

Agricultural Innovation Board Meeting

July 24, 2023 1pm-3:45pm

Transcript Text

0:0:0.0 --> 0:0:4.130

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright, it's 1:00 PM on July 24th.

0:0:4.220 --> 0:0:8.430

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We're officially calling this meeting of the ID to order.

0:0:8.540 --> 0:0:26.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

As a reminder, this meeting is being recorded as public record and that's participation in a recorded meeting will be deemed as consent to be recorded, including statements both written and oral public records, including this recording, can be requested at anytime in accordance with the Vermont Public Records Act.

0:0:26.770 --> 0:0:31.180

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So welcome everybody to AIB.

0:0:31.630 --> 0:0:45.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We're gonna do a quick round of introductions before we hop into our agenda, so I'm gonna start with people on the phone.

0:0:45.990 --> 0:0:48.780

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So Claris do you?

0:0:53.380 --> 0:0:57.100

Cutler, Clarice

Hi there, this is Clarice Cutler with the Vermont Agency of Natural Resources.

0:1:1.120 --> 0:1:1.630

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Great.

0:1:2.140 --> 0:1:2.530

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

0:1:2.900 --> 0:1:6.840

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, I'm doing board Member source with Clarence is a board member for us, Ryan.

0:1:8.930 --> 0:1:11.750

Ryan Rebozo

Ryan Rebozo, representing the Vermont Center for Legal Studies.

0:1:15.870 --> 0:1:16.650

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Steve sugar.

0:1:24.770 --> 0:1:29.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Maybe he's not quite hooked up yet, but he's a member representing.

0:1:30.320 --> 0:1:31.210

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm.

0:1:31.460 --> 0:1:32.570

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Graph and livestock.

0:1:35.610 --> 0:1:36.110

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Wendy too.

0:1:40.20 --> 0:1:40.540

Wendy Sue Harper (Guest)

I'm Wendy.

0:1:40.550 --> 0:1:45.680

Wendy Sue Harper (Guest)

So Harper, I am a soil scientist and hold the soil biology position.

0:1:50.430 --> 0:1:51.310

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm.

0:1:51.500 --> 0:1:53.870

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

In the room it's you get.

0:1:54.140 --> 0:1:54.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Ohh yeah.

0:1:54.570 --> 0:1:56.170

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Steve, where you on audio now, Steve?

0:1:56.180 --> 0:1:56.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
You are.

0:1:56.490 --> 0:1:58.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
You wanna do a quick introduction?

0:2:0.470 --> 0:2:1.150

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We are on mute.

0:2:4.140 --> 0:2:6.550

Schubart, Steven
Apologies guys, I'm a Google meet guy.

0:2:7.10 --> 0:2:8.610

Schubart, Steven
I'm you schubart.

0:2:8.620 --> 0:2:12.380

Schubart, Steven
I'm on the board and I'm representing grass based agriculture.

0:2:13.560 --> 0:2:14.510

Schubart, Steven
I think in meet.

0:2:16.610 --> 0:2:17.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thank you.

0:2:19.270 --> 0:2:24.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
In the room, we have our welcome, our new Member and you wanna do a quick introduction?

0:2:24.690 --> 0:2:26.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
I am his orig.

0:2:26.390 --> 0:2:28.890

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Time that EVM on the plant apologist.

0:2:34.750 --> 0:2:41.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
My Steve Steve Cornell, director of the Farm division at the Vermont Agency of Agriculture Food Markets.

0:2:43.180 --> 0:2:45.830

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And I'm a member of Morgan Griffith.

0:2:46.540 --> 0:2:50.410

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Also work for Agency of agriculture from the market.

0:2:52.90 --> 0:2:56.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Now I'm going to go continue going around the room here so we have.

0:2:56.570 --> 0:2:57.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Hello.

0:2:57.190 --> 0:3:5.190

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm Stephanie Smith with the Vermont Agency of Agriculture Food Markets, and I'm assistant director within the public Health and Agricultural Resource management system.

0:3:7.480 --> 0:3:11.30

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Still pass I am a member of the agency and a good market.

0:3:13.110 --> 0:3:17.340

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And Matt Wood, I'm with the agency of Agriculture, Food and markets.

0:3:17.400 --> 0:3:20.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm a pesticide feed, seed and fertilizer field agent.

0:3:24.110 --> 0:3:24.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK.

0:3:24.370 --> 0:3:29.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And R, we have a few people joining us.

0:3:29.20 --> 0:3:30.430

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm just gonna go down the list though.

0:3:31.40 --> 0:3:31.960

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Emily version.

0:3:34.330 --> 0:3:35.380

Émilie Bergeron, CropLife Canada (Guest)

Yes, good afternoon.

0:3:35.390 --> 0:3:38.770

Émilie Bergeron, CropLife Canada (Guest)

In medieval I'm vice president, chemistry with Croplife Canada.

0:3:41.430 --> 0:3:41.820

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

0:3:41.830 --> 0:3:42.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And I'm sorry.

0:3:42.370 --> 0:3:44.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm butchering name this one.

0:3:44.600 --> 0:3:45.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I can handle John.

0:3:48.850 --> 0:3:49.700

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Go ahead, John Tooker.

0:3:52.660 --> 0:3:52.990

John Tooker

Yeah.

0:3:53.0 --> 0:3:53.250

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

0:3:53.0 --> 0:3:53.730

John Tooker

Good afternoon.

0:3:53.820 --> 0:3:54.190

John Tooker

Yep.

0:3:54.200 --> 0:3:56.410

John Tooker

Thank you, John Tooker.

0:3:56.590 --> 0:4:2.920

John Tooker

I'm a professor of entomology and extension specialist at the Pennsylvania State University in the Department of Entomology.

0:4:5.660 --> 0:4:7.410

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Sean uh.

0:4:11.190 --> 0:4:13.250

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Luis, Robert.

0:4:13.290 --> 0:4:14.770

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And I'm saying that wrong probably.

0:4:15.660 --> 0:4:17.560

Louis Robert (Invité)

No, that's right.

0:4:17.970 --> 0:4:18.390

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright.

0:4:17.900 --> 0:4:18.430

Louis Robert (Invité)

Hello.

0:4:18.440 --> 0:4:19.830

Louis Robert (Invité)

Good afternoon to all.

0:4:19.960 --> 0:4:24.530

Louis Robert (Invité)

I'm Louis Labaran and I'm a consulting agronomist now in Quebec.

0:4:24.720 --> 0:4:29.680

Louis Robert (Invité)

Since my retirement from the Ministry of Agriculture last year, we are in Quebec.

0:4:32.720 --> 0:4:33.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thanks for joining us.

0:4:37.900 --> 0:4:38.970

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Brad Mitchell, right?

0:4:38.980 --> 0:4:39.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Brad is your first. Yep.

0:4:40.380 --> 0:4:40.650

Mitchell Bradley USRS

Yeah.

0:4:40.660 --> 0:4:42.100

Mitchell Bradley USRS

Hi, I'm Brad Mitchell Wilson genta.

0:4:44.30 --> 0:4:46.160

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Think and look at.

0:4:48.270 --> 0:4:49.710

Rhoads, Lucas

I all Lucas roads within a DC.

0:4:52.960 --> 0:4:53.840

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And that.

0:4:56.500 --> 0:4:59.420

Szczukowski, Zach

It's actually kowski with the agency of Agriculture and Food and Markets.

0:5:2.740 --> 0:5:5.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright, thank you all.

0:5:6.740 --> 0:5:12.220

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm, we just a quick housekeeping.

0:5:12.230 --> 0:5:13.710

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So we sent out the June.

0:5:16.210 --> 0:5:17.990

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

26 meeting minutes.

0:5:18.50 --> 0:5:22.700

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I didn't hear any changes or suggested edits to the.

0:5:22.710 --> 0:5:29.410

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Those are we all OK with them from our Members and seeing a nod.

0:5:29.470 --> 0:5:31.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I think when you are you got back to me said they looked fine.

0:5:33.570 --> 0:5:37.820

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm seeing that alright, so those are good the agenda.

0:5:41.60 --> 0:5:47.70

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Was up, but well, we don't need to put that, but so we have 4 speakers for us today.

0:5:47.80 --> 0:5:50.290

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Well, three outside speakers, so we have on the introduced himself.

0:5:50.300 --> 0:5:56.940

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So Doctor John Tucker, Lewis Robert and Emily Berjon and myself for Canadian.

0:5:58.120 --> 0:6:0.960

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Overview and so let's.

0:6:3.260 --> 0:6:7.70

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Just do it because their time is precious.

0:6:7.240 --> 0:6:7.960

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

What do we I mean?

0:6:7.970 --> 0:6:9.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Ohh Amanda is in the queue.

0:6:10.450 --> 0:6:10.850

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

0:6:11.400 --> 0:6:12.650

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That ever introduce yourself.

0:6:12.700 --> 0:6:12.900

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK.

0:6:15.0 --> 0:6:15.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Did you admit her?

0:6:15.920 --> 0:6:17.410

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yep, I just said, I mean, I can.

0:6:17.420 --> 0:6:18.870

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
You hear us?

0:6:25.700 --> 0:6:25.940

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Ohh.

0:6:25.950 --> 0:6:26.180

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Sheet.

0:6:27.200 --> 0:6:28.250

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Amanda, are you on?

0:6:28.920 --> 0:6:29.400

Amanda St.Pierre
I am.

0:6:28.260 --> 0:6:29.530

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
If you could quickly introduce.

0:6:29.410 --> 0:6:31.210

Amanda St.Pierre
I'm having a hard time with this sound, sorry.

0:6:32.90 --> 0:6:32.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
OK.

0:6:32.570 --> 0:6:34.0

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
That's uh, we can hear you.

0:6:34.10 --> 0:6:34.260

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Great.

0:6:34.270 --> 0:6:36.960
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
If you could just introduce yourself, that'd be great.

0:6:36.970 --> 0:6:38.80
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
As a member of AIB.

0:6:38.670 --> 0:6:39.160
Amanda St.Pierre
OK.

0:6:39.170 --> 0:6:41.680
Amanda St.Pierre
Hi other than joining late, I might.

0:6:41.690 --> 0:6:44.170
Amanda St.Pierre
Apologies, Amanda staying here.

0:6:44.180 --> 0:6:45.540
Amanda St.Pierre
At dairy Farmer in Berkshire.

0:6:49.60 --> 0:6:55.450
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thanks, Amanda and I and I had one other Kim O'Brien, could you do a quick introduction?

0:6:58.0 --> 0:6:58.570
Kimberly Obrien
Sure.

0:6:58.700 --> 0:7:8.70
Kimberly Obrien
Kimberly O'Brien, I'm with Bayer crop science, state policy and advocacy based in Massachusetts and cover the northeast.

0:7:10.110 --> 0:7:10.340
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
I think.

0:7:12.80 --> 0:7:12.370
Kimberly Obrien
Kim.

0:7:18.100 --> 0:7:19.520
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Alright so.

0:7:21.940 --> 0:7:32.340

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I am going to pass the baton to Doctor Tucker for our first the presentation of the afternoon.

0:7:33.830 --> 0:7:37.50

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

John, you can share your screen.

0:7:40.40 --> 0:7:40.680

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

If you'd like.

0:8:25.430 --> 0:8:27.860

John Tooker

OK, did that work?

0:8:27.950 --> 0:8:28.600

John Tooker

Can you see anything?

0:8:29.630 --> 0:8:32.970

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We can see like a line of all your slides. Yep.

0:8:33.340 --> 0:8:33.550

John Tooker

Ohh.

0:8:33.560 --> 0:8:33.900

John Tooker

Perfect.

0:8:33.910 --> 0:8:34.670

John Tooker

OK, great.

