Agricultural Innovation Board (AIB) meeting Transcript

January 27, 2025, 6:02PM

Griffith, Morgan started transcription

0:08
So hi, everyone. Welcome. Welcome to twenty twenty five AIB.
We are officially going to start the meeting and as a reminder, this meeting is being recorded as public record and that participation in a recorded meeting will be deemed as consent to be recorded, including statements both written in oral.

KA **Kirk, Andrea (she/her)** 0:20
Call.

0:32
Public records, including this meeting recording, can be requested at any time in accordance with the Vermont Public Records Act.
So thank you all for joining us. We're gonna start with.
Our introductions, and so I think I'm gonna start.
With people in the room here with me, I don't know if the camera will go around, but I'm gonna start by saying I'm gonna start with our newest member. Leon Corres is here today. So we said goodbye to Brian Kemp as our.
Organic Farmer representative and at the end of twenty twenty five and twenty twenty four.
So we welcome Leon Corres here today.
Is filling that spot for us.
Thank you very much.
So, Leon, if you want to give a quick.
Introduction to yourself that would great.
I'm lean.
Course I am a fifth generation dairy farmer.
We were certified organic in two thousand eight. So we've been organic for seventeen years.

We milk about fifty five cows.
At a high elevation farm, we're located about two thousand feet above sea level.
And I am involved in various agricultural organizations.
And I am involved in various agricultural.
I'm have three positions in crop cooperative which is the parent company of Organic Valley.
I'm on the board of directors of the Dairy Grazing Alliance, which is the parent.
Of the dairy grazing apprenticeship program, if you've ever heard of that.
I am on the board of a farm supply cooperative and I've been the town of Whitingham moderator for forty years, so I'm a little bit familiar with running a meet.
I'm happy to answer any questions that anyone has about my background.
Well, we're certainly welcome you and glad you're part of the group. Thank you.
Thank you.
I'm gonna continue just around the room here and see what you.
Know director of the Public Health and Agriculture Resource Management division of the Agency of Agriculture, Food Markets and member of the board.
Oh, Stephanie Smith.
I work in the public health and agricultural resource management division. I'm not a member of board, but I'm staff.
My name is Pam Breyer.
I am the agricchemical toxicologist with the Agency of Agriculture Food markets.
Also not a board member.
And I'm Morgan Griffith.
I am a board member.
I am a board.
I'm also kind of just your organizer and point of contact for any questions.
Always feel free to call or e-mail.
So I am going to go through our Members that I see first.
On the list.
On the.
So Amanda, just a quick introduction.

AS **Amanda St.Pierre** 4:01
Sorry everyone having technical difficulties.
Amanda St.

Pierre, I'm a dairy farmer up in Berkshire, Vermont with my family and a member of the Vermont Dairy Producer Alliance.

4:13
Yes.
Roy.

RB **Roy Beckford** 4:20
Good afternoon. Roy Beckford, associate Dean in the College of Agriculture and Life Sciences at UVM and Director of extension.
Good to see everybody happy New Year.

4:30
Thanks Roy.
Thanks for joining us.
Pam Pamela Weidman.

WP **Wadman, Pamela** 4:39
Hi, I'm Pamela and I'm with the Department of Health.
I'm a toxicologist and risk assessor and I am a board member currently and I'd also like to take this opportunity to introduce our new toxicologist with the Department of Health, Dr. Andrea Kirk.
I see your on Andrea.
Thank you.

5:00
Sure, Andrea.
Go ahead, you can give a a quick introduction please.

KA **Kirk, Andrea (she/her)** 5:06
Sorry, I didn't realize I was muted.
I just wanted to say hi. I'm the new state toxicologist and I'm glad to meet everyone.

5:15
Thanks for joining.

Our next.
Person I want to introduce is Shawn Lucas.
Joined us for the last couple weeks.
I mean, last meeting two meetings.
I mean last meeting two.
Maybe so. I do want to say so.
She's not with us right now.
She's not with us, right?
She's on vacation and she actually has.
Completed three consecutive terms, your term.
When we first started the AIB and so because she's served three consecutive, we have to switch her out.
We are lucky to welcome Shawn Lucas as a member.
Probably starting at the end of February as an official member, even though he's been participating.
Sean, go ahead and give us a quick introduction.

SL **Shawn Lucas** 6:07
Hey, Shawn Lucas, UVM extension.
I am the extension agronomist in the Middlebury office.
Fairly new to Vermont.
Been here about six months now, but my background is soil biology, soil health and.
A fair bit of experience in organic agriculture, so super excited to roll on to the board and appreciate the work that has been done before me and I probably need to catch up with Wendy Sue and just and and get some grounding from her before I officially roll.
On.

6:41
Sure. Yeah. We have time for that. When you see definitely was.
Feeling very sad that she was going to be away for this meeting.
And so we can definitely.
Make that transition easy for both of you, so thank you.

SL **Shawn Lucas** 6:56

Yeah, yeah, yeah.
Love to connect with her. Alright, thank you.

7:05
OK.
I think that's all I see right now for Members, so I'm gonna go through introductions of others on the call.
I'm just gonna go down the list of Patty.

CP **Casey, Patti** 7:19
Hello everybody.
This is Patty Casey.
I'm in the farm division as well.
I'm not a member of the AI BI.
Oversee taking mosquito vector borne disease issues statewide and.
I supervise Brooke in the apiary program and also I do.
I'm responsible for pesticide monitoring in ground and surface water around the state.

7:50
Hey, Brooke. Go ahead.

DB **Decker, Brooke** 7:53
I heard my name so I figured I should say hi.
My name is Brooke Decker.
I also am in the farm division, not on the board and I am the pollinator health specialist.
I work a lot with honey bees.

8:09
Who, who is called in with the phone? Number two, three, two, six.
OK.

+14*****26** 8:25
You hear me?

8:27
Yes, I can.

+14*****26** 8:29
Hi, it's Nate doors.

8:31
Tiny, I thought that might be you.
Tiny, I thought that might be.
I'm sorry I missed you in the member call out, but go ahead. You can give a quick introduction.

+14*****26** 8:36
That's OK.
Nate Norris Consulting just divesting from Massachusetts and my residence now in Montgomery, Vt.
I've been in the Berry industry over 40 years and.
I work with Barry Gross out North America.

9:02
Easy.
Dylan.

DG **Dillon Gabbert** 9:09
Hello everyone.
I'm Dylan gabbert.
I'm with cop like America and rise.
It's good to see everyone.

9:20
Thanks.
Emily.

EM **Emily May** 9:28

Hello everyone.
I'm Emily may with the Cersei Society for Invertebrate Conservation.
Probably a familiar face by now, agricultural conservation.
Lead with our pesticide program and I work with growers and field staff around the country on pollinator friendly practices and reducing pesticide risks to beneficial insects. Thanks for having me.

9:50
Jill.

GJ **Goss, Jill** 9:56
Good afternoon.
My name is Jill Goss.
I'm an agricultural input specialist with the Agency of Agriculture Food markets.

10:06
Show Ross Conrad.

RC **Ross Conrad (he Him)** 10:12
Yeah. Hi, Ross.
Conrad I'm I'm a beekeeper. Out of Middlebury. And so, as you can imagine, pesticide issues, very sensitive to EM, and sometimes I'll pinch hit for Brooke, helping out with the inspectors inspections in Vermont.

10:31
Thanks for joining us.
Ross Saxon.

SR **Saxton, Ross** 10:38
You there?
I have a order quality specialist and the water quality division. It's kinda been just doing some some background research on on what's going on with neonics, as several farmers have shared with me their concerns about not growing cover crops.
Once the neonic seeds are are no longer allowed.
Except for the exemptions.

So I'm just gonna stay on the prize so I can learn more and hopefully share some info on that with with farmers going forward.

11:07
Hey, Josh.
Jack.

Szczukowski, Zach 11:15
Zach Schukowski Agency of Agriculture Farm division.

