lifting on writing with input from the volunteer board.

Start working on H.626 deliverables through Microsoft Teams

Start September meeting with close out of Neonic issue/BMP overview and then move on to next topic.

Next topics to discuss

Glyphosate and atrazine, but as separate topics. Glyphosate will be next topic we discuss.

New Action Items

Action	Responsible Party	Complete? (date)
Send link to NY Legislative testimony on proposed neonicotinoid ban	Andrew Munkres	
Work to find answers to outstanding questions	Kanika	
Make Microsoft Teams Team for us to collaborate and resources available	Kanika	
Microsoft Teams walkthrough with anyone who wants a tutorial	Kanika	
Find pollinator protection documents	Kanika	

Ongoing Action Items

Action	Responsible Party	Complete? (date)
look up names of people who testified same day as Clara (3/31/22)	Kanika	
send out cheat sheet on neonicotinoid treated seeds with active ingredients – which active ingredients are registered for seed treatments	Kanika	
provide names to ask to testify on native pollinators and beneficial insects and effect of neonicotinoids to AIB	Ryan	
ask Annie Macmillan about Ag plastic working group debrief at future AIB meeting	Kanika	
Terry send draft pollinator protection committee BMPs to AIB	Terry	Complete 7/18/2022
AIB members should read pollinator protection committee report and presentations from today	All	Complete 7/25/2022
Jon find study out of Ontario/Health Canada	Jon	
Kanika try and find right people to ask our questions	Kanika	
Cary help get CA contact	Cary	Complete 7/25/2022
Kanika send summary of what she needs help with	Kanika	
Notify AIB status of H.626	Morgan	Complete 7/25/2022

NEXT MEETING – Monday, Sept 26 1-4pm

Public Comment
none