0:8:34.760 --> 0:8:36.150

John Tooker

I had to change some permission thing.

0:8:36.160 --> 0:8:36.460

John Tooker

Who knows?

0:8:38.50 --> 0:8:38.450

John Tooker

How's that?

0:8:39.980 --> 0:8:40.310
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Perfect.

0:8:41.0 --> 0:8:41.860
John Tooker
OK, perfect.

0:8:41.870 --> 0:8:43.50
John Tooker
I don't hear that every day.

0:8:43.500 --> 0:8:44.40
John Tooker
OK.

0:8:44.800 --> 0:8:45.150
John Tooker
All right.

0:8:45.160 --> 0:8:46.320
John Tooker
Well, good afternoon again.

0:8:47.700 --> 0:8:48.490
John Tooker
So.

0:8:48.680 --> 0:8:51.790
John Tooker
Morgan asked me to present to the group.

0:8:52.460 --> 0:9:8.490
John Tooker
My research lab has studied the influence of neonics on egg systems since about 2010, and I my goal is to to share some of that those results, but also to provide an overview from kind of our perspective.

0:9:8.980 --> 0:9:19.970
John Tooker
One of my goals is to not repeat what others might have said, but that's kind of hard to do, not having seen kind of the previous contributors presentation.

0:9:19.980 --> 0:9:21.540
John Tooker
So I don't know onward will go.

0:9:25.50 --> 0:9:27.940
John Tooker
OK, so that nice looking animals are ground beetle.

0:9:28.10 --> 0:9:30.300

John Tooker

Ground beetles are central to what I'm going to talk about today.

0:9:31.850 --> 0:9:34.540

John Tooker

I trust you admire the ground beetle.

0:9:34.650 --> 0:9:48.500

John Tooker

OK, so my take home messages are here and I'll repeat them at the end, but to Benjamin is kind of the paradigm for pest control.

0:9:49.160 --> 0:9:53.440

John Tooker

IpM focus on focuses on controlling pests that are economically concerning.

0:9:54.880 --> 0:10:3.200

John Tooker

Bunch of current insecticide use, including neonics seed coatings, is insurance based and not driven by IPM unitary.

0:10:3.210 --> 0:10:8.560

John Tooker

The use is rarely risk based, but preventative into a large degree.

0:10:8.570 --> 0:10:9.560

John Tooker

Forced.

0:10:10.170 --> 0:10:11.340

John Tooker

I'll explain what I mean by that.

0:10:12.760 --> 0:10:19.300

John Tooker

Neonicotinoids, from our research, disrupt many ecological functions and in some cases can exacerbate tests.

0:10:22.0 --> 0:10:22.250

John Tooker

No.

0:10:22.260 --> 0:10:34.810

John Tooker

Till agriculture combined with cover crops provides a great base for conservation farming and IPM and our research shows that if farmers adopt this approach than the insecticides are even less necessary.

0:10:35.810 --> 0:10:41.100

John Tooker

And then, importantly, progressive farmers will embrace IPM if they are showing the benefits.

0:10:41.750 --> 0:10:48.180

John Tooker

OK, so why is that there? OK.

0:10:50.760 --> 0:11:0.970

John Tooker

OK, so one of the goals I have today is to share details of integrated pest management, which is probably a concept that most of you have run across.

0:11:0.980 --> 0:11:3.150

John Tooker

But I think it's good to have most people on the same page.

0:11:4.100 --> 0:11:12.110

John Tooker

So IPM is simply using a combination of tactics, biological, cultural and chemical tactics to control pest populations.

0:11:12.120 --> 0:11:18.430

John Tooker

It's a pretty straightforward idea, but importantly, the insecticides should be the last resort.

0:11:19.620 --> 0:11:29.570

John Tooker

So I PM was introduced in 1959 by entomologists in California, and the main goal was to protect natural enemy populations, which would be allies in pest control.

0:11:29.580 --> 0:11:33.320

John Tooker

So if we can protect naturally populations, we don't need insecticides as much.

0:11:34.640 --> 0:11:41.220

John Tooker

The second key feature is that if we if we implement I PM, we want to ensure profitability.

0:11:41.230 --> 0:11:47.350

John Tooker

So we're only gonna use insecticides when we know that there will be a return on the investment of using the insecticide.

0:11:48.360 --> 0:11:50.910

John Tooker

So the key principles are to avoid preventative insecticides.

0:11:51.150 --> 0:11:54.30

John Tooker

A insecticides are only a last resort.

0:11:55.550 --> 0:12:6.620

John Tooker

Preventative insecticides are discussed explicitly in the original description of IPM, and it's acknowledged that it should be a rare case unless an insecticide is a perennial threat.

0:12:7.570 --> 0:12:10.450

John Tooker

A perennial economic threat to be more specific.

0:12:12.10 --> 0:12:19.70

John Tooker

So we want to scout to know what pests are inter fields and then just treat the populations if they exceed what's called an economic threshold.

0:12:19.370 --> 0:12:19.980

John Tooker

They're economic.

0:12:19.990 --> 0:12:26.660

John Tooker

Threshold is more or less the pest density or the amount of damage that have test is doing that will yield lead to yield loss.

0:12:27.210 --> 0:12:34.740

John Tooker

Let's kind of IPM 101 most folks would get this in undergrad or grad school, depending on their degree of choice.

0:12:35.860 --> 0:12:42.970

John Tooker

OK, current field crop production tends to avoid I, PM and relies more on a preventative strategy.

0:12:43.200 --> 0:12:46.230

John Tooker

That is certainly the case of corn.

0:12:46.630 --> 0:12:50.570

John Tooker

It's becoming more so in other crops like soybeans and wheat.

0:12:55.920 --> 0:12:58.70

John Tooker

But I certainly see insecticides as useful.

0:12:58.100 --> 0:13:10.580

John Tooker

It'd be foolish to be in my position and not think so, and I'm talking about insecticides broadly, and that includes leaf applied insecticide, soil applied and sacrifices and seed coatings.

0:13:10.590 --> 0:13:15.70

John Tooker

They are all useful, but they only useful when they are used appropriately.

0:13:15.740 --> 0:13:26.380

John Tooker

Since insecticides were broadly introduced to the United States after and the world really after World War Two, do they have been?

0:13:26.650 --> 0:13:35.840

John Tooker

Their use has increased steadily, so they're overuse has kind of been embedded in their use and ever since they were introduced.

0:13:42.720 --> 0:13:42.930

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The.

0:13:36.530 --> 0:13:49.560

John Tooker

The amount of the amount of insecticides that's being used annually has gone up, and that's even with the pause that was imposed by the publishing of silent spring and the establishment of the Environmental Protection Agency.

0:13:49.790 --> 0:13:53.430

John Tooker

There's been a steady increase in the amount of insecticides used in the United States every year.

0:13:56.140 --> 0:14:9.400

John Tooker

To reemphasize this point that most insecticides are not used via IPM, they're being used as insurance treatments and those insurance treatments can occasionally stop past from doing damage.

0:14:9.410 --> 0:14:17.100

John Tooker

But more often there are decreasing number of good insects out there which can make pest populations worse, and then they're causing environmental concerns.

0:14:17.980 --> 0:14:22.530

John Tooker

I'm not going to go much into the environmental concerns today, but I'll simply mention some of them had passing.

0:14:24.530 --> 0:14:26.400

John Tooker

Here's an example from a turf system.

0:14:26.410 --> 0:14:30.80

John Tooker

This is from a gentleman at Cornell named Kyle Wickings.

0:14:30.90 --> 0:14:45.270

John Tooker

Kyle is a soil, soil entomologist, soil ecologist, and this is a spider plot and it shows the amount of what we call ecological function based on these different axes.

0:14:45.280 --> 0:14:49.890

John Tooker

When you have different amounts of insecticides in the system, and again this is a turf system, not field crops.

0:14:52.740 --> 0:15:7.0

John Tooker

So each axis has a detail that we would like to be maximized in in soil systems, whether it's a decomposer density macro, predator, densities, predators, more generally decomposers.

0:15:8.120 --> 0:15:11.160

John Tooker

Micro Rizal Fungi, colonization and so on.

0:15:12.200 --> 0:15:20.270

John Tooker

You can see the the largest area of a Polygon is the green one, and that Polygon is when we have no insecticides in the system.

0:15:21.40 --> 0:15:24.530

John Tooker

But then when we increase the amount of the suicides, that area changes.

0:15:25.590 --> 0:15:43.790

John Tooker

I'm just not a straightforward relationship, but you can see when we get to the highest application rate of an insecticide and this is a pyrethroid, the amount of soil function we get decreases so that Polygon is the smallest, indicating that the more insecticides we add the ecological function tends to go down.

0:15:47.580 --> 0:15:50.970

John Tooker

OK, so let's move more specifically to the neonicotinoids.

0:15:51.760 --> 0:15:57.510

John Tooker

The neonicotinoid seed treatments are seed coatings as I usually call them have benefits.

0:15:57.620 --> 0:16:13.50

John Tooker

One is that their water soluble, so these things are coded on seeds when the seed is put in the soil, capillary action pulls that water soluble and second side out into the soil a little bit and then when the first root system starts to grow, they can be absorbed systemically by the plant.

0:16:13.60 --> 0:16:16.130

John Tooker

And that's certainly provides a benefit in some cases.

0:16:16.440 --> 0:16:23.410

John Tooker

So these things can protect yield, but to protect yield you need to have economically damaging pest population that has often not the case.

0:16:23.990 --> 0:16:29.650

John Tooker

It appears to provide a targeted application because we're putting it right on the seed and then the plant's gonna take it up.

0:16:31.20 --> 0:16:42.940

John Tooker

We're providing a a low dose, relatively low dose of an insecticide that has relatively low mammalian toxicity and relatively low toxicity to other types of animals like spiders and mites.

0:16:44.80 --> 0:16:50.940

John Tooker

This low dose might be somewhat deceiving though, and I'll kind of get into that because of the toxicity of the insecticides is really, really high.

0:16:52.550 --> 0:17:12.620

John Tooker

So this type of insecticide treatment can provide systemic activity of insect pests for two to three weeks after planting and that two to three weeks has BeenVerified by Christian Krupke it, Purdue University, who has done a lot of extensive experiments harvesting plants after after planting and seeing when the insecticide is detectable.

0:17:12.970 --> 0:17:17.210

John Tooker

So we're protecting plants when they're young and vulnerable by this approach.

0:17:20.360 --> 0:17:28.870

John Tooker

And this is the general idea and I was lent this or given this slide by some colleagues and industry, this is the general idea.

0:17:28.880 --> 0:17:38.340

John Tooker

So this insecticide code on the CD is providing this kind of this sphere of protection around the seed, and then the insecticide goes up into the plant, providing even further protection.

0:17:38.350 --> 0:17:42.320

John Tooker

So that's the general idea of this seed coding.

0:17:45.490 --> 0:17:48.650

John Tooker

So let's think about the limitations of the seed coatings.

0:17:49.350 --> 0:17:55.400

John Tooker

First one is similar to a strength that, but it's only providing 2 to three weeks of protection.

0:17:55.410 --> 0:18:2.200

John Tooker

If we're growing corn for 100 days or more, those two to three weeks are not everything. But they are something, right?

0:18:2.790 --> 0:18:6.620

John Tooker

Only one to 5% of active ingredient tends to enter the plant.

0:18:6.790 --> 0:18:15.150

John Tooker

There have been higher numbers reported in a crop like from like sunflowers, but studies focused on soybeans and corn.

0:18:15.560 --> 0:18:23.910

John Tooker

The amount of the seed coating that's actually getting to the plant is closer to 1 to 5%, so it's awfully low compared to the amount being put into the environment.

0:18:27.100 --> 0:18:27.400

John Tooker

Oops.