11:25
Zach, I think.
That I got everyone that I see. Did I miss anyone?
Right. Well, thank you very much for joining us.
And so we have a few things.
First one thing is I sent out the minutes to the Members from the December ninth meeting.
I didn't hear of any.
For additions and so those are up on the website along with the recording.
And any materials that we discussed that day?
So the first thing that we wanted to kind of give you.
An update on is that we had.
A to submit our annual report to the legislature. And so I sent that out. But I'll go over it with you here.
It's.
Fair my screen.
So basically it took the same form as what we've submitted the past two years. So two on the fifteenth of January every year. And so basically just went over our learnings from the year. And so obviously this year, again, we were heavy on.
Learning about.
Munich treated seeds as well as Munich pesticides in general and how we use those learnings to create recommendations for how these.
Best management practices should be drafted and.
Into a rule so.
Learnings that we went over are all of the Keith 's presenters that we had, but also it

went over the best management practices that you guys ranked from your survey to say, yes, these are priority best management practices.
Also included the best management practices that you Members wanted to include.
Food from the public comment that was submitted by Zerstee society to put those recommendations to include in the rule also were outlined in this.
Report and then we have every year the responsibility to.
Conduct a farmer 's survey. And so if we don't remember it, so that's all this is just basically what we learn.
Try and just pull out the major points from all of our relevant speakers.
And then our farmer survey this year was in two parts.
The first part was way back in March.
I know I have trouble remembering what happened, but so basically there was a virtual.
Ag pesticide applicator meeting run by Sarah Kinsley Richards. Three VM and so we asked her to do our survey questions as a poll during the meeting and actually was probably one of our most successful.
Participatory surveys.
So we got fifty five responses and so we asked them basically what environmental impacts are of concern when you're using agricultural inputs and the most people said in addition to non target pollinator exposure, which has been our focus for the last two years.
But also disposal, the next most common thing is disposal of farm materials that are no longer useful.
Basically, disposal of Ag waste.
Lower on that list, but still chosen by some participants were micropastics and P fast and non target exposure.
So the second question is around what challenges do you face to reduce AG inputs?
That 'cause you environmental concern and so most respondents said yes, the effectiveness or availability of alternatives.
And then followed by the cost and knowledge of those alternatives.
So the second round of this survey is we also had those two questions and we had planned to include them in a wider survey that Margaret Skinner and Cheryl Frank Sullivan.
Were planning on disseminating to high tunnel growers kind of in the whole New England region?

And so it turns out that they didn't.
Start that survey until pretty late in the year, so.
We got some very preliminary results before this.
Report was due and I'll share those with you now. So as we got them after we met in early December and but the goal for that survey for Margaret and Cheryl is to really push it at the upcoming meeting.
We probably will have more responses.
From Vermont, farmers in the next month or two.
And so we ask those same questions and.
This is what Cheryl sent.
Really preliminary.
Results. So they had thirty responses in total, but only five were from Vermont.
So you can see kind of this breakdown.
So you can see kind of this.
So they had this New Hampshire, Maine, mass and New York represented as well.
Because we need to show what counties people are from.
Because we need to show what counties people are.
We asked them to include this question of if you were from Vermont, what county are you?
Farming in and so we only kind of reached three farmers that three counties so far with these questions. Oh, no, four counties.
And so here's that first question.
And so they can pick, you know, more than one so.
A hundred.
All five said disposal of raw materials are no longer in use.
And then followed by all four four of the five fifth microplastics.
And then followed by all four four of the five fifth.
And so this was the first time that that's kind of risen to the top for us as an environmental impact.
And then.
A smattering there of the PFAS and.
Non target pollinators, closure, non target, prudential side exposure.
And other people list one person listed instruction of new leads and pass from bringing in off farm inputs.
So challenges faced a lot of availability of alternatives.

Is lacking and then followed by lack of knowledge of available alternatives.
And then you can see the cost and efficiency of those alternatives.
So more to come on this.
So we'll probably reach back out to them for more thorough results when they close the survey, which would be in a month or two.
But so we summarize those results in our survey.
I mean in our summary report and so 'cause about we have a list.
Sorry for the scroll.
Of kind of plan focus areas for this year. So for calendar year twenty five.
So obviously these aren't really listed in priority order order, but we have the responsibility to continue and.
Help and consult with the HC of AG for the finalization of the best management role for neonatal seats and nunic pesticides.
In addition to that.
I think based on those survey results I added in.
Recommendations of reducing and using waste associated with plastic, which has been listed as a charge of AIB when it was formed.
And also maybe looking into some historic recommendations by other groups.
About.
Pesticide reduction that's always been in our.
Responsibility list, but also agricultural waste disposal.
Responsibility list, but also agricultural waste.
So there's been some historic programs within the agency of AG, but then we're learning about some new programs that we're hoping to hear about probably in the next.
Meeting. Hopefully that are kind of developing in Vermont about AG waste.
Meeting. Hopefully that are kind of developing in Vermont about AG.
So that is on our list to do based on what farmers are responding in that survey.
And I think.
That's all I wanted to call out for that.
Annual report.
Did any member have anything to say or comment on for the annual report?
Has that been posted to the website?
So it might not be on the AG, on the AIB website?
Put it on today, but it's on the.

Legislative reports website. Yeah, OK.
I do see, Steve, you've joined Steve.
You wanna just give a quick introduction 'cause. I see you now. I missed you.

Steve 21:31
Yes, Steve Schubert.
Board member.
Talking representing beef and meat.
Sorry I'm late out on the farm today.

21:42
Yeah. And Steve, you missed it.
Yeah. And Steve, you missed.
We have a new Member, Leon course, representing organic growers.
Hi. Hi, Steve. Think we've met before.

Steve 21:51
Hi Leon.
We I think we have great glad to be working with you again.

22:04
Thank you.
OK, the next.
Update that I wanted to give in this section is as long as we're talking about our, you know, twenty twenty five AIB. What does it look like we wanted to propose. So we have been.
Really, having hitting the meetings the last two years really because we had this legislative charge.
As a responsibility in twenty twenty five, you know, depending on if something comes down the pipe with the legislative session going on, I'd like to propose meeting every other month.
So trying to maintain the the fourth Monday of every month.
But going to every other, that would mean that we are proposing to meet March twenty fourth and then May.
You know, we have Memorial Day, so we kick it up a week, so it'd be may nineteenth

and then July twenty eighth September twenty second and then December. Kind of that early December.
So that you're not hitting the November, you're kind of splitting the holidays?
Similar timing that we did this past year.
I'd like.
To hear if any Members would have any comments on that meeting schedule, we're definitely cognizant of your time.
And efforts and really appreciate all of your input and we've been asking a lot of you last two years. So we wanted to alleviate it some by doing, going to every other month. So any members wanted.
Chime in on that.
Meeting scheduled proposal for twenty twenty five.
And when opposed to meeting every other month for twenty twenty five.
Weeks, like everyone 's OK with.
OK.
I'm gonna go with every other month in twenty twenty five. So what?
Logistically, I probably will.
Start fresh with a meeting invite for twenty twenty five South this year 's will get cancelled and so we'll start fresh.
See a new meeting invite come through and that information will still be posted on the website.
For anyone else who wants to join, you're more than welcome. And so thank you.
OK. So Heather, I did see you join as well.
Skipped your introduction, but why don't?
We just hand the floor over to you.

HD **Heather Darby** 25:19
Thank you.
I'm gonna.
Where my screen.
OK.
Sorry.
Can you see my full screen?

25:49

We're seeing a lot.
We are see like table of contents. There you go.
There you go.
Go.

HD **Heather Darby** 25:56
Is it?
Was it OK before?
I don't know what I'm doing.
Here we go. Let's try that.

25:59
So the second one was better.
What you just said?
That's that's true.
Yeah.
It.

HD **Heather Darby** 26:04
OK, great. All right, well.
Today what I was planning to do is provide an update on the work that our team at UVM Extension has been doing on the topic of neonicotinoids.
Assessing risk.
Of the pests that cause early season damage to corn and soybean, soybean stands.
And also some of the work we've been doing on.
Possible alternative?
Alternatives to Neo Nica to Noids over the last year.
I just want people to keep in mind we're still summarizing this data.
This is very preliminary.
Does take a lot of time to get all of this together and do thoughtful analysis.
And.
So we're still working on it, but wanted to show you what we put together so far.
All right. So just to review why people are using seed treatments.
Seed treatments have been used historically in Vermont to manage early season pests and diseases.

We live in an environment that.
Has.
Historically.
Had very cool springs and often also very wet.
Generally slow to get going and that can predispose seed to a whole variety of pests.
Once it's put in the ground.
Now we we do know in the literature shows over the years that yield responses and economic returns from seed treatment use can vary.
And that's not just.
In corn and soybeans, that includes a whole host of other crops as well.
Vegetable crops, potatoes, etcetera.
So it does vary. A lot of that has to do with the type of crop, the weather conditions, field history, and a whole slew of other kind of factors that would influence whether or not we would see.
A major outbreak of these pests.
Well, note that these are common paths. They're around.
They're always around.
But whether or not they're going to cause economic damage to field is, I would say, an unknown.
And we're, I feel like we're unknowing more and more and more through the work that we're doing here, evaluating these pests.
So there's a whole variety of seed treatments that can come on seed and you know these range from fungicides which are very, very common.
Those have been used for a very long time in this state and beyond.
There's insect protection now in the form of seed treatment.
There's various inoculants that can go on the seed.
There's all kinds of biologicals.
There's the different binders that are used.
And the dyes I mean.
Most of the seed that is being planted is looks.
Pink looks purple, looks green.
All kinds of beautiful colors.
And and most of those colors are on that seed so that the seed is very visually different and doesn't enter the food chain.
But there's lots of things going on on seed these days and you know it's a lot to keep

track of for people.
Sometimes seed comes treated with a whole variety of things and and people don't even know honestly. For the most part, so it's complicated.
I would say two of the most common here in Vermont are insecticides and fungicides. The binders and the dyes.
I would say those for most of the seat coming into the state, the majority especially corn, have seed treatment with soybeans being less so.
Anyway, it's not not moving.
Let's go.
There we go.
Alright, so when we talked last year, I was telling you that we're gonna be starting to look at planter dust.
So one of the questions that often comes up is if if this insecticide is on on the seed and the seed is going into the ground.
How are the neonics getting out of the ground?
And there's been, you know, a body of literature.
You know primarily from 2015 to 2017?
That showed that the dust that was coming out of planters or being generated by planters.
Contained some of the insecticide and and likely some of the fungicide as well, and so here's a picture of planting during dry conditions in the spring.
You can see all the dust forming.
And so you know you you could possibly see how neonicotinoids might be kind of getting kicked up into the dust either from the soil surface or possibly out of the planter itself.
So again, there's there's been a good amount of work done on this. There hasn't really been much recent work. So most of the work that was done was done through the Corn Desk Consortium.
And again, like I said between.
Well, this says 2014.
But 2014 to 2017.
And then there was a big report posted through this CORNDUSK consortium, and that's available online if anybody wants to look that up.
But you know what they found?
Was that the seed treatment itself?

The integrity of it wasn't very good and that it was actually.
Kind of getting chipped off in the planters.
Planting. And so you can see the pictures in in the photograph here and you can see if you're seeing yellow, that means you know, it used to be covered by seed treatment. And now that seed treatment is gone.
So the seed treatment wasn't sticking on to the seed very well and it was coming off and making its way out into the planter dust.
So this was shown.
A number of years ago, you know this.
Was well known by various seed companies.
And you know, there was purported work done that the seed treatments were.
Better, you know, placed on the seed. Remember I said.
There were these binders, so maybe the binders improved, but nobody has really looked at this sense.
And if if the binders have been approved and the.
See, treatment isn't coming off the seed. That's great.
But again, we don't have any evidence to really show that at this time.
So we work to repeat two of the studies that were conducted with the Seed Dust Consortium and one was essentially collecting dust that was moving off of the fields during planting.
So we put into place the same exact process they used.
And you can see that the left here, these are these dust towers.
It's a metal pole and you can see that colorful blue rectangle on the top and you can see one down below.
And these are the dust collection units and and what that is actually is a bunch of microscope slides.
Slid into.
Like these little clips? And then they're covered with tangle foot to catch dust.
There's some near the soil surface, and then there's some up in the air, and so you can see the schematic to the right.
Where we place the dust collection units downwind.
During planting and the dust collection units were, you know, roughly 82 feet apart along the edge of the field. And we also had one dust collection unit.
Under the planter or right next to the planter when it was going by to see what was coming down onto the surface of the ground.

So.
We went out to a number of different sites.
Sorry, that's kind of cut off there.
And we tested or we went out to number different sites last spring. So the spring of 2024 and we measured, you know, the wind speed at the time of planting, the direction, the humidity.
Temperature. We also looked at soil moisture, soil type.
We looked at the fluency agents being used on the farm.
We looked at other practices too. If it was no till if it excuse me if it was tilled.
And then we put out the desk dust collection units and we planted and then we waited.
Several hours.
And then went out and picked up the the slide trays.
Sorry, they were then sent into Vail to analyze them.
For neonicotinoids, so you can see the different soil types here. So I will say it was.
A very wet spring, so there wasn't a lot of dust at all.
It was very, very wet.
Anybody remembers was very difficult to get planted.
You can see most of the fields more than half the fields we went to were actually on sandier soils because it was so wet, people weren't able to get out and plant.
So it was a really challenging year to do this again.
The wind speed when we were planting was very low and the soil moisture was actually really high, so not good conditions to create dust.
So this is the data that we got back from the lab and the detectable limit here is 0.43.
Nanograms per centimeter squared so a very, very low amount can be measured and you can see the different sites to the left, Highgate Swan and Saint Albans, Franklin, Middlebury. Then you can see the collection height so.
On the ground, 30 centimeters.
200 centimeters. And then you can see the measurements from from those slides.
So again, because of the conditions last year, at least that's our hypothesis. We actually didn't really, we didn't pick up any detectable levels of neonics on the edge of field.
Except for at one spot in Middlebury, where we did pick up 0.7 nanograms per centimeter squared.
At at the soil surface so.

We're gonna do this study again this year.
And you know, look at another year.
And and see what we find.

38:41
A question from Steve Shebert.

HD **Heather Darby** 38:42
Right, Yep.

S **Steve** 38:47
Thanks, Heather.
This is so fascinating. Back in that schematic.

HD **Heather Darby** 38:48
Yeah.

S **Steve** 38:52
I'm looking at the wind direction.
How how far is that?
How is the?
Distance determined with the where the track is in the field in relation to.
The the Dust Collection devices and does that change or sway the data?

HD **Heather Darby** 39:12
The dust collection was at the edge of the Yup. The dust collection was at the edge of the field.

S **Steve** 39:13
Or did I miss that?

HD **Heather Darby** 39:18
And so we started planting at the edge and moved our way out four to 500 feet.
So we planted continuously.

Steve 39:26
OK.

Heather Darby 39:27
Yep. So we all started.
You know closest to the dust collection units and then moved our way away and it was on the downwind side, but again.
I mean, this wasn't a year for dust.
I mean, it was so wet.
It was very difficult.

Steve 39:42
Right.

Heather Darby 39:44
And really, there was not much wind either.

Steve 39:52
Do you think if it was a dusty year to stay?

Heather Darby 39:52
All the corn mostly went in the ground. What's that?

Steve 39:57
Do you think if it was a windier or dustier year it may be the data may may be different?

Heather Darby 39:58
Go ahead.
Yeah, and I'll, I'll show you some information about that.
No.

Steve 40:13
Putting the cart before the horse, sorry.

Heather Darby 40:15
Yeah, yeah, a little bit.
Yeah, probably should have showed the other stuff first.

40:18
Replay.

Heather Darby 40:19
But Steve, you had a question.

40:20
Heather. Heather. I gotta. Yeah, I'm just curious.
Did the in the work from the Corn Desk Consortium?
Did the in the work from the corn desk?
Did they have any information on correlation with humidity or soil moisture or wind speed or anything? Anything like that?

Heather Darby 40:35
I don't.
I don't particularly remember that Steve, but you know they I think they had 77 farms a year.
Different planners, different conditions and and they definitely picked up. They picked up neonics in in those dust collection units.
So we were pretty.
We were obviously.
Surprised we didn't see anything.
Again, I'll I'll show you some some data that makes us realize like yes, there is dust coming out of plants, so.

41:15
Yeah. Great. Thanks. Thanks.