0:18:30.400 --> 0:18:31.720

John Tooker

Not sure what to do here.

0:18:36.980 --> 0:18:37.570

John Tooker

Morgan.

0:18:37.700 --> 0:18:39.980

John Tooker

Sorry about this, my screen seems to have frozen.

0:18:43.150 --> 0:18:50.930

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK, we can see we went back to see like your whole your ohh your size is together.

0:19:5.780 --> 0:19:6.310

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

They froze.

0:19:6.590 --> 0:19:12.520

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, you can maybe try and leave and come back down if that's possible.

0:19:34.10 --> 0:19:34.300

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

See.

0:20:59.190 --> 0:21:1.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

No questions can I.

0:21:1.850 --> 0:21:3.700

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Can everyone hear us on the call?

0:21:3.710 --> 0:21:4.200

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Fine.

0:21:6.380 --> 0:21:6.510

Cutler, Clarice

Yes.

0:21:4.370 --> 0:21:7.720

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Everyone else is OK, OK.

0:21:8.660 --> 0:21:8.890

Amanda St.Pierre

Yes.

0:21:8.800 --> 0:21:9.270

Mitchell Bradley USRS

Now we can.

0:21:13.980 --> 0:21:17.570

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm seeing if John can umm.

0:21:19.980 --> 0:21:21.990

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Exit the call, exit and come back.

0:21:28.580 --> 0:21:29.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
That might give him just.

0:21:32.110 --> 0:21:38.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Another minute and then neither will this swap our agenda around.

0:21:38.410 --> 0:21:39.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, we have.

0:21:39.790 --> 0:21:40.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So we text them.

0:21:41.450 --> 0:21:45.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
That's the number that I had is I can try and text it, but I'm not sure.

0:21:47.820 --> 0:21:48.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
She left now.

0:21:57.250 --> 0:21:57.630

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

0:22:48.120 --> 0:22:53.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So planting meaning for see, right?

0:22:54.560 --> 0:22:58.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
That's what they're trying to, yeah.

0:22:58.610 --> 0:22:59.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
The war work here.

0:22:59.500 --> 0:23:0.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
The wars.

0:23:0.840 --> 0:23:3.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, yeah, yeah.

0:23:3.670 --> 0:23:10.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We've had a whole series of presentations on, you know, go back and look at the website, OK, we've had, I don't know how many now.

0:23:10.730 --> 0:23:25.650

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, a bunch from well, from the seed industry, from Peroneus, from Canada about what they're doing there, so.

0:23:28.570 --> 0:23:30.190

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Ah, there he is going to come back.

0:23:38.720 --> 0:23:39.60

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
I don't.

0:23:39.70 --> 0:23:39.320

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
I was just.

0:23:45.470 --> 0:23:45.650

Tooker, John
Right.

0:23:41.650 --> 0:23:45.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Uh, did you got it or do you think you wanna give it one more try?

0:23:46.480 --> 0:23:47.960

Tooker, John
I think I'm back.

0:23:47.970 --> 0:23:50.10

Tooker, John
I switched computers.

0:23:50.20 --> 0:23:51.470

Tooker, John
I'm not sure what the hell happened.

0:23:51.480 --> 0:23:53.710

Tooker, John
Maybe Penn State didn't pay their bill this month.

0:23:53.870 --> 0:23:54.50
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
You.

0:23:56.740 --> 0:23:59.230
Tooker, John
Apologize for that, but that is technology.

0:24:0.990 --> 0:24:3.660
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
OK. We feel that you and our end.

0:24:3.870 --> 0:24:4.120
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

0:24:4.380 --> 0:24:6.920
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
No, we have problems, yeah.

0:24:23.920 --> 0:24:24.640
Tooker, John
Does that look normal?

0:24:25.820 --> 0:24:27.160
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yep, actually does.

0:24:28.130 --> 0:24:28.680
Tooker, John
Incredible.

0:24:29.550 --> 0:24:32.490
Tooker, John
OK, so where were we were somewhere around here.

0:24:34.160 --> 0:24:35.850
Tooker, John
OK, so I went through that.

0:24:41.530 --> 0:24:55.680
Tooker, John
OK, as I would bet that you heard well, I guess I can start at the top, but yeah, I was talking about only the coatings are only providing about two to three weeks of protection.

0:24:56.150 --> 0:25:0.900
Tooker, John
That's in part because so little of the insecticide coded on the sheet actually goes into the plant.

0:25:1.70 --> 0:25:13.700

Tooker, John

That's been confirmed by Purdue University, and importantly, what we're seeing are very inconsistent yield benefits work from Canada and some folks on the call today probably know about this more than I do.

0:25:13.710 --> 0:25:14.400

Tooker, John

And I think you were.

0:25:19.680 --> 0:25:19.930

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yep.

0:25:14.660 --> 0:25:22.620

Tooker, John

Umm, I think he had Tracy Beauty as a guest last time, but only 5 to 8% of the field is actually seal.

0:25:22.760 --> 0:25:26.500

Tooker, John

See yield benefits and those are from those Canadian data.

0:25:26.630 --> 0:25:38.260

Tooker, John

But those production systems are very similar to what we have here in Pennsylvania, particularly in Western Ontario and one of the bigger challenges here is the water solubility.

0:25:38.270 --> 0:25:49.960

Tooker, John

So I listed water solubility as a benefit, but it's also a liability because sufficient rain can wash away the insecticides and certainly remove them from the root zone, polluting groundwater.

0:25:50.450 --> 0:25:52.460

Tooker, John

There's also a kind of a contradiction here.

0:25:52.550 --> 0:25:55.440

Tooker, John

Even though there water soluble, they can persist in soil.

0:25:56.250 --> 0:25:59.960

Tooker, John

My understanding this is perfectly well understood how this is happening.

0:26:0.110 --> 0:26:1.540

Tooker, John

Think about staying in the soil.

0:26:1.550 --> 0:26:3.20

Tooker, John

Water between soil particles.

0:26:3.30 --> 0:26:15.140

Tooker, John

I need to talk to a soil physicist, but there is literature evidence that they can remain in the soil from 7 to 7000 days based on the active ingredients and the different soil types.

0:26:15.940 --> 0:26:17.920

Tooker, John

This is not my area of expertise.

0:26:17.930 --> 0:26:24.700

Tooker, John

That's kind of literature based stuff and then they also limit populations of beneficial insects.

0:26:25.270 --> 0:26:29.900

Tooker, John

Our research focuses mainly on predators that occur in crop fields and not on pollinators.

0:26:30.150 --> 0:26:41.290

Tooker, John

The this acknowledge that pollinators or in the list here and I'll show you some research that we've done that they allow some pest pop places to outbreak by limiting pest populations.

0:26:41.350 --> 0:26:47.270

Tooker, John

OK, some additional limitations that they are they're very good at what they're meant to do.

0:26:47.520 --> 0:26:54.790

Tooker, John

So these are insecticides, they're meant to kill insects, but they are among the most toxic insecticides that have ever been developed.

0:26:54.960 --> 0:27:2.290

Tooker, John

In imidacloprid, for example, one of the seed code, one of the insecticides you can get on, coded on seeds and is the most widely used.

0:27:2.300 --> 0:27:12.170

Tooker, John

And second side in the world, McLeod is 10,000 times more toxic to insects than nicotine, and nicotine is a pretty toxic compound.

0:27:12.180 --> 0:27:17.720

Tooker, John

If I want to use nicotine in my research lab, I need to have special permission and get inspected that once a month.

0:27:20.60 --> 0:27:22.550

Tooker, John

So they are also toxic to other groups of animals.

0:27:22.560 --> 0:27:25.20

Tooker, John

This type of toxicity is not clear.

0:27:27.160 --> 0:27:31.860

Tooker, John

Some evidence came out in recent years showing that they're toxic to mammals via unexpected pathways.

0:27:31.870 --> 0:27:38.310

Tooker, John

They're not doing what a typical nerve toxin would do there, accumulating in spleen and genitals of deer, for example.

0:27:38.640 --> 0:27:50.120

Tooker, John

Why that's happening is unclear, and they are highly talked to some birds and fish, but there are mild on some other birds and some other fish species, and the reasons for this variability is unclear.

0:27:50.130 --> 0:28:6.870

Tooker, John

To my knowledge, one of the more concerning details about neonicotinoids used as seed coatings is their use is not being tracked by the federal government, whether it's the Environmental Protection Agency, the USDA or most state governments.

0:28:7.520 --> 0:28:10.490

Tooker, John

This has led to a blind spot that we have very poor understanding of.

0:28:10.700 --> 0:28:17.470

Tooker, John

Much is being used on the landscape in the United States, a former student of mine, Maggie Douglas.

0:28:18.80 --> 0:28:22.910

Tooker, John

Kind of did some work with the two databases that were available at the time.

0:28:22.920 --> 0:28:28.320

Tooker, John

One from the US Geological Survey and one from the USDA, and kind of cobbled together some information.

0:28:28.330 --> 0:28:29.390

Tooker, John

I'll kind of share that with you.

0:28:29.400 --> 0:28:35.90

Tooker, John

Now these data are from one of the states that do keep track a little bit better than others.

0:28:35.100 --> 0:28:41.340

Tooker, John

This is from the state of Minnesota, showing the amount of neonicotinoids on the vertical axis and the and time on the horizontal axis.

0:28:43.30 --> 0:28:50.230

Tooker, John

And these are different kind of categories of when of where these types of insecticides are being used.

0:28:50.720 --> 0:28:54.950

Tooker, John

Crop chemicals are in red and then all the other categories are in different colors.

0:28:55.670 --> 0:28:56.190

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The.

0:28:55.180 --> 0:28:59.0

Tooker, John

You can see that neonicotinoids are dominated by being a crop chemical.

0:28:59.10 --> 0:29:28.910

Tooker, John

We kind of know that, but there is this kind of dialogue going on in the world that farmers might be using neonicotinoids, the homeowners are too and maybe homeowners are contributing to say the neonicotinoids we can find in streams and rivers based on these data from Minnesota, it's clear that the crop chemicals, the crop, chemical usage dominates and I have no good reason to believe that, say, Connecticut, Vermont, Pennsylvania or wherever is significantly different than that of Minnesota.

0:29:29.140 --> 0:29:31.520

Tooker, John

But again, very few states collect this information.

0:29:32.900 --> 0:29:39.590

Tooker, John

So Maggie's work has revealed or revealed a few years ago now at the amount of neonicotinoids being deployed on the landscape.

0:29:39.600 --> 0:29:50.310

Tooker, John

It's going up considerably, so this is the amount of neonics on the vertical axis over time, starting at about 19 mid 1990s and going till 2011.

0:29:50.320 --> 0:30:18.80

Tooker, John

In this figure, 2011 were the most recent batch of data that Maggie had on hand when we published this paper in 2015, and the different colors are just different cropped species or groups of crops, and you can see in 2004 the amount of, umm, the amount of neonics really started to increase, and that's 2004 is when companies started to coat emeco grid and cosigned it in on on crop seeds dominated by maize from the start.

0:30:18.170 --> 0:30:19.730

Tooker, John

And then soybean kicks in.

0:30:21.440 --> 0:30:36.550

Tooker, John

This next figure shows the amount of change between 2011 to 2014, so that Black line is 2011 and that's where the previous data slide stopped and 2014 is the last or the last data that we have access to from these two databases.

0:30:36.880 --> 0:30:48.910

Tooker, John

What you can see from between 2011 and 2014 is actually a doubling of the amount that we estimate was deployed in the United States and most of it is by seed coatings on corn and soybeans.

0:30:51.580 --> 0:30:55.800

Tooker, John

But again, these data are not available any longer from the US Geological Survey.