Heather Darby 41:16
Yeah. So the next study that we repeated that was done by the Dusk Consortium was

to directly catch the dust that was coming out of planners.
So you know that study I just showed you?
Was being used to measure like off target.
Movement of neonics and this particular study was to look at.
You know what's actually coming out of planters?
And we repeated this study.
As the Dust consortium did. But you know, we did have one modification that I'll talk about in a minute, so you can see these white bags, those that's a vacuum bag. And that was placed over the planner exhaust.
And we collected all the the material, all the dust and everything else that can't. That would come out of that exhaust.
Normally, but except we were collecting it into this bag.
We.
Really wanted we did this experiment to look at.
C type and also seed fluency agents. So many farmers.
Will use a fluency agent when they're planting to help the seed flow through the planter.
Help get a more uniform seed population.
And that's, I mean it's fairly still fairly standard with new technology and precision planners. People are going away from using fluency agents, but it it's.
Still pretty common throughout Vermont.
And.
You know what the.
Dust Consortium showed was that some fluency agents.
Chipped kind of chipped the seed treatment off more than others.
They were more abrasive and there are some alternative fluency agents that there hasn't been a lot of work done on that maybe less abrasive.
So if if the problem here is that these fluency agents are kind of chiping away at the seed treatment.
And then that seed treatment becomes loose in the planter.
And then gets blown, you know, blown out of the planter through the exhaust.
You know, is there a way to kind of really minimize that?
And again, the dust consercium did quite a bit of work on this.
It was actually largely inconclusive.
There wasn't.

There wasn't a strong recommendation one way or the other.
They they couldn't, really.
You know, see a planter that was necessarily better than another one.
Some some were far worse.
Some of the fluency agents just the you know the results were were pretty variable.
But again, the thought is that the binding agents that bind the C treatment onto the seed have improved.
Right, people knew this was a problem.
It was well identified and documented.
And so there was, you know, people saying that the seed treatment had gotten better as far as it being stuck on the seed.
So we wanted to evaluate that again because it hasn't been looked at.
Now the modification to the study for us, you can see at the bottom of this bag, you can see kind of that colored thing showing through and unfortunately we didn't. You know we didn't have the capabilities that this other lab had.
To be able to essentially.
Clean all the material out of this vacuum bag.
So So what we ended up doing was putting the slides like we did in the previous experiment in the bag in the bottom of the bag. And we sprayed those with Tanglefoot and then we measured what we got on those slides.
So you know the the quantities are probably skewed a little bit because.
Has a tangle foot on there.
It's gonna get a lot.
Stuck right on those slides, but I think you know what we found was there is material coming off coming off the seat. So I'll show you that next.
Right. So we looked at these four different fluency agents.
We looked at graphite and talc.
Those are the two most common fluency agents.
Graphite in particular is thought to be very abrasive.
And then there were these two alternative alternatives that we looked at that are on the market.
One is called dust, which is a soybean based product and the other one is from Bayer fluency agent and it's a polyethylene wax based.
Excuse me, fluency agent.
You can see the dust product.

How cakey it was, it definitely would pose significant issues for producers using that, especially with our high humidity.
Here it didn't wanna go on the seed very well. It just became sort of a cakey mess.
So that one probably wouldn't fly here anyway, but the Bayer fluency agent was easy to apply.
And that seemed like it could definitely be a good alternative.
Alright, so we didn't see much difference between the levels of chlorthene. Getting on to that slide set.
And and the fluency agents we did see the the graphite was a bit higher than the others and you can see the bear was a bit lower, but nothing really conclusive.
In regard to to the fluency agent itself.
And again, you can see these levels are they appear to be very high, which they are.
I mean, that's what was on that slide set.
Most researchers would extrapolate this out to.
Grams per acre Hector, which we haven't really had time to do yet, and we have to figure out how our modification kind of influences that calculation.
So you know, the real take home message here is that.
There's neonics coming off the seed and making their way out of the plant or exhaust.
So.
What was really. Oh, go ahead. Yeah.

+14*****26** 48:26
Hi, this is Nate Norris.
I have a question.
I I can't see the the data charts.
What was the date that you?
The time.
The date that you were looking at.

HD **Heather Darby** 48:44
For planting this project, we did in August.
So we were running our planter.

+14*****26** 48:49
OK.

HD **Heather Darby** 48:51
So what we did was we had two different seed brands.
And we had five different fluency agents.
So for each seed brand, we would have no fluency agent and then we would have it with talc, dusk, graphite or Bayer and we would go out with the commercial planner, which you saw and we'd go out and we'd.
Plant with the planner.
You know about 400 feet.
We did that four times.
Collected the dust each time and then we would thoroughly clean out the planner to do the next treatment.
We all started with no fluency.
So that we didn't risk any contamination, but.

+14*****26** 49:46
General wouldn't most of dairy farmers be planting sometime in May?

HD **Heather Darby** 49:51
Yes, but this is not.

+14*****26** 49:53
And.

HD **Heather Darby** 49:54
Oh, go ahead.

+14*****26** 49:57
And if they were planting in May, would, would there be that many, let's say, pollinators out even? Would there be flowers around the field?

HD **Heather Darby** 50:08

Could be.
Especially dandelions, the very early flowering dandelions, yes.

+14*****26** 50:16
And that would be what maybe the towards the end of May in Vermont?

HD **Heather Darby** 50:20
Yeah, probably.

+14*****26** 50:23
And then when?
When we're when we're spraying berries and trying to keep the bees safe, we usually do it at night when if the application was done at night.
When the when the pollinators aren't around, how would that affect them?

HD **Heather Darby** 50:40
I you know, I I'm I don't really know.
We're not looking at.
Where the neonics are landing.
You know, we're not looking at.
We're not sampling plants around the field that planting the study where we're looking at movement to see if the dust was moving off of the field that was done in May during normal planning time.
This was really done just to see what was directly coming out of the planter.

+14*****26** 51:11
Because even in your best, even in your best spray scenario, there's always gonna be some fraction of drift.

HD **Heather Darby** 51:12
And.
Your what material? I'm sorry.

+14*****26** 51:23

In in your best in your best spray can ditched with a with a boom sprayer or any type of sprayer.

Heather Darby 51:27
Oh yeah, yeah.

+14*****26** 51:30
Look at an orchard sprayer, even.

Heather Darby 51:34
Yeah.

+14*****26** 51:34
There's gonna be some.
There's gonna be some drift.
And.

Heather Darby 51:41
Yes, absolutely.

+14*****26** 51:41
And that's managed at the right time of day that it is definitely.

Heather Darby 51:42
And you know, this is. This is why this is in question, because this seed is going in the ground.

+14*****26** 51:47
Less.

Heather Darby 51:48
They're not spraying anything, you know.

+14*****26** 51:51
Right.

Heather Darby 51:51
And so the the real question came up is, well, how is this getting off of the fields that was, you know, the initial question and that work was done, you know, now a decade ago and now, you know, now the question is well, it's the seed treatment better.

+14*****26** 52:02
Right.

Heather Darby 52:11
And is it sticking on the seed better?

+14*****26** 52:15
Uh huh.

Heather Darby 52:15
And and really what we found was.
It's still coming off the seed.
So here's the seed brand.
So red is 1 brand brand of seed and green is the other brand.
Both of these seed brands to remain nameless at this point. Had the same exact seed treatment.

52:40
Thank.

Heather Darby 52:43
They had lumagene at the 1250 range, OK.
So when you look at untreated, that means that they didn't have any fluency agent on them.
And there was still dust coming. You know, there was still seed treatment coming off of them.
The brand, the red brand.
More coming off of it than the Green brand.
Now when we looked at go ahead.

+14*****26** 53:12

And did.

So when you, you talk about all this stuff, the way that I recognize corn is handled.

It's kind of dusty in its in itself.

There's a dust component, whether it's neonic or not, there's a lot of regular dust in those things.

It just isn't washed seed or anything like that.

How could?

Heather Darby 53:38

Correct.

+14*****26** 53:38

How could you determine that it was just regular corn dust coming off?

None.

Heather Darby 53:46

This is right out of the planner.

It's not any other dust.

We weren't like collecting dust from the field.

This is just what was coming out of the planner.

+14*****26** 53:56

Currently speaking, the way they mechanically handle all this corn seed, there's gonna be a dust factor in itself that is not.

Heather Darby 54:03

Yes.

+14*****26** 54:07

Associated with the chemical just in the way they handle stuff.

Heather Darby 54:10

Correct.

But when the chemical might come out of the planter and it gets up into the dust itself, it can move off of the field, and that's what we're trying to understand.

+14*****26** 54:14
Code.