0:30:55.810 --> 0:31:2.840

Tooker, John

2015 was the last year, and between the US Logical survey and the and the and the USDA.

0:31:2.880 --> 0:31:6.120

Tooker, John

And these data are no longer explicitly being collected.

0:31:6.410 --> 0:31:12.440

Tooker, John

So we have a total blind spot and how much is being used, but you can see no evidence that the adoption rate was tailing off.

0:31:12.490 --> 0:31:14.620

Tooker, John

Indeed, it seems to be going up pretty steeply.

0:31:17.100 --> 0:31:24.690

Tooker, John

Just to show you what this looks like these maps, I'm going to show you for the US Geological Survey pesticide National Synthesis Project, which is easily found online.

0:31:24.740 --> 0:31:39.730

Tooker, John

This is the amount of Clothi ended in which is the dominant chemical used on corn, and that's the amount shown in 2003, used in 2003 across United States, which is to say none, there's 2011 uh and that's 2014.

0:31:40.10 --> 0:31:48.680

Tooker, John

So what you can see is kind of a a broad expansion as these seed coatings were deployed across the United States.

0:31:51.450 --> 0:32:4.390

Tooker, John

And neonics aren't that special, really, when it comes to the United States capacity to use insecticides just as an aside here, here are two pyrethroids that are also increasing in kind of the amount that are being used.

0:32:4.400 --> 0:32:9.980

Tooker, John

This is Lambda Phi Halothane, also known as warrior, and then there are various generic versions of Warrior.

0:32:10.130 --> 0:32:15.420

Tooker, John

So you can see the Midwest is blanket and this stuff and good chunks in Vermont and then this is by pentran.

0:32:15.430 --> 0:32:19.980

Tooker, John

So lots of insecticides are being overused in the United States.

0:32:19.990 --> 0:32:22.860

Tooker, John

It's not just in the unique thing, but you guys are curious about neonics.

0:32:22.870 --> 0:32:32.20

Tooker, John

So I just say this as an aside that people are ignoring IPM all over the place and deploying these things kind of Willy nilly.

0:32:32.30 --> 0:32:36.520

Tooker, John

I would say on some level back to the new Unix.

0:32:36.570 --> 0:32:42.810

Tooker, John

So in my hands here in Central PA at our Central Pennsylvania research firm, we see no yield benefit from leonick use.

0:32:43.910 --> 0:32:50.610

Tooker, John

These are soybean yields on the left and corn yields on the right between an uncoated seed and a coated seed.

0:32:51.210 --> 0:32:56.380

Tooker, John

And we've done this years in a row and have never seen a yield advantage of using these.

0:32:56.390 --> 0:33:4.320

Tooker, John

And I would believe that your your conversation with Tracy Body would have gotten in more depth on the Ontario data, which more or less show the same thing.

0:33:5.960 --> 0:33:13.170

Tooker, John

One of the challenges of of neonics is that when you put them in the ground, all the insecticide doesn't.

0:33:13.180 --> 0:33:14.810

Tooker, John

Kind of stay right next to the seed.

0:33:15.180 --> 0:33:17.490

Tooker, John

This is a figure we developed a few years ago.

0:33:17.740 --> 0:33:31.870

Tooker, John

We're about 90% to 95% of the material coated on each seed doesn't go into the plant but is lost to the environment either goes to adjacent streams, adjacent plantings, whether those be kind of herbaceous plantings or.

0:33:33.340 --> 0:33:43.150

Tooker, John

Or more natural areas, including forests and just a little bit is taken up by the plant and actually benefits from controlling these insects that might be feeding below ground.

0:33:43.940 --> 0:34:2.110

Tooker, John

I don't have any personal research experience with the amount that's lost to dust, but that's mostly an issue where large planters that are being even newmatic planters or vacuum planters are being used just to say that most of the material that's coded on C does not go towards crop protection, but leeches into the environment.

0:34:4.60 --> 0:34:4.350

Tooker, John

OK.

0:34:4.360 --> 0:34:7.930

Tooker, John

And now I'll talk a bit about some of the research that we've done here in Pennsylvania.

0:34:8.180 --> 0:34:16.350

Tooker, John

This is one of the first inklings of data that we had, that there was something interesting going on with Neo Nixon slugs.

0:34:16.960 --> 0:34:36.280

Tooker, John

So slugs are a significant pest and no till I started on my job in 2008 and since 2008 there the most significant pest that I get calls from by farmers and slugs are an early season pest of corn and soybeans that can also be a kind of a fall pest of cover crops and small grains.

0:34:36.810 --> 0:34:44.740

Tooker, John

But these data are from corn and the vertical axis shows the number of slugs per trap and to trap slugs we just put out white shingles.

0:34:44.750 --> 0:34:45.860

Tooker, John

These are roofing shingles.

0:34:45.870 --> 0:34:51.420

Tooker, John

You might have on your home, but we cut them up and put them in crop fields and just tip them over every week and look what's underneath them.

0:34:51.430 --> 0:35:1.880

Tooker, John

So that's number of slugs per trap on the vertical axis, and this is just the corn growing season are the blue line shows that average number of slugs over that growing season where we had an uncoated seed.

0:35:1.890 --> 0:35:7.440

Tooker, John

So no one sucked aside is in the system and the red line is where we have insecticide coded.

0:35:7.450 --> 0:35:8.620

Tooker, John

So this is a neonic.

0:35:8.770 --> 0:35:18.850

Tooker, John

This is actually close eye ended in on corn and you can see on average over the growing season, we have more slugs where we have the insecticide in the system compared to where we don't.

0:35:21.60 --> 0:35:34.250

Tooker, John

So we looked at this, this, this phenomenon, a little bit more closely in soybeans and I'll show you those soybeans data in a moment, but essentially the bottom line is that these neonic seed coatings are exacerbating slug problems.

0:35:34.860 --> 0:35:45.180

Tooker, John

They're doing this by killing the predators that like to eat slugs, and that allows the slugs to kind of feed unchecked, decreasing crop stands and and yield.

0:35:47.160 --> 0:35:52.80

Tooker, John

So what we found in soybeans is that if you have more slugs, you have fewer soybean plants.

0:35:52.90 --> 0:35:53.130

Tooker, John

That's not too surprising.

0:35:53.140 --> 0:36:4.670

Tooker, John

Any farmer working in a no till system can tell you that just to show you what I'm to explain what I'm showing you here on the vertical axis we have number soybean plants per acre more or less that's per hectare.

0:36:4.680 --> 0:36:6.460

Tooker, John

But you can think of it as acres if you'd like.

0:36:9.250 --> 0:36:9.350

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The.

0:36:6.470 --> 0:36:9.460

Tooker, John

And the number of slugs per trap on the horizontal axis.

0:36:9.470 --> 0:36:13.620

Tooker, John

So as the number of slugs per trap goes up, the success of that soybean stand goes down.

0:36:15.550 --> 0:36:21.200

Tooker, John

Importantly, there's a different effect if you have a neonicotinoid coated on the seed compared to where you don't.

0:36:21.210 --> 0:36:27.20

Tooker, John

So the black dots are from the neonicotinoid treated fields and you can see where we have the neonet.

0:36:27.30 --> 0:36:34.110

Tooker, John

We have more slugs per trap and we have fewer soybeans per acre, indicating that slugs do indeed umm, eat soybeans.

0:36:34.120 --> 0:36:36.560

Tooker, John

But they more soybeans in the presence of the insecticide.

0:36:39.0 --> 0:36:41.510

Tooker, John

We've also been studying the things that like to eat slugs.

0:36:41.680 --> 0:36:49.630

Tooker, John

These things are ground beetles, Rove beetles, some larvae of other beetles like soldier beetles and even fireflies, which are a type of beetle.

0:36:50.260 --> 0:37:1.510

Tooker, John

And this figure shows on the vertical axis predation that we show predation as the proportion of caterpillars being killed and we're using caterpillars here as a Sentinel prey item.

0:37:1.520 --> 0:37:3.850

Tooker, John

So in this lower picture you can see a Caterpillar.

0:37:3.860 --> 0:37:10.10

Tooker, John

It's been pinned to the soil surface and then we come back and we check on that Caterpillar to see if anything has eaten it.

0:37:10.180 --> 0:37:14.490

Tooker, John

This is cruel, unusual punishment, but because their insects, we don't need a permit to do this.

0:37:14.500 --> 0:37:20.820

Tooker, John

If this was a deer or some other type of vertebrate, we're getting a lot of trouble for doing this ohm.

0:37:21.220 --> 0:37:27.270

Tooker, John

So we put the these caterpillars out and these caterpillars are proxy for anything that would want to be eaten out there.

0:37:27.410 --> 0:37:28.150

Tooker, John

OK.

0:37:28.300 --> 0:37:37.860

Tooker, John

And we can see that when we have more predators, the horizontal axis doesn't is number of slug predators per trap to trap slug predators we use what are called pitfall traps.

0:37:37.870 --> 0:37:43.790

Tooker, John

We put these little cups in the ground and the these beetles will just kind of bumble into them and then we can go out and count them.

0:37:43.920 --> 0:37:52.40

Tooker, John

So as the number of these slug predators goes up, the amount of predation on these Sentinel prey item goes up, and that's a good thing.

0:37:52.50 --> 0:37:55.460

Tooker, John

So the more predators we have, the fewer pests will have in a field.

0:37:55.610 --> 0:38:0.640

Tooker, John

But again, notice the color of the dots on average, where we have the insecticide coded on the seeds.

0:38:0.650 --> 0:38:1.980

Tooker, John

That is the black dots.

0:38:1.990 --> 0:38:4.520

Tooker, John

We have fewer slug predators and less predation.

0:38:5.380 --> 0:38:5.850

Tooker, John

OK.

0:38:6.620 --> 0:38:10.50

Tooker, John

So again, these caterpillars that we're paying the ground are proxies.

0:38:10.180 --> 0:38:12.870

Tooker, John

In our case, they're proxies for slugs.

0:38:13.140 --> 0:38:18.30

Tooker, John

We can't do this to the same type of experiment with slugs because they don't have exoskeletons.

0:38:18.40 --> 0:38:21.790

Tooker, John

If you put a pin in the backside of a slug, it's going to pull itself off the pin.

0:38:22.0 --> 0:38:22.710

Tooker, John

It's going to grow us.

0:38:22.720 --> 0:38:23.550

Tooker, John
What kind of cool?

0:38:23.560 --> 0:38:24.400

Tooker, John
All at the same time.

0:38:25.520 --> 0:38:27.250

Tooker, John
And here's kind of the take home message.

0:38:28.220 --> 0:38:34.810

Tooker, John
This shows the number of slugs per trap on the vertical axis compared against predation on the horizontal axis.

0:38:34.820 --> 0:38:36.670

Tooker, John
Again, that's the proportion killed.

0:38:36.770 --> 0:38:38.220

Tooker, John
So the higher number the better there.

0:38:39.710 --> 0:38:43.360

Tooker, John
So as predation goes up, the number of slugs come down.

0:38:43.410 --> 0:38:59.370

Tooker, John
This shows us that those caterpillars pinned to the soil surface are indeed a good proxy for slugs because we're seeing fewer slugs under the trap when a lot of these caterpillars have being eaten, it also confirms that predators can provide a valuable service in crop fields.

0:39:0.280 --> 0:39:7.970

Tooker, John
But because of the insecticides, when we have slugs and predators and insecticides all in the same plots, that's again the black dots.

0:39:8.140 --> 0:39:11.490

Tooker, John
We have less predation and more slugs per trap.

0:39:15.590 --> 0:39:16.40

Tooker, John
Alright.

0:39:16.810 --> 0:39:27.820

Tooker, John

And this is the mechanism of this is that the slugs are feeding on plants, those plants, if they have neonicotinoids in the insecticide, is moving from the plant to the slug.