HD **Heather Darby** 54:24
You know how much is that?
You know it is it happening? Is the seed treatment on there more solid so that it's not coming off and we we didn't have any real dust this year during planting like normal planting dust coming up off of the fields as you're talking.
About and we didn't.
We didn't see any movement of neonic.
We also didn't have much.
Much wind either.

+14*****26** 54:55
So how would the dust in the field contribute to the neonic going any further?

HD **Heather Darby** 54:55
So.

+14*****26** 55:00
I mean, if the neonic, if the field is wet like you said or whatever.
The and the dust blowing across the field that's hitting your your trap.
You're not finding much neonic.
Seems to me it's very low, if at all, if anything at all.

HD **Heather Darby** 55:22
Yeah, we didn't find any this year.
That's what I that's what I already said.

+14*****26** 55:25
Yeah.

Heather Darby 55:28
And now we're collecting the material that is coming out of the exhaust of the planter, which would theoretically be coming out of the planter. But we were capturing it.

+14*****26** 55:39
Sure.

Heather Darby 55:40
We weren't letting it come out of the planter and.
I think the take home message here, so let's just get through that.
Is that there is a difference in how the C coding is stuck on these different brands of C?
So if you look at the graphite in particular, you can see how abrasive that was to the one brand of C, but not to the other.
Which really to me is showing that the green brand.
Is stuck on better.
Far less of it is coming off.
I mean significantly less.
And so then when you look at this Bayer fluency agent, you can see regardless of the seed, it really suppressed what was coming out of that planter.
I mean, these are very, very, very. You know, they're very small amounts.
And again this is.
On those slides and now, if you extrapolated that out to?
3G per hectare, or pounds per acre?
It's a very small amount.
That's coming out and so using a practice like applying this.
Bayer fluency agent could really further suppress any loss that we have and that you know that's a goal regardless of the seed treatment that you have.
So that particular fluency agent seemed to really make a difference regardless of the seed brand.
But it did seem that the brands of seed really differed in how well they were kind of stuck on to the seed and know that's that's a really important piece of this. To recognize that we could have far less.

Risk if the seed treatment is applied in a manner where it's not gonna come off.
And if we're using a product like Bayer, possibly it could be even less. So I you know, I think that.
Really what we found here that was, you know.
To me, it's exciting to know that we can minimize risk quite considerably.

+14*****26** 58:01
Did did you guys measure the?

HD **Heather Darby** 58:02
I don't know how the material is being bound to the seed.

+14*****26** 58:05
Did you guys measure for the amount of fungicide in that in the trap?

HD **Heather Darby** 58:09
We didn't track fungicide.
No, just just the neonics.

+14*****26** 58:15
So is there a possibility that how would you know that most of the dust wasn't the fungicide dust? I've handled a lot of corn seed that could be pretty dusty with that stuff.

HD **Heather Darby** 58:26
You are just analyzing for neonics, so I mean, they're definitely possibly could have been fungicides in there as well as you know soil particles.
But those get separated out. You know the concern here is the neonic. This isn't total dust that we're measuring.
This is actual neonic that was collected from the dust.

+14*****26** 58:58
Thank you for your responses.

HD **Heather Darby** 59:00

Yeah, no problem.
OK so.
Our plan is to.
You know, repeat this again this year.
There's a lot to unpack here, you know? It's it's complicated.
We used one planter.
It definitely could be different between planters. We only looked at two seed brands.
There's many, but I do think these are really important risk management.
Sorry, my dog's whining risk management practices that could be put into place.
So we've also been looking at neonicotinoids entering surface.
Water from surface runoff and also coming out of tiles.
So we talked about this last year. We're going into our third year of monitoring neonicotinoids coming out of tile and coming off the surface of the ground surface of the soil.
This is that one site.
It's at a site in St.
Albans Bay. It's on a very heavy clay soil.
We're looking at a whole number of water quality parameters here.
These are big research plots.
These are, you know, 4/3.
Yeah, sorry. Three to six acres each and there are two tiled kind of watersheds and two watersheds that do not have tile. And then at the edge there's edge of field collection sites where we can collect surface.
Runoff and we can collect water coming out of the tile.
So again, we're looking at neonic neonicotinoid movement in the surface.
And subsurface water.
And then we're also looking at soil persistence and again and movement.
OK.
So here's where that site is.
You're all Vermonters, so you know where St. Albans Bay is.
It's in a heavily impaired watershed.
Up in northern Vermont.
It's on the Jew at Brook watershed to be exact.
And again, it's all Covington place soil there.
The experiment was again put into place really to look at phosphorus and nitrogen

losses, primarily with different management practices, so the management practices were looking at to reduce nutrient losses or cover cropping and manure injection. No tillage.
And rotation.
So there's just a little bit of a closer view.
So you can see there's collection points, those purple and stripe collection points.
One is 2 are the tile stations where we're collecting water coming out of tile, and four are surface collection stations where we're collecting surface runoff as well.
These are the different best management practices that are gonna that are being used here as well.
So last year we looked at potheadin in particular.
That's the that was the seed treatment used and we looked at neonics coming out of.
Tile and also those present in the surface runoff.
These were the primary collection points this is loading.
This is just concentration.
But you can see that once we started to get heavy rainfall.
And again, this is 2023.
We saw flush of neonicotinoids out of both the tile and off of the surface.
OK.
So that's when we saw our highest amounts and then those amounts went way down after that.
And and actually we didn't have any detectable levels past October.
We did this again this year. It was a overall a drier year.
Last 2023, I think we had a hundred samples collected.
And 2024, we had about half that 'cause there was less rain, right.
We can only collect samples if there's surface runoff, so you would have enough water. Essentially, that would run off the surface of the field, or if water was coming, draining and coming out of the time.
So we collected 29 samples from tile and 25 from surface.
And of those, we had fourteen of those samples that had detectable levels of neonics and off the surface we had seven samples that had detectable levels of neonat.
Al samples from tile and about 1/3 from surface.
So this only represents through August.
After August, you know it was very, very dry.
So we haven't really had much of any sampling since since then.

But this just shows the data that's been collected and from what site. And again, this is concentrations of potheadin, so you can see we didn't really have any detectable levels until the 7th of June.
And usually what we see if we get a significant rain event following planting is that we'll see this kind of flush of neonicotinoids.
That move out of the soil at that time and then the levels drop considerably from that point.
So where there isn't any any data being reported, so you can see there's nothing here. If you go down 11th of July, 30th of June, etcetera. There's just no water to collect.
So we don't have any run off and we don't have anything coming out of the tiles, so again.
This is just concentrations. It's not.
Volume. So just you know, keep that in mind, but it's similar to what we saw last year.
And again, we haven't had much sampling at all since this time.
So we're also looking at neonics in the soil.
So at this site in St.
Albans Bay this 2024 was its fourth year of corn so.
This field is in an alfalfa.
Corn rotation.
So it's it was in its fourth year of corn and each year the corn has been treated with neonicotinoid.
So the first time we sampled for neonicotinoids was in the spring of 2023 and we found detectable levels in 88% of the samples in.
The top 2 1/2 inches of the soil, so we didn't find it everywhere but in the top 2 1/2 inches 88% of the samples that we took had detectable levels and less than half of the samples had detectable levels two and a.
Half to six inches.
So we went out this year in 2024 and did the same sampling. And interestingly, you can see this spring we had less detectable samples, so.
I'm assuming possibly this is was because of the significant rainfall we had in 2023, but it's hard to say, but we definitely had less samples in the surface.
In the 2 1/2 to six inches.
That had detectable levels of neonics.
The quantities are, you know, about the same, but the number of samples was far

less.
We sample at the end of the year as well, so.
In 2023, we sampled on the 3rd of November and then in 2024 we sampled on the 30th of of October and at the end of the season.
Much higher percentage of the samples had have neonics present.
And you know, that was consistent both of yous.
So there is residue remaining in the fields year to year.
We had another site that some of you probably remember that was in alburg.
And at that site, we went into an area that we thought had been free of.
Neonicotinoids for some time and that's why we went into that site and we planted neonicotinoid treated seed and we wanted to monitor.
The degradation of neonics over time, with just one year only of treated seed. So in May of 2023, you can see that we did still find, even though we didn't think we would. We did find neonicotinoids in the 2 1/2 to 6 inch range.
Out in this field.
We didn't find any detectable levels in the surface and then we monitor.
Those levels throughout 2023 and then again in the spring of 2024 and you can see a year later roughly.
There were no detectable levels in any of our samples for neonicotinoids, so.
It does seem that possibly if we're using neonicotinoids periodically, there would be hopefully enough time depending on the soil of course and the weather for the neonics to degrade.
But I think there's a lot of factors at play here. The other site is heavy, heavy clay and this one is more of a low main textured soil.
So some pretty significant differences then all right, so probably running out of time, but I wanted to talk again about why we use C treatment.
What makes our conditions here in Vermont conducive for some of these pests?
We we hear a lot from some of the other regions that.
You know, these aren't real issues.
And you know we shouldn't.
Shouldn't be worrying about EM their secondary pass, but you know they they are issues in Vermont.
They can be quite serious issues.
I've seen it throughout the 20 some odd years I've been here. The most recent I saw in 2023 I showed this slide. Last year we had complete devastation of several hay

fields around the state from.
Grubbs and Wyoming.
And I, you know, I've seen props **** props decimated from seed ****, maggot and lawyer worm.
So it does happen, I think really what we're trying to understand is, you know what?
What puts us at risk?
Can we predict when it's going to happen?
And and really try to figure out, you know, the risk factors here.
So you know, I'm probably running out of time, but.

1:12:10
You're OK with time, Heather?

HD **Heather Darby** 1:12:10
I wanted to. Oh, OK, alright. OK.

1:12:11
Don't worry, you can.
Still.

HD **Heather Darby** 1:12:14
So seed corn mega is is probably the past, at least in corn and soybeans that people are most worried about.
They're not really pest of corn or soybean, you know they're they're looking for their flies, their maggots.
They're looking for decaying dead things.
They're opportunists and you know they happen to infest the field.
They can start, you know, laying eggs and sort of attacking corn and soybean fields.
We know that injury seems especially prevalent during cold and wet springs, which we've traditionally had a lot of, and when plants are growing slowly.
So you know, the warmer the ground is, the faster the plant germinates and gets out of the ground.
The less risk there is, but we also know that that's not very common in Vermont.
Especially around the time when we're trying to plant corn. And so just by nature of, you know our environment, we are at more risk for damage.

All right. We talked about this.
There are.
You know there there's not very much real literature out there. It's very limited.
But there's a lot of talk and a lot of articles about high organic matter fields decaying.
Plant matter. Decaying manure.
Put those fields at high risk for this pest, because again, it's, you know, it's a family.
It's a maggot.
There's some kind of sensory cue there, and so there are a few papers.
They're they're quite old, actually, at this point from the 90s, before seed treatment was even on the seed.
They looked at cover crops and tillage.
And how that impacted?
Seed corn magnate.
All right.
So we wanted to, oh, my God. Sorry, we're having trouble with our dog ******* me off.
So we had a trial that we put in this year.
Where we looked at tilled and no tillage.
We looked at manure broadcasted with tillage.
Injected manure cover crops.
No. Till a whole combination of practices that are common in Vermont.
Sorry, can you excuse me for one second?

1:15:04
That's fine.
I will just watch. She's gone.
Did see.
I think Amanda may have had to jump off, but I do see her.
Question in the chat and we can try and dig into that.
Know Heather might not have the answer to this either.
Know Heather might not have the answer to this.
So the question in the chat are they doing now? Any infield research of the health of hives by cornfields based on Munich and testing?
And compared comparing to hives by cornfields without Unix, managed by beekeepers the same way.

So.
We cannot get to that.
Know that we're.
Aware. Yeah. Go ahead, Steven.
Well, Brooke, are you still on?

DB **Decker, Brooke** 1:15:49
Yep, I'm on.

1:15:51
Yeah. So we have a a ongoing study which is not directly addressing that question, but we are looking at.
We have a long term study on health of hives. The thirty Thirty six study and Brooke. He might just briefly mention it and we can always come back and give a report to the board on it.

DB **Decker, Brooke** 1:16:12
So just to build some time.
So we have 6 sites throughout the state and this is 3036. Is the the number referencing the Statute so it's under the apiary statute in 30.
36 is the number I forget the 1st 3 numbers, but Heather's back.
So we can report on it if folks are interested in hearing more about that survey.

1:16:36
Yeah, we will.
Yeah, we.

HD **Heather Darby** 1:16:36
Sorry about that.

1:16:36
We'll put that on the agenda.
Yeah, for one, we can just do it on a future, maybe March.

Decker, Brooke 1:16:41
Yeah, March 'cause, if it's may, I'm gonna be insane.

1:16:42
Agenda.

Decker, Brooke 1:16:45
So yeah, earlier than later. Yeah. Perfect. OK.

1:16:46
You're gonna be busy.
Yeah, we'll do it in March.
OK.
Great. Thanks.
Go ahead, Heather.

Heather Darby 1:16:52
Alright, sorry.
Yeah. Sorry about that, you guys.
We've got sick kids, sick people and a dog that's super ornery barking at every.
Apparently I'm the only one that can handle it, OK.
That's great. OK, so.
We really wanted to look at how the practices that we use today.
Impact the risk of seed corn magnet.
So we do have a lot of farms that are transitioning to no till, but we also have a lot of farms that are adopting cover cropping.
And also minor injection.
We still have a lot of farms that till fields, so really trying to start to understand if.
Any of these practices put our fields at more risk than others, and so you can see all the common combinations that we looked at.
Cover crops again no till tilled with men or without injected menor. Etcetera.
So you can see that the results were highly variable.
So this is the percent of seacorn maggots seed damage, and you can see all the variation in the treatments. It was really hard to to pick up some differences here.

And we did plant very early. It was cold and wet conditions and but still just a lot of variation around this.
So what we did was we worked with a statistician here at UVM to understand the percent probability of having damage.
So we looked at the statistics a different way.
And and So what we did end up seeing is that your probability, your risk to damage from seed corn maggot goes up quite substantially if you're telling.
You're adding manure, so no till systems with no manure at all.
Were the lowest.
You're kind of lowest probability of damage, and with when you add tillage in or you add minorin, the probability of damage goes way up. It you know more than double S in most cases.
So we do know that those fields are at more risk and we're gonna continue to look at this.
You know, into the coming years.
We didn't see any differences with cover crops, though.
And I know other people have seen differences or haven't have seen differences with cover crops.
So we're going to continue to to look at this.
This is just one year of data.
Again, trying to understand risk here.
I see somebody had a question.
I don't know if we want to take that now.

EM **Emily May** 1:20:10
Hey, Heather, this is Emily.
Thank you for presenting on this.
This is really great.
I was just curious on this part. If you were looking at the amount of time from the treatment to the planting, like from tillage or manure to to the time of planting?

HD **Heather Darby** 1:20:28
I was.
It was within a week.

Emily May 1:20:31
OK.
Got it. Thanks.

Heather Darby 1:20:33
And again, it was really based on conditions, right?
So we had a tough, tough season to try to get anything done.
Shawn, I see you have a a question.

Shawn Lucas 1:20:48
Your, your, your kids and dogs make me feel better about mine, first of all.
But I've been there.
Any idea why the the?
Tillage has an effect.
Do you think it's an aeration effect or heating versus cooling?

Heather Darby 1:21:05
Think it's I? No, I think again it's that decomposition. You know that smell? Yeah.

Shawn Lucas 1:21:10
Speeding up the decomposition when you till. Yeah OK.

Heather Darby 1:21:13
You know, there's various literature here and there, you know, like those Hammond papers that talk about.
You know, plowing under cream, manures and just.
You know, they found. And I think Emily, maybe this is what you were getting at to, you know, they found if you waited several weeks and and this is like the old recommendation anyway.
You plow under a lot of lush green material.
You should wait two to three weeks before you plant.
But you know, I think we all know that's not normally might be an option, might not be.

Shawn Lucas 1:21:47
Always practical.
Thanks.

Heather Darby 1:21:52
Yeah.
I don't know if you wanna take one look. Yeah.

1:21:58
Yeah, sure. We can go ahead, Ross.