0:39:28.290 --> 0:39:36.700

Tooker, John

But because the slug is a mollusk, not an insect, the insecticide has no effect on these slugs.

0:39:36.910 --> 0:39:39.650

Tooker, John

And then when a predator comes along and bites when.

0:39:43.950 --> 0:39:47.860

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Look, look at respected.

0:39:47.350 --> 0:39:57.890

Tooker, John

Plant to the slug to the predators and that's enough to disrupt the predator community and will allow the slugs to feed like a more freely and our social experiment there.

0:39:57.900 --> 0:40:7.610

Tooker, John

We had 19% lower standard establishment when we had insecticides and slugs together and we had 5% lower yield when we had slugs insecticide together.

0:40:7.620 --> 0:40:14.80

Tooker, John

So it's not just an interesting ecological phenomenon that only academics are interested, and it actually has real repercussions for farmers.

0:40:14.90 --> 0:40:15.580

Tooker, John

We're actually getting lower yield.

0:40:16.150 --> 0:40:22.970

Tooker, John

We had we did a similar experiment with corn, but it was really wet year and a couple of our plots flooded.

0:40:23.20 --> 0:40:29.790

Tooker, John

So we haven't been able to publish a similar story with that because our data are more limited, but we were seeing a similar effect in corn.

0:40:29.800 --> 0:40:34.380

Tooker, John

Not surprising, I'll beyond this influence of neonics on predators.

0:40:34.390 --> 0:40:41.100

Tooker, John

We've also been studying the influence of neonics on other things, so we asked the question, do you need neonicotinoids limit decomposition?

0:40:41.650 --> 0:40:52.300

Tooker, John

We did this in a three year experiment and this is relevant because in no till systems where you're not turning over the soil regularly, you have a lot of residue that will stick around.

0:40:52.310 --> 0:40:57.660

Tooker, John

There's a typical soybean field in Central PA look at all that residue between the rows.

0:40:58.250 --> 0:41:4.150

Tooker, John

You want to make sure that you have enough decompositions so that residue goes away and doesn't accumulate year after year.

0:41:5.450 --> 0:41:7.340

Tooker, John

In our experiment, we had a control treatment.

0:41:7.350 --> 0:41:10.420

Tooker, John

Then we had a neuronic treatment, and then we had a pyrethroid treatment.

0:41:10.430 --> 0:41:17.640

Tooker, John

Again, pyrethroids are just another type of insecticide that are typically sprayed across fields rather than being coded on scenes.

0:41:18.530 --> 0:41:33.160

Tooker, John

And this figure is just kind of the take home message at the end of a three year experiment we found in the blue line, which is the control treatment that decomposition occurs at this certain rate, and anything above the blue line shows something that decomposing more slowly.

0:41:33.170 --> 0:41:36.920

Tooker, John

So the vertical axis shows the amount of material remaining.

0:41:37.130 --> 0:41:41.240

Tooker, John

So we put this type of straw residue in these mesh bags.

0:41:41.450 --> 0:41:46.780

Tooker, John

We know the amount that's there at the beginning and then over time it slowly degrades.

0:41:46.910 --> 0:41:52.640

Tooker, John

So the blue line is decomposing faster, the red line and the yellow line are decomposing more slowly.

0:41:52.750 --> 0:42:1.110

Tooker, John

The red line and the Yellow Line show a pyrethroid and a neonicotinoid treatment together, so they're both slowing down.

0:42:1.600 --> 0:42:2.80

Tooker, John

Umm.

0:42:2.690 --> 0:42:5.500

Tooker, John

Decomposition and they're doing it significantly.

0:42:5.510 --> 0:42:11.800

Tooker, John

So so this is a 10% decrease in decomposition, which is a serious difference in decomposition.

0:42:14.460 --> 0:42:22.490

Tooker, John

So it's 10% lower with neonicotinoids or pyrethroids, and that slower decomposition is being driven by having fewer decomposers.

0:42:22.500 --> 0:42:33.880

Tooker, John

In particular, we find significantly fewer collembolans or springtails in our field, so the neonicotinoids and the pyrethroids in this case are limiting of pyrethrum.

0:42:33.920 --> 0:42:40.310

Tooker, John

Sorry, are limiting springtail populations and they're not contributing as much as decomposition, so decomposition is slower.

0:42:43.490 --> 0:42:49.820

Tooker, John

We've also measured the influence of these seed coatings on soil aggregate stability.

0:42:49.870 --> 0:43:19.130

Tooker, John

Soil aggregate stability is an important measure of soil quality, so if you're a farmer you would far prefer to have high or higher soil aggregate stability than lower soil aggregate stability on the left is what's called a water test, where different types of soil are just suspended in water to see how quickly they break down a soil with high soil aggregate stability that has a lot of things kind of gluing and holding soil together will stay together in soil much much longer.

0:43:19.130 --> 0:43:23.570

Tooker, John

So that's what you see on the left in the a container versus the B container.

0:43:23.580 --> 0:43:25.130

Tooker, John

This is a no till soil on the right.

0:43:25.140 --> 0:43:32.310

Tooker, John

This is a tilled soil on the left, so no till is a way to achieve higher soil quality and a higher soil aggregate stability.

0:43:33.940 --> 0:43:39.370

Tooker, John

Our cover crops are a great way to help achieve higher soil aggregate stability, and that's what you can see in this figure.

0:43:39.500 --> 0:43:49.10

Tooker, John

This figure is from an experiment where we had an IPM treatment, a control treatment and then a preventative pest management treatment where we deployed neonicotinoid insecticides.

0:43:49.260 --> 0:43:51.810

Tooker, John

You can see where we have a cover crop, the Hatch bar.

0:43:51.820 --> 0:44:7.90

Tooker, John

We have significantly higher soil aggregate stability than when we weren't using a cover crop, but concerningly when we have our preventative test management treatment in the mix, we have significantly lower soil aggregate stability where we're using a cover crops.

0:44:7.200 --> 0:44:14.130

Tooker, John

So something about the insecticides in the field, the neonics in particular, is decreasing our soil aggregate stability.

0:44:15.40 --> 0:44:28.30

Tooker, John

Our evidence thus far suggests that it has again, had the story has a lot to do with Colombians, who are finding fewer collembolans in these preventative pest management plots, particularly where we have the cover crop.

0:44:28.40 --> 0:44:32.870

Tooker, John

We're not exactly sure why that is, but we're working on that to clarify the story.

0:44:34.540 --> 0:44:47.990

Tooker, John

So the bottom line for all these data I've just shared with you is that and and I share this with farmers, when I if I'm giving extension talks is I encourage farmers to manage for the past that you have and manage for your farming goals.

0:44:48.540 --> 0:44:53.30

Tooker, John

These preventative insecticides, particularly neonics, can make pest populations worse.

0:44:53.40 --> 0:44:57.10

Tooker, John

In Pennsylvania, again, most folks, a lot of no till farmers struggle with slugs.

0:44:57.100 --> 0:45:6.670

Tooker, John

If slugs are your biggest problem, then you're making that population worse by using insecticides, and then you're disrupting this natural function that includes pest control functions driven by these predators.

0:45:6.680 --> 0:45:12.160

Tooker, John

I've already discussed decomposition, soil, irrigation and those are the ones that only the ones we've measures.

0:45:12.170 --> 0:45:23.0

Tooker, John

I'm sure there are others out there that we haven't gotten around to measure, so to put a more positive spin on things, our research has also shown that no till makes conservation possible.

0:45:23.490 --> 0:47:4.930

Tooker, John

So if you if you're using no till you're gonna and IP you're going to have fewer paths kind of from the start. If you that's because these no till habitats provide great there's no till fields. Excuse me provide stability for beneficial organisms, particularly the Predators and those predators can help with pest control. If you can go to the next step and add cover crops on that. That's going to enhance these beneficial populations. Even further and better contribute to pest control and what an effect. You're doing is growing a small simple food web in your fields where animals are eating animals. But those beneficial animals are protecting crops from from the pest species and just provide one example of this, I've been working on this project since 2010. It's called the Penn State diversified dairy cropping systems project in this project we have 2 types of rotation. We have a simple corn, soybean rotation and we're comparing that to 260 rotations where we're trying to grow all the food fuel and fibre that your average dairy farm needs to be sustainable from an insect management perspective we're using very different approaches in the 2 year. Corn soybean rotation. We're using BT corn and and we're using seed coatings on that PT core and our soybeans. We're also using the seed mornings and then shortly after planting. We're deploying a pyrethroid like many farmers in Pennsylvania do in comparison in the 6 year rotations

were using I PM so my students and I we scout, these fields on every 7 to 10 days. We measure pest populations.

0:47:4.940 --> 0:47:16.70

Tooker, John

If they're present and we compare those populations to economic threshold and we treat as necessary, so there's no BT in the corn that we're using in the system, we're not using seed coatings on the corner of the soybeans.

0:47:16.200 --> 0:47:39.760

Tooker, John

And again, all insecticide that we deploy are being governed by I PM and without getting too bogged down and all the details because I only have a limited amount of time here and I've already eaten up some of it by having a malfunction, the pest populations have been worse where we're using the preventative pest management approach and that did detail is supported by these data here.

0:47:40.570 --> 0:47:58.780

Tooker, John

So on the vertical axis here we have slug predators per trap per day across the two types of treatments, the high input treatment, which is the simplified corn, soybean treatment, and the low input treatment, which is the longer more diversified rotations and the panel show the first six year of this project.

0:47:58.790 --> 0:48:2.840

Tooker, John

So you're one year, two year, three, year four, year five and year six.

0:48:3.790 --> 0:48:21.70

Tooker, John

And for the first three years of the project, you can see the amount of predators in the two types of rotations was equal, but in year 4-5 and six and now onward, we see that there's significantly more predators in that low input rotation where we're using I PM.

0:48:21.900 --> 0:48:25.170

Tooker, John

Uh, these this pattern continues to today.

0:48:25.280 --> 0:48:36.630

Tooker, John

I just need to get off my **** and write up the next paper and it results in this important relationship here so slugged the most significant test in this system on the vertical axis.

0:48:36.640 --> 0:48:43.380

Tooker, John

Here I'm showing you slug damage in terms of proportion of plants that have damage and that's on the vertical axis.

0:48:43.390 --> 0:48:57.530

Tooker, John

The horizontal axis is early season predators in terms of number of predators per trap per day, and you can see as the predators go up the amount of slug damage comes down so much so that when I a lot of predators are getting virtually no damage.

0:48:58.660 --> 0:48:59.740

Tooker, John
Uh to those plants.

0:48:59.920 --> 0:49:6.230

Tooker, John
So a farmers farm in a certain way and use I PM avoid these unnecessary preventative insecticides.

0:49:6.620 --> 0:49:10.190

Tooker, John
You can grow your predator populations and they'll be your allies in pest control.

0:49:12.50 --> 0:49:20.140

Tooker, John
So I work closely with a group in Pennsylvania called the Pennsylvania no till alliance and have kind of sold these guys on the idea of I PM.

0:49:20.810 --> 0:49:40.280

Tooker, John
So in addition to soil health, which they're all farming for, which involves no till diverse rotations of the cover crop they've added I PM and it's kind of central to their ethos and this is the board members a few years ago and working closely with these guys, they've really bought in and a lot of them are using uncoated seeds entirely.

0:49:40.810 --> 0:49:50.250

Tooker, John
It's difficult for some of them define uncoated seeds in the genetics they want, so they have perhaps only use the insecticide in the corn portion of their diverse rotation.

0:49:50.760 --> 0:49:56.340

Tooker, John
But most of them are doing everything they can to get away from the seed coatings, and then they turn into advocates.