Saxton, Ross 1:22:01
Yeah, not to interrupt the rest of the presentation here.
Yeah, I was wanted to just mention I've heard from several several farmers this past year being wanting to be really cautious about cover crops because they're making the assumption that cover crops without neonics is going to cause more problems and crop loss.
So I just was hoping and this is not a conversation for right now, I don't think but for later I may be at the conference here in a couple weeks.
Cover crop conference can be.
A discussion of just kind of getting ahead of those.
Conceptions. And then what we know about this and letting the farms know.
So all of a sudden, we're not losing a lot of the progress that we've made over the years with more cover crops and then all the data relating related to loading what not so and then you know, I've seen some other articles talking about how cover crops are.
More effective than insecticides are for managing pests and whatnot, so hopefully we can get ahead of it a little bit with what we do know.

Heather Darby 1:22:57
Yeah, I mean.
It I think it's really depends also on the cover crop and some people have shown that I mean.
Majority of the cover crops here are if they're left to get large, their no till systems.

Which we find not to be very conducive.
And mostly what we have is grass.
And that doesn't seem to be as attractive.
So I think there's a lot to learn. I did.
Cornell's done a similar study.
And they also haven't seen an effect of cover crops either. So.
But we just we got to keep monitoring.
So.
Here.
So there's a lot of talk about using growing degree calculators, monitoring flights, looking at risk.
I just went to the Cornell meeting last week or two weeks ago and.
You know basically where we're at right now is that.
Just 'cause we have a peak flight. Doesn't mean we're gonna see damage and.
The flies are out there early.
They're, you know, they're there's just not.
There's not enough.
Predictability. Just looking at growing degree days and flights to determine if they'll be damaged so.
Both of our teams are looking at other factors. Some of those I just mentioned.
And so this is seems like less of an option at this time.
Not that it's not important to monitor flights.
And if they'll be damaged, but it still seems pretty not predictable.
We have been looking at like planting corn across a really wide window to see if we can get damage and.
Monitoring flights and and we really haven't picked up anything either. Even when we plant on peak flights.
So you know, here's the data from this year. You can see we planted the 4th of May.
I mean completely horrible conditions to plant in cold and wet.
And we planted to the 8th of June that.
Blue bar that goes up and down.
You know, those are the seed corn maggot adult counts.
So you can see where there's some peaks there.
Where it goes kind of up and down. We have a big peak in June.
You know, theoretically all the corn would be planted by that time and be warmer.

But even when we planted in the 4th of May, you know we did see significant differences between treated and not treated seed, but we had higher corn populations in the not treated seed and we saw some of these same things last year where mostly we didn't see any.
Difference between treated and not treated, regardless of the planning date.
What you what you should note here, which is interesting is that.
You know, we're planting at 34,000 seeds per acre and we're losing, you know, about 10,009 to 10,000 plants per acre in those count.
And that's not to.
It's not to seed corn that yet.
So you know, there's other things happening out there.
The conditions are not good.
Regardless of seed treatment, we're losing plants.
So we've got a lot more work to do really to understand again risk, when do we see these outbreaks?
Quickly, I want to talk about the work we've been doing looking at dye mites, which is considered.
The alternative to Neo nitinoids.
There's already companies that are treating with dye imides.
It's already an option for farmers at this point.
They are more expensive to produce.
Quite a bit more expensive than neonicotinoids, so certainly the cost of that seed treatment would be higher.
Supposedly they have a lower toxicity than non target insects and they're not.
They're not as water soluble.
So there's some benefits, definitely it seems to using dyamides.
Over neonicotinoids and we looked at that this year.
As well as looking at Spinoza, which would be an organic alternative.
So this is corn seed. You can see there's a control on the top with BM, that's bone meal.
So we kind of artificially added organic matter, decomposing manure basically, or bone meal, and then we have a control.
So the control is just untreated C, so both of these control with bone meal control without it.
Completely untreated C.

Then we had a fungicide treatment, so fungicide.
Only then we had fungicide and dyamides fungicide and neonics and fungicide and spinosid.
So you can see the amount of seed damage that we saw.
When there wasn't any seed treatment and it was quite significant and again we planted May 7th, I think.
I mean, really early, very poor conditions.
Trying to get damage.
When we added a fungicide, you know we reduced the amount of seed that was damaged right quite considerably by about half.
When we added an insecticide on top of that, we reduced it again by half.
So you know in in this year.
Having both any of these insecticide treatments and the fungicide, we saw far less damage C.
Still a lot.
25%'s a lot, but it's better than half.
Or 3/4.
So you know, they they do produce more healthy plants when you're using them under these adverse conditions.
Now the interesting thing here is that we did look at corn population.
So how this was done?
In Cornell and and we did the same exact experiment, we planted 2 rows of corn.
20 feet long, 6 replications.
With the different seed treatments, right?
And then we counted the populations.
In one row and then the other row we dug up every single seat. We knew how many seeds we put out there and we dug up every seed.
And then we evaluated it for damage.
So we planted at 36,000 plants per acre and you can see the reduction in plant stands.
Without any seed treatment.
And it was quite substantial.
But the yield reductions were still substantial, even with seed treatment in a in a poor year.
This, unfortunately, this study was not taken to yield that would have been very

interesting.
It wasn't the methodology.
And because you're destructively sampling all of these things, you know there's no real way to do that.
We did the same thing in soybeans. Very different story in soybeans.
Soybeans are generally planted later.
We planted these.
I think it was about the middle third week of May actually.
You know you can see the control with bone Mill.
We had more.
We had the most damage.
But then the others either control or with fungicide or neonics.
You know, we we had very little damage, not like the pond.
And the populations didn't really vary.
And this, you know, this was we had to dig up 180 seeds or something.
And look at all this so that I'll end on that.
We're gonna repeat this study again.
All the studies are being repeated, actually.
And then we're gonna expand.
Our on farm sites I don't have last year's on farm data completed yet, so I didn't show it, but we will be expanding the on farms site.
So I will stop sharing.
And yeah.

1:32:33
Thank you, Heather. That was awesome. Great.
Data download and thank you everyone for asking questions that she went along.
I do see that there's more in the chat.
As far as this information sharing, so I will include the chat within the transcript.
That always is the case. If things are shared in the chat, they're included in the transcript of the meeting and then.
I encourage members to click on any links that were provided in the chat if they're interested.
And any.

Last questions for Heather.
Go ahead, Roy.

RB **Roy Beckford** 1:33:22
Any other things?
This feels like a wonderful elaboration on what you did on Friday afternoon at the Champlain Valley Farmer Coalition panel discussion.
I had one question that I'd written down here and it goes back to the to the dust collection thing.
Is is.
Does it make a difference with the type and make of the planter that's using there at all?
Any relevance?

HD **Heather Darby** 1:33:53
Yeah, I mean it was.
In the earlier Corn Dust Consortium studies, they they saw.
Some difference in planners, especially the old plate planners that were out there, you know, a lot of people remember that there still are some plate planners, but these vacuum planners seem to be.
You know the ones that you know they're most common today and.
Whether there's differences between, you know, a white or a John Deere or a Great Plains planner, we haven't looked at that yet.
But it was pretty variable in their studies. They couldn't really pick up much what they tried to do was to filter the exhaust.
They tried to catch it and kinda use like a dust collection system on the planner.
And it just.
Pretty unrealistic.
It didn't really.
It didn't work.
But you know that was the direction people were thinking, yeah.

1:35:14
OK, Sean.

Shawn Lucas 1:35:17
Heather, I'm just curious what your thoughts are on spinoset as a neonic alternative and and and I want to think of it in terms of.
You know, we have a lot of.
I don't how much organic corn or soybean is grown here in Vermont.
I suspect it's not very much, but we have a lot of organic producers that may use spinach it on their farms, right?
Are we worried about resistance in the long term if we're starting to put all that spinach it out in the environment?

Heather Darby 1:35:39
Yeah.
Yeah, I mean, that's certainly a possibility we know.
You know it can already be an issue.
I.
I don't.
I definitely see Dye imides being likely the alternative here. Like I said, most of the seed companies already geared up.
You know, if they're selling seed in Canada, they already have an Ave. to do that.
There are some commercial seed producers.
Or sales folks in the northeast that already offer dynamite.
So I imagine that's likely the direction people are gonna go.
So I don't know but.
I I mentioned that I you know, we're collaborating with Cornell and I attended their meeting a few weeks ago.
Their results are very similar to ours.
We're having, you know, we're really having trouble identifying.
Risk like what really causes that risk and then translates into yield loss.
And.
We're trying to produce that right.
We've seen it.
I've seen it.
I've seen it a number of times.
I've seen on organic farms.