0:49:56.350 --> 0:50:16.320

Tooker, John
So when I have a field day, I'll usually invite one of these gentlemen along because they can talk kind of more authentically as a farmer next to a field where we've done what I'm talking about and it really provides a nice kind of echoing of the message and kind of a reinforcing of the message that farmers, we'll do this and then advocate for it.

0:50:16.330 --> 0:50:18.150

Tooker, John
This this gentleman is named Lucas Chriswell.

0:50:18.160 --> 0:50:22.690

Tooker, John

I've been, I believe he's been to Vermont to discuss his farming successes.

0:50:23.800 --> 0:50:25.80

Tooker, John

OK, so I went too long.

0:50:25.90 --> 0:50:26.310

Tooker, John

I'm sorry about that.

0:50:27.840 --> 0:50:28.440

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You're fine.

0:50:28.450 --> 0:50:28.820

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

You're OK.

0:50:26.560 --> 0:50:34.880

Tooker, John

Morgan just finished with a OK just finished with the same starting messages that I that was on my second slide.

0:50:34.890 --> 0:50:36.940

Tooker, John

So I PM is the paradigm for pest control.

0:50:36.950 --> 0:50:45.920

Tooker, John

It focuses on pests that are economically concerning, much of current insecticide use is insurance base, particularly in field crops, most notably for corn.

0:50:46.710 --> 0:50:55.400

Tooker, John

Neonicotinoid use is rarely risk based, is preventative and often forced by the industry because there's a limited amount of uncoated seed out there.

0:50:55.410 --> 0:51:1.10

Tooker, John

So a lot of times farmers are forced to use treated seed even though they may not want it needed or even know they're using it.

0:51:2.0 --> 0:51:7.790

Tooker, John

The neonicotinoids can disrupt many neurological functions with techspan and for slugs they can exacerbate pests.

0:51:7.800 --> 0:51:18.560

Tooker, John

And that's problematic for Pennsylvania because that's our most significant pest in no till acreage as a positive no till and cover crops provide a nice base for conservation farming and for IPM.

0:51:18.570 --> 0:51:31.560

Tooker, John

So a farmers will adopt us and part by getting away from neonics and other insecticides they can have, they can have success growing predator populations and those predator populations will then help with pest control.

0:51:32.50 --> 0:51:35.60

Tooker, John

And then our experience is prevented to farmers like those in the Pennsylvania.

0:51:35.70 --> 0:51:44.40

Tooker, John

No chill lines will embrace IPM if someone shows them the benefits, but part of the challenge is that if it's only one extension guy showing the benefits, it's hard for them to see.

0:51:45.70 --> 0:51:46.740

Tooker, John

OK, I'll shut up.

0:51:46.750 --> 0:51:49.430

Tooker, John

So you guys can ask a question and then we can move on with your agent.

0:51:51.930 --> 0:51:53.760

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But had the yeah.

0:51:54.690 --> 0:51:55.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

0:51:55.280 --> 0:51:55.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank.

0:51:55.570 --> 0:51:57.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you very much for that.

0:51:57.570 --> 0:52:2.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Just have a one of the items information.

0:52:2.370 --> 0:52:4.800

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I guess the board has heard a couple of Times Now.

0:52:5.310 --> 0:52:20.780

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Is the difficulty in scouting for determining, you know, economic threshold levels for certain pests that we're concerned about, like the seed corn maggot and wireworms, do you scout for those passing?

0:52:20.790 --> 0:52:23.90

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

If so, how do you do it, and what thresholds do you use?

0:52:24.390 --> 0:52:25.860

Tooker, John

Yes, good question.

0:52:26.30 --> 0:52:26.810

Tooker, John

We do.

0:52:27.970 --> 0:52:29.510

Tooker, John

We don't scout for them routinely.

0:52:31.890 --> 0:52:43.440

Tooker, John

I have done projects kind of in fields across Pennsylvania looking for why are worms and seed corn maggot and one particular experiment I did over 2 years.

0:52:43.450 --> 0:52:57.820

Tooker, John

I scouted 8 fields in three counties, so that's 24 fields over two years and these are no till fields with cover crops and I found one wire worm for my effort.

0:52:59.400 --> 0:53:13.830

Tooker, John

Seedcorn maggot is more of a pest of tilled fields, particularly where you incorporate Umm, got the cover crop, show some type of green material, you push underground and that's not something we do.

0:53:13.840 --> 0:53:25.760

Tooker, John

So we have enough information to know where those types of tests tend to be problematic, and those tests don't tend to be problematic and no till cover crops systems in Pennsylvania.

0:53:26.620 --> 0:53:33.620

Tooker, John

So and if we saw kind of pest damage that we didn't know what it was.

0:53:33.750 --> 0:53:40.550

Tooker, John

Yeah, we would dig around and we would look and we would do an assessment to see if wire worm or seed corn maggot was the cause.

0:53:41.430 --> 0:53:44.400

Tooker, John

But in our let's see here.

0:53:44.410 --> 0:53:45.370

Tooker, John

This is 2020.

0:53:45.380 --> 0:53:57.410

Tooker, John

If you're 13 years of running this diversified dairy cropping systems project, which is on a 12 acre field in central PA Umm or 12 acre spot of land, we have yet to see that problem.

0:53:58.290 --> 0:54:10.420

Tooker, John

So my in my experience there are not a primary concern and by most people's definitions those two pest species are secondary tests, which means they are of secondary concern.

0:54:11.360 --> 0:54:20.410

Tooker, John

Umm, I know there are competing data from, say, New York State that show that there are more concerning from my colleague Elson Shields.

0:54:20.420 --> 0:54:21.360

Tooker, John

I have never seen that.

0:54:25.150 --> 0:54:25.500

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

What?

0:54:25.550 --> 0:54:27.690

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So sorry, don't follow up question, I guess.

0:54:29.70 --> 0:54:32.860

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So in the I PM program, they're using in your diversified program.

0:54:32.870 --> 0:54:33.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

What?

0:54:33.90 --> 0:54:33.320

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Tests.

0:54:33.330 --> 0:54:35.920

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Are you scouting for? Yeah.

0:54:35.930 --> 0:54:36.550

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

What are you looking for?

0:54:35.980 --> 0:54:45.310

Tooker, John

Well, so we are the main ones that are problematic around us and corn and soybeans are black cutworm and true army worm.

0:54:46.120 --> 0:54:48.220

Tooker, John

But then slugs, so those are the three big ones.

0:54:49.60 --> 0:54:49.640

Tooker, John

Umm.

0:54:49.790 --> 0:54:56.550

Tooker, John

If, again, if we were to see wilting plants, that would be suggestive of wireworms, we would get in there and and dig around.

0:54:56.560 --> 0:54:57.740

Tooker, John

But again, we've never seen that.

0:54:57.750 --> 0:55:3.880

Tooker, John

So if you don't have some evidence that a pest is causing challenges, there's no reason to scout for it.

0:55:3.890 --> 0:55:14.660

Tooker, John

In my experience and then in soybeans, it's primarily a suite of generalist defoliators things like Japanese beetles being leaf beetles.

0:55:15.220 --> 0:55:17.700

Tooker, John

Umm, some of the Caterpillar species.

0:55:18.200 --> 0:55:24.700

Tooker, John

Ah, and that's so we're we're sweeping for kind of screening for that kind of suite of tests.

0:55:27.200 --> 0:55:28.770

Tooker, John

They satisfy your curiosity, Sir.

0:55:29.460 --> 0:55:29.970

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yes, Sir.

0:55:29.980 --> 0:55:30.250

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

0:55:30.590 --> 0:55:31.110

Tooker, John

You're welcome.

0:55:33.500 --> 0:55:37.770

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I have another question, but I wanted to see if anybody else had one before I changed.

0:55:38.600 --> 0:55:39.190

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Go ahead, Matt.

0:55:39.200 --> 0:55:55.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Have one I'm do you know for your control plots, especially with the the yield difference for your control plots on land that had never seen neonet treated seeds before.

0:55:55.480 --> 0:55:58.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

You know, because of the persistence of the neonet and everything.

0:55:59.90 --> 0:56:0.460

Tooker, John

Yep, that's that's a great question.

0:56:0.470 --> 0:56:0.700

Tooker, John

Yep.

0:56:0.710 --> 0:56:7.990

Tooker, John

So our farm manager is very well attuned to kind of the legacy effects of insecticide use.

0:56:9.40 --> 0:56:16.860

Tooker, John

So the insecticides are kind of very poorly used on our on our entomology form.

0:56:16.870 --> 0:56:19.300

Tooker, John

So we don't use the peptides unless we need them.

0:56:20.920 --> 0:56:25.560

Tooker, John

So those experiments were done in fields that did not have a legacy of insecticide use.

0:56:26.900 --> 0:56:40.380

Tooker, John

And just between you guys and me, when when I need to use an insecticide and experiment, I go to an adjacent farm, say the agronomy farm or the plant pathology farm or something like that, where where that type of use is more routine.

0:56:40.390 --> 0:56:42.900

Tooker, John

We we'd like to keep our our entomology field.

0:56:42.910 --> 0:56:43.910

Tooker, John

As for Stine as possible.

0:56:48.770 --> 0:56:49.630

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank thanks.

0:56:48.420 --> 0:56:49.750

Tooker, John

Don't tell my colleagues that, though.

0:56:53.720 --> 0:57:15.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

My question is one that kind of stemmed from a conversation with Heather Darby last week, John, and we're toying with the idea around here because we've been hearing a lot about Dust released when planting being a major route of exposure.

0:57:16.670 --> 0:57:18.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Especially the pollinators.

0:57:18.490 --> 0:57:27.980

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And so we've heard some things about modifying planters and to at least direct the dust.

0:57:27.990 --> 0:57:38.270

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So it doesn't just fly out undirected right where it can contact pollinator forages or pollinators themselves?

0:57:39.140 --> 0:57:47.450

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm, but in basically the most practical way to direct that dust is to direct it down straight to the ground.

0:57:47.740 --> 0:58:2.960

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I wondered if you could speak to your reaction to that or your advice of of kind of what you think might happen if that dust is directed down to the ground versus undirected at all and.

0:58:4.470 --> 0:58:4.980

Tooker, John

Right.

0:58:5.370 --> 0:58:7.140

Tooker, John

And can you see this figure, Morgan?

0:58:7.650 --> 0:58:8.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yes.

0:58:8.360 --> 0:58:8.830

Tooker, John

Yeah.

0:58:8.870 --> 0:58:11.290

Tooker, John

Yeah, so this figure accounts for that dust.

0:58:11.580 --> 0:58:15.290

Tooker, John

So 2 to 3% of the dust of the neonics kind of leave this dust.

0:58:16.790 --> 0:58:24.700

Tooker, John

Umm yeah, and I understand the inclination to put it on the ground because of pollinators and pollinators are kind of charismatic.

0:58:25.290 --> 0:58:37.500

Tooker, John

Animals have gotten a lot of attention, but by our research, the animals on the ground are are probably except for spiders, are going to suffer just as much as those pollinators might.

0:58:37.510 --> 0:58:47.80

Tooker, John

If it's going undirected, so I would not be a fan of pushing the insecticide toward the ground because that is where your ground beetles live.

0:58:47.90 --> 0:59:1.180

Tooker, John

And if your ground beetles and Rove beetles and soldier soldier beetle larvae and Firefly larvae, if those things are providing a nice benefit for pest control, all you're doing is making their life more difficult by putting that insecticide toward the ground.

0:59:1.800 --> 0:59:19.170

Tooker, John

Umm, I'm not a agricultural equipment engineer as you might get I'm guess, but I would far prefer an alternative solution, whether it is to capture that stuff, try to figure out a way to umm have the planter not vent this much.