I've seen on conventional farms.
But but what are those conditions that most likely lead to that? I think is is really what we're like trying to focus in on now.
I appreciate everyone's questions and I know I I don't have certainly do not have all the answers.
We're kind of we're doing the best that we can.
And all this stuff takes time and.
You know, probably should have been done awhile ago.
It's funny, there's very little research from 1993 to 2023 basically on this topic, so you know.
I know why, but kind of Obama, yeah.

1:38:12
Thanks, Heather.
As always, we really appreciate you giving us these updates and we appreciate all the work that you're doing to help.
Us the answers to our questions.
So thank you.
Yep, thanks.

HD **Heather Darby** 1:38:26
Thanks for allowing me to have my real life on your meeting.

1:38:31
We all know.
We do.
We get it.
Do.

HD **Heather Darby** 1:38:36
My 12 year old walking through here swearing I'm like, Oh my gosh, where?
Keeping it real. Yeah, OK.

1:38:43

It's OK.
Well, thanks, Heather.

HD **Heather Darby** 1:38:47
All right.
Thanks everyone. All right, bye.

1:38:53
Yeah, actually.
So we the the next thing on the agenda was just an update of where we're at with our BMP.
Rule and the answer to that is that it's currently under agency of Ag kind of internal review.
The draft rule that is going through that internal review is what we saw on December ninth.
And then what based on the comments that we got a few of the things that we adjusted.
Our the IPM definition is the same as what's in the pesticide rule, which is actually just good practice all around to have you know, the same definition across different rules.
And then things are ordered.
Management practices are ordered.
Kind.
Of in.
Keeping in mind the IPM tenants, so they're ordered under each section so that scouting, monitoring economic thresholds development.
Our first and then alternative methods.
Are all listed before you get to best management practices.
Are all listed before you get to best management.
That reference to using the unit test site itself or using.
So it kind of aligns with IPM tenant, a lot of discussion on December ninth was kind of about the communication.
So there is a best manager practice that is listed in the rule about.
A user of a unit treated seed should.
Notify.

Apiaries that have hives on the premise some of the discussion was around.
They have to know.
They have to.
So the user of the seat has to know that a hive is on the premise.
We added a detail in that best management practice.
Providing that that contact information is made available to the user of seat.
That was Jonathan Chamberlain.
Advice is that the owner.
There's kind of, you know, might be a middleman and a break of that communication between the owner of the land and then the person who's actually farming the land.
And so who is actually using the seed so.
We.
Can't have a because the the audience of the rule is the user of the seed, so we can't have a a mandate or a recommended practice towards the apiary. The Hive owner in the rule.
Right.
So it's kind of.
Can't just say you do this and you do this. You know there's only one targeted audience of the rules, so we had to just say basically, we added a detail in there provided that that contact information is given to the user of the seat.
It tries to get at that comment that Jonathan Chiberland had.
And then there was discussion in December about aerial applications. And so we added.
A.
Basically saying that any aerial application needed to adhere to the pesticide rule, and then any permit condition. So any aerial application Vermont needs to apply for and be granted an aerial permit, and then within that permit is where you can apply more specific conditions.
According to the situation.
And so those mandatory conditions within the permit can help navigate kind of all of those nuances that we were discussing in December.
And so we felt that was the best way to say, OK, well, in the best management practices we need a permit anyway.
So you need to.
Adhere by permit and the permit avenue is where we can have specific conditions.

And then.
I think the last.
Adjustment that we made is the Zercie 's recommendation had.
The best management practice to make sure that your equipment is calibrated and functioning properly.
That was missing in our.
Rule. And so that was added.
Based on members recommendation.
And So what needs to happen is with that rule once.
Agency of AG is ready to go with it.
We are, according to statute, we have to submit a copy of the draft rule to the Senate Committee on Agriculture and the House Committee on Agriculture, Food Resiliency and Forestry.
To review.
So that's in six VSA section eleven O five A so that it says that we need to submit it to those committees thirty days before we go into filing.
That's our next step after this review.
That's kind of where we're at.
Any questions or comments?
Oh, I'm gonna say, huh?
Oh yeah, go ahead.
I just wanna thank the board members for working on the recommendations and you know, reviewing it and making recommendations.
Appreciate all the input on that and there'll be lots of opportunity for input going forward.
When we go into the public rule making process and then through the Legislative Committee on Administrative Rules, that was another.
There's another opportunity there so.
Plenty of opportunity to comment on coming up.
That we wanted to share is that we received.
A public comment from kind of jointly from.
The American Sea Trade Association.
The American Sea trade.
Crop Life, American biotechnology innovation organization.
Forgive me, I'm not updating on everyone who's joined us. While we are presenting,

but I can.
I sent that to the AIB members.
Is anybody here from any of those organizations that wants to address the?
Better that was submitted.
Dylan Gabbert is on there.

DG **Dillon Gabbert** 1:45:19
Hello everyone. Yeah.
I'm and certainly happy to to represent the the group for for those comments.
Certainly you know appreciate the the work that you all are doing as a task force and and emphasize the the importance of of treated seed.
For, for agriculture and and for our farming community and really appreciate the the emphasis on education that you guys have put forward for, for the the Bmps that you've developed but.
Realistically, you know, happy to to discuss the the comments or or to to to share them more broadly. But thank you very much.

1:46:09
AIB members have come.
AIB members have.
I know Wendy Su did respond, a notion unable to join us today.
She had no further comment on this letter.
But I wanted to give a other Members opportunity to comment if they wish.
I will.
This will be posted on the AIB website along with our minutes and material from today's presentation so it will be available to everybody on the call today.
Are there any other members of the public who wish to make?
Comment and I guess before I go to that, any other Members?
Wanna bring up anything more to discuss before I move to public comment?
So, is anybody on the call that wishes to make a comment?
Great.
Thank you all for joining us.
Thank you, Heather, for informing us.
That was great.
And so I look for kind of a reshuffling of your calendars.

So there'll be probably cancellation and then.
Resubmitting for twenty twenty five AIB meetings. Our next meeting will be March twenty fourth.
But same afternoon time slot.
We are ending an hour earlier today depending on how many people we have signed up for the agenda, so hopefully we'll maybe have Brooke come in and talk about to address the Amanda 's question.
About some pollen sampling or beehives sampling.
First sampling.
First.
The thirty thirty. Sixty.
Yeah. Thirty thirty.
Yeah. Thirty.
I'm not remembering that number thirty thirty six testing and then also I know that we have in the works someone to come in about a developing program for Ag classic disposal.
Right.
So that's kind of what's on the agenda. If Members have other things they would like to see, please let me know.
Happy to bring.
People in.
Or track down information that you guys are looking for.
I will resend out members to those eligible, the new per diem reimbursement form.
So please fill those out.
So some Members are eligible for fifty day fifty dollars a day per diem for attending meetings and or any mileage incurred. If you're traveling to the meeting in person.
So I'll send that outlook for that in an e-mail.
We have a new mileage number.
That's it.
Thanks all.
Happy. Twenty. Twenty five. Thanks.

SL **Shawn Lucas** 1:49:31
See it.

1:49:32

Thank you.

It's you guys. Thank you.

Griffith, Morgan stopped transcription

Meeting Chat

Ross Conrad 1:43pm

1 ng per Centimeter squared is equal to how many parts per billion?

Emily May 2:00pm

Here is a paper that might help answer some of the planter dust to bee neonic exposure questions, like neonics getting into flowers from dust deposition/soil uptake. It was published in 2012 - I think Heather is saying seed coatings have improved since this research was done.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0029268
Populations of honey bees and other pollinators have declined worldwide in recent years. A variety of stressors have been implicated as potential causes, including agricultural pesticides. Neonicot...

DiPietro, Laura 2:00pm

I have to attend another meeting. Heather, thank you for doing this research and sharing.

Emily May 2:00pm

@Ross ng/cm2 is a measure of area, not volume, so it can't be converted directly

Amanda St.Pierre 2:14pm

Are they doing now any in field research of the health of hives by cornfields based on neo nic and testing and comparing to hives by corn fields without neo nics managed by beekeepers the same way?

I have to jump off but would like to see the answer to the question after the presentation ends. thank you for all your hard work Heather!

Emily May 2:19pm

I think this might be the best study on that question (from Ohio) https://setac.onlinelibrary.wiley.com/doi/full/10.1002/etc.4957