0:59:21.800 --> 0:59:31.530

Tooker, John

It is the case in Pennsylvania that the the percentage of farmers that have these newer type of planets that move seed around with air is increasing.

0:59:31.880 --> 0:59:47.150

Tooker, John

You'll probably see that if you're not seeing it already in Vermont, and I find it super frustrating that these kind of the old school planters, they do a great job planting a seed without this challenge.

0:59:47.160 --> 0:59:52.500

Tooker, John

So people assume they're, I don't know, improving things with technology, but this is a step backwards.

0:59:52.510 --> 0:59:54.290

Tooker, John

If you're gonna put the insecticide down the ground.

0:59:58.560 --> 0:59:59.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thanks.

1:0:1.150 --> 1:0:1.880

Tooker, John

Sure, no problem.

1:0:3.40 --> 1:0:3.900

Tooker, John

Anything more today?

1:0:7.470 --> 1:0:8.340

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And we'll get this.

1:0:8.690 --> 1:0:12.790

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I think we're good as anybody else on the line has a question for John.

1:0:16.90 --> 1:0:19.220

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright, thank you very much, John.

1:0:19.230 --> 1:0:20.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We really appreciated it.

1:0:20.550 --> 1:0:20.800

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yep.

1:0:20.810 --> 1:0:21.110

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

1:0:21.520 --> 1:0:22.160

Tooker, John

You're welcome.

1:0:22.170 --> 1:0:29.140

Tooker, John

I'll I'll probably stick around for a little bit, but I'll have to go eventually and I apologize for that malfunction.

1:0:29.200 --> 1:0:30.650

Tooker, John

Yeah, wish I could explain it.

1:0:31.950 --> 1:0:33.90

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

No worries, we did it.

1:0:33.940 --> 1:0:34.160

Tooker, John

Yep.

1:0:33.100 --> 1:0:34.820

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We're we're perfectly on time.

1:0:34.830 --> 1:0:35.270
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We're fine.

1:0:35.750 --> 1:0:37.780
Tooker, John
OK. Thanks.

1:0:38.230 --> 1:0:38.520
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

1:0:38.530 --> 1:0:38.890
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thank you.

1:0:41.400 --> 1:0:43.410
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Alright, we are on to.

1:0:44.720 --> 1:0:45.210
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Lewis.

1:0:51.280 --> 1:0:58.100
Louis Robert (Invité)
Yeah, if it's possible to share my screen.

1:0:58.910 --> 1:1:1.260
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
It's yeah, it should be.

1:1:1.270 --> 1:1:5.320
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
There's like a square right next to the leave button in the upper right.

1:1:6.920 --> 1:1:11.80
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Please share says share with a white box with an arrow pointing up.

1:1:10.860 --> 1:1:12.480
Louis Robert (Invité)
Yeah, got it.

1:1:20.730 --> 1:1:22.650
Louis Robert (Invité)
Can you see the first slide?

1:1:25.510 --> 1:1:26.170

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Not yet.

1:1:38.940 --> 1:1:40.130

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
You have to make him a host.

1:1:40.900 --> 1:1:43.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Should be able to share on the screen.

1:1:43.370 --> 1:1:44.810

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
They'll be a whole bunch of different things.

1:1:44.820 --> 1:1:45.620

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We have to pick the right.

1:1:46.240 --> 1:1:47.890

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, it's complicated.

1:1:49.510 --> 1:1:50.210

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Be on my paper.

1:1:55.600 --> 1:1:56.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Training.

1:1:57.400 --> 1:1:58.130

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We never yet.

1:2:0.530 --> 1:2:1.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Maybe you can email it to you.

1:2:4.20 --> 1:2:4.410

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Umm.

1:2:8.930 --> 1:2:12.200

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Listen alternative is if you can email it to me and I can.

1:2:14.400 --> 1:2:15.700

Louis Robert (Invité)

Uh, I think it's working now.

1:2:16.670 --> 1:2:16.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK.

1:2:34.250 --> 1:2:34.960

Louis Robert (Invité)

Do you see it now?

1:2:36.590 --> 1:2:37.100

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We don't.

1:2:39.220 --> 1:2:39.740

Louis Robert (Invité)

I'm sorry.

1:2:46.970 --> 1:2:47.620

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That's OK.

1:2:47.660 --> 1:2:49.490

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So Monday all around for all of us.

1:2:49.500 --> 1:2:51.150

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So we get it, don't worry.

1:3:5.550 --> 1:3:7.340

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, I can see your screen now.

1:3:9.410 --> 1:3:13.740

Louis Robert (Invité)

OK, now about that.

1:3:14.70 --> 1:3:14.810

Louis Robert (Invité)

You see it? No.

1:3:16.890 --> 1:3:17.940

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

What did Gmail?

1:3:17.950 --> 1:3:18.180

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

1:3:18.190 --> 1:3:19.110

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
What we see is your Gmail.

1:3:29.550 --> 1:3:30.940

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Close everything, but you're it.

1:3:31.730 --> 1:3:32.500

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, close everything.

1:3:32.540 --> 1:3:32.720

Louis Robert (Invité)
Yeah.

1:3:32.510 --> 1:3:33.370

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
But the person, right?

1:3:55.560 --> 1:3:55.920

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Frozen.

1:3:58.710 --> 1:3:59.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
That's today.

1:4:16.680 --> 1:4:17.200

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Are you back?

1:4:19.800 --> 1:4:22.670

Louis Robert (Invité)
I clicked on the wrong button, but again it's not working.

1:4:22.680 --> 1:4:23.870

Louis Robert (Invité)
I I'm worried.

1:4:25.620 --> 1:4:26.380

Louis Robert (Invité)
Sorry about that.

1:4:30.280 --> 1:4:31.500

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Don't have my email it to you?

1:4:33.20 --> 1:4:34.390

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, just gonna email it.

1:4:35.610 --> 1:4:35.790

Louis Robert (Invité)
Yeah.

1:5:52.880 --> 1:5:53.820

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
You don't see it yet.

1:5:55.590 --> 1:5:56.750

Louis Robert (Invité)
I just sent it to you.

1:6:7.130 --> 1:6:7.400

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
And.

1:6:11.830 --> 1:6:13.100

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
He needs to share.

1:6:16.160 --> 1:6:16.460

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Because.

1:6:22.150 --> 1:6:22.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

1:6:22.370 --> 1:6:22.690

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
There you go.

1:6:23.780 --> 1:6:25.130

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Ohh but I can't OHP.

1:6:27.460 --> 1:6:27.650

Louis Robert (Invité)
Yeah.

1:6:28.680 --> 1:6:29.260

Louis Robert (Invité)

OK.

1:6:29.240 --> 1:6:31.130

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I can you see it that.

1:6:29.270 --> 1:6:31.360

Louis Robert (Invité)

It's it's, I mean it.

1:6:34.860 --> 1:6:40.190

Louis Robert (Invité)

Alright, so that's how we will try to work it.

1:6:43.50 --> 1:6:43.510

Louis Robert (Invité)

Yeah.

1:6:43.620 --> 1:6:45.390

Louis Robert (Invité)

OK, let's get started then.

1:6:45.770 --> 1:6:49.900

Louis Robert (Invité)

Just the first warning I'm not.

1:6:49.910 --> 1:7:15.680

Louis Robert (Invité)

I'm not speaking, of course, in on behalf of the Government of Quebec, nor for the Ministry of Agriculture, but I've I've worked, I've been with the Department of Agriculture here in Quebec for 35 years until last year, so if we can move on to the next slide, please some background information.

1:7:15.990 --> 1:7:17.190

Louis Robert (Invité)

I have no control on that.

1:7:17.200 --> 1:7:18.800

Louis Robert (Invité)

You can can roll down the.

1:7:19.210 --> 1:7:36.920

Louis Robert (Invité)

Yeah, in, for those of you who are not familiar, Quebec is we grow around 1,000,000 acres of each of corn and soybeans, 600,000 acres in small grains, oats, barley, wheat, of course and much more in in feed crops and vegetable crops.

1:7:37.510 --> 1:8:10.430

Louis Robert (Invité)

The total pesticide used every year runs around that 5 tons of active ingredients per year, 74% in the agricultural sector, and in 1992, the Ministry of our Culture, for which I was, uh, employed together with the Ministry of Environment and the Farmers Union, agreed upon a plan aiming at the reduction of 50% of the amount of pesticides used by 2000.

1:8:11.380 --> 1:8:14.80

Louis Robert (Invité)

But the plan finally was a failure.

1:8:14.90 --> 1:8:16.850

Louis Robert (Invité)

It had no effect, and then it was resurrected.

1:8:16.920 --> 1:8:26.50

Louis Robert (Invité)

At least two other instances in 2011 and again in 2020, each time with more humble objectives.

1:8:26.60 --> 1:8:32.850

Louis Robert (Invité)

But again, it right now it effect whatsoever on the on the sales report of pesticides in Quebec.

1:8:36.250 --> 1:8:43.400

Louis Robert (Invité)

The conclusion of all that is that incentives and extension don't work very efficiently.

1:8:43.490 --> 1:8:55.590

Louis Robert (Invité)

If you were to reduce the amount of pesticide used, but really no one stopped and wondered why it didn't work next one, please.

1:8:56.300 --> 1:8:57.210

Louis Robert (Invité)

This is the uh.

1:8:57.220 --> 1:9:21.600

Louis Robert (Invité)

Taken from the official sales report of the Department of Environment in Quebec that with the latest year being 2021 for all sectors and uh combined and you can see there's no, no, no, no trend whatsoever of of a drop or decrease in the amount of better side sales sold in Quebec.

1:9:23.340 --> 1:9:36.790

Louis Robert (Invité)

And if I add the the the next click you all have the the years where when plans to reduce pesticides were being implemented.

1:9:37.800 --> 1:9:59.600

Louis Robert (Invité)

Again, it's obvious that no effect that any of these instances next slide now for the acceptor, the farming sector, you can see that the solid line shows the amount of pesticides sold in the farming sector for the same period.

1:10:0.550 --> 1:10:15.640

Louis Robert (Invité)

And the histograms showed the amount of life estate being sold and you can see that diphosphate is represent approximately 4850% of all pesticides being used in Quebec.

1:10:15.990 --> 1:10:16.780

Louis Robert (Invité)

Next one please.

1:10:18.30 --> 1:10:19.260

Louis Robert (Invité)

Yeah, that's it.

1:10:19.380 --> 1:10:22.740

Louis Robert (Invité)

Half of all pesticides being glyphosate.

1:10:23.610 --> 1:10:47.110

Louis Robert (Invité)

Next one in the meantime, uh monitoring by the Ministry of Environment reported that pesticides were detected in most, if not all, streams and in increasing concentrations, especially neonates and scientific evidence of the toxicity built stronger over the years.

1:10:47.160 --> 1:11:4.80

Louis Robert (Invité)

For example, or French researcher by the name of Jean Marie Bumatay reported that the toxicity of neonics for honeybee was that was approximately, well, not approximately, but precisely 5400 to 7300 times that of DDT.

1:11:6.760 --> 1:11:26.50

Louis Robert (Invité)

And in the meantime, the public concern grew stronger for environmental issue, but also public health issues and some illness are being related, officially recognized as worked, illnesses related to the exposition to pesticides.

1:11:26.60 --> 1:11:28.370

Louis Robert (Invité)

Now, for example, Parkinson's disease.

1:11:31.330 --> 1:11:37.620

Louis Robert (Invité)

Public funded research showed no benefit to farmers from the use of insecticide coated seed.

1:11:37.950 --> 1:11:42.900

Louis Robert (Invité)

In 8484, field crops trials and that was published.

1:11:42.910 --> 1:11:48.760

Louis Robert (Invité)

Finally, published three years after the work was completed, it was published in 2020.

1:11:49.550 --> 1:11:55.80

Louis Robert (Invité)

I reminded notice here that it's not only neonics, but all insecticide.

1:11:56.860 --> 1:12:7.250

Louis Robert (Invité)

Next, by the way you, I'm pretty sure we'll have some time for questions after I finish my talk because I don't have too many slides.

1:12:7.260 --> 1:12:35.400

Louis Robert (Invité)

Finally, I am so in the in in the late twenty 10s, starting 2015, 2016, the Department of Environment started to let no to everybody that they of the intent of uh reducing by the adoption of bylaws by passing bylaws at the National Assembly that they wanted to reduce the use of uh pesticide using legislation.

1:12:36.530 --> 1:12:49.470

Louis Robert (Invité)

So they recognize 5 iris molecules or pesticides that presented iris for either or both health and and the environment.

1:12:49.540 --> 1:12:59.350

Louis Robert (Invité)

Those pesticides were advising globally first and the three no Nicks that you see in the table for those pesticide.

1:12:59.360 --> 1:13:8.40

Louis Robert (Invité)

If a farmer would work to to use them, he was required to produce a recommendation by registered agronomists.

1:13:8.50 --> 1:13:14.120

Louis Robert (Invité)

There are approximately 2300 registered agronomists in Quebec.

1:13:14.260 --> 1:13:24.20

Louis Robert (Invité)

Maybe 1000 of them would be, yeah, competent or after your capacity to write such a recommendations, but they were very few of them.

1:13:24.30 --> 1:13:31.200

Louis Robert (Invité)

I can tell you that starting in the bylaw went into effect in the spring of 2019.

1:13:32.920 --> 1:13:51.730

Louis Robert (Invité)

On the table you can see that it had a very strong effect in terms of reduction since 2015 of the different pesticide atrazine, 90% reduction globally for 66% and the neonics were pretty much vanished from the.

1:13:52.800 --> 1:14:1.430

Louis Robert (Invité)

I'm from the use in in in, in in the fields in in 2015, pretty much all conflated and Quebec.

1:14:1.480 --> 1:14:16.290

Louis Robert (Invité)

Or was treated with neonics and 50 approximately 50% of the soybeans were treated with the new Anik and in 2021, according to the Department of Environment, it was less than zero.

1:14:16.300 --> 1:14:24.510

Louis Robert (Invité)

We got the .5% of all corn and soybeans acreage that was treated with now in the UK.

1:14:25.920 --> 1:14:28.380

Louis Robert (Invité)

Next what?

1:14:28.430 --> 1:14:30.410

Louis Robert (Invité)

Add this bylaw.

1:14:32.70 --> 1:14:36.100

Louis Robert (Invité)

What impacts at this value on the on the crops and the farmers?

1:14:36.110 --> 1:14:42.930

Louis Robert (Invité)

That is the question that comes up very often, well after a few years of now.

1:14:42.940 --> 1:14:43.990

Louis Robert (Invité)

Four years?

1:14:44.0 --> 1:14:44.630

Louis Robert (Invité)

Yeah.

1:14:44.860 --> 1:14:46.770

Louis Robert (Invité)

Four springs we can.

1:14:46.840 --> 1:14:58.870

Louis Robert (Invité)

We can say with confidence that we reported no crop failures to speak of but and no impact on yield either, although some cases were brought up.

1:14:58.880 --> 1:15:10.180

Louis Robert (Invité)

But after a close look and distillation by the agronomist, there were no cases of damages to ceiling stand population or yield that could be traced back to the absence of.

1:15:11.730 --> 1:15:26.330

Louis Robert (Invité)

Neonics, most of the reduction in and there were only a few cases that reduction of the stand, the population of plants per acre could have been due to to equipment malfunction or.

1:15:27.570 --> 1:15:33.670

Louis Robert (Invité)

Uh adjustment at sitting debt that was not proper for the for the spring, so on and so forth.

1:15:33.770 --> 1:15:52.140

Louis Robert (Invité)

Regular things that happen every spring, really, but some cases were investigated and it could not be traced back to to the new unit and and now a rapidly growing number of farmers are using insecticide free, not just a new unit.

1:15:52.150 --> 1:15:56.580

Louis Robert (Invité)

But no insecticide at all at seeding.

1:15:56.730 --> 1:16:0.510

Louis Robert (Invité)

And again, no negative impacts are reported so far.

1:16:5.10 --> 1:16:15.710

Louis Robert (Invité)

It's said that the mind you, I I can't present any official statistics on that because they those figures come from.

1:16:16.580 --> 1:16:18.300

Louis Robert (Invité)

Uh. Unofficial.

1:16:18.850 --> 1:16:21.620

Louis Robert (Invité)

Uh, God.

1:16:21.980 --> 1:16:42.800

Louis Robert (Invité)

Inquiries with with the C dealers, but I the comments that I hear is that in the spring of 2023 there were

between 20 and 30% of the seeds says that were without insecticides in Quebec and one seed Rep said that as much as 35% of his science were no longer using insecticides.

1:16:47.840 --> 1:16:48.450

Louis Robert (Invité)

OK.

1:16:48.460 --> 1:16:49.220

Louis Robert (Invité)

Is there another?

1:16:51.170 --> 1:16:51.390

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

There.

1:16:50.930 --> 1:16:51.480

Louis Robert (Invité)

Yeah.

1:16:51.590 --> 1:17:2.760

Louis Robert (Invité)

And the this huge rapid increase in in the use of insecticide free seed can be linked to three factors.

1:17:4.340 --> 1:17:7.650

Louis Robert (Invité)

Pressure coming from all around the public pressure.

1:17:7.660 --> 1:17:24.920

Louis Robert (Invité)

Also, evidence of new arm being done if you don't use insecticide and now they work being done by Genevieve library researcher at here in Quebec, she's carried now over over 1000 trials repeated with the scientific setup and.

1:17:26.120 --> 1:17:31.430

Louis Robert (Invité)

Statistical analysis done on each individual trial show that it it it.

1:17:31.640 --> 1:17:33.630

Louis Robert (Invité)

Yeah, it confirms.

1:17:33.640 --> 1:17:34.30

Louis Robert (Invité)

What?

1:17:34.40 --> 1:17:44.330

Louis Robert (Invité)

What she already showed with the network of 84 farms that I was telling you about earlier is that the bottom line is that there was no.

1:17:45.930 --> 1:18:8.40

Louis Robert (Invité)

Effect on yield from not using insecticide on the seat and also another obvious incentive or factor was that a grant of \$12.00 per acre or approximately \$20 per actor from the Crop Insurance Board for the customers not using insecticide.

1:18:8.270 --> 1:18:30.890

Louis Robert (Invité)

They're not all corn and soybean drawers are insured in Quebec, with the crop insurance support, but I would say the majority of them are and talking with the crop insurance officials that grounding mist and managers what were what they were telling me is that they don't, they don't see a, they don't see the need to pursue with that.

1:18:30.900 --> 1:18:37.590

Louis Robert (Invité)

So it would probably be left away dropped for the next season.

1:18:37.600 --> 1:18:40.70

Louis Robert (Invité)

They don't see the purpose of keeping that because.

1:18:40.620 --> 1:18:50.470

Louis Robert (Invité)

More and more farmers are jumping in the the the wagon, and they're not that no longer using insecticide, no matter if there's an incentive or not.

1:18:53.490 --> 1:19:3.760

Louis Robert (Invité)

Now the shortcomings or drawbacks we saw an instant switch to other insecticides as early as the first season and 2019.

1:19:4.430 --> 1:19:10.310

Louis Robert (Invité)

Moving from Neil next to Dynamites, despite evidence of the uselessness as well.

1:19:13.660 --> 1:19:20.290

Louis Robert (Invité)

And then very soon after diamonds were detected in most waterways of the corn growing areas of Quebec.

1:19:20.300 --> 1:19:22.850

Louis Robert (Invité)

And it was widely reported in the media too.

1:19:25.530 --> 1:19:35.540

Louis Robert (Invité)

The the Dynamites are proven to be less toxic to honey bees, but the they're much more toxic to butterflies and at aquatic life in general.

1:19:39.610 --> 1:19:52.880

Louis Robert (Invité)

And also we can already see that the global sales of pesticides kept up and with the loss of trust, public outcry from all around we can feel it.

1:19:53.70 --> 1:20:4.20

Louis Robert (Invité)

You know, it's probably the case in Vermont, but here in Quebec the first decisions related to these issues come up in the media pretty much every week now.

1:20:4.110 --> 1:20:24.830

Louis Robert (Invité)

So whereas in the 10 years ago we are the never, ever, I heard about this, deciding the general media, now it's common to read articles, the era to even and the television to have shows that deal with documentaries talking about the risk associated with pesticides.

1:20:25.20 --> 1:20:30.120

Louis Robert (Invité)

And we feel the public pressure much more than 10 years ago.

1:20:33.250 --> 1:20:46.460

Louis Robert (Invité)

Also, there are those already mentioned by Doctor Tucker that they are alternative methods, namely the integrated pest management best management features.

1:20:46.900 --> 1:20:50.510

Louis Robert (Invité)

For example, proposition, it is well known, but it's not very well.

1:20:50.810 --> 1:20:51.350

Louis Robert (Invité)

Uh.

1:20:52.50 --> 1:20:57.830

Louis Robert (Invité)

Diffuse or being communicated to the farmers and the widely overlooked really.

1:21:1.600 --> 1:21:31.920

Louis Robert (Invité)

And then the Ministry of Environment decided that it was a kind of a surprise, but given the success that the ad with the first wave of restrictions on neonics, then they decided to broaden the the the, the the best practice code and to require a verification of need exact same thing as with neonics but for all seed insecticides and fungicides to protect water and bees of course.

1:21:32.0 --> 1:21:50.720

Louis Robert (Invité)

But it was a huge move and everybody is anxious, mostly the reactions are positive, but it's gonna make bring about the major change in the in the in the story here and then yeah.

1:21:50.810 --> 1:22:2.490

Louis Robert (Invité)

But the the question is if that's my personal comment, if I may, I'll come we must turn to legislation, even when such toxic compounds show no benefit to farmers.

1:22:3.700 --> 1:22:6.310

Louis Robert (Invité)

I many for two reasons.

1:22:6.320 --> 1:22:19.950

Louis Robert (Invité)

I would say the industry and the farmers organizations interfered at the research level and also at the at the farm, the advisors level, and there are two few extension agronomist nowadays in Quebec.

1:22:20.800 --> 1:22:34.300

Louis Robert (Invité)

The very, very few agronomy staff paid by the public to do the extension work, trying to bring the research results at the farm level, that is a major.

1:22:34.910 --> 1:22:38.60

Louis Robert (Invité)

Uh lacked that.

1:22:38.70 --> 1:22:39.660

Louis Robert (Invité)

We have, you know, Quebec.

1:22:39.730 --> 1:22:49.970

Louis Robert (Invité)

So those are from my percent of my standpoint, those are the two major reasons why we have to turn to legislation.

1:22:49.980 --> 1:22:57.770

Louis Robert (Invité)

If, if, if and when when it doesn't make any sense to use them at the first place in the farm level, you know the farmers don't know.

1:22:57.780 --> 1:23:3.520

Louis Robert (Invité)

Farmer want to to to to, to damage, to do harm to the environment or to their own.

1:23:4.260 --> 1:23:38.210

Louis Robert (Invité)

Uh health, you know, so it's it's just a matter of having the information available at the farm level in the scientific information because it's been there for a while, as I said, since 1992, we we it's obvious that we knew already at that time that there's decide paused risk to the environment and the the health and now we know also that they don't offer in terms of insecticides anyway that they don't provide the much benefit benefit in the.

1:23:39.470 --> 1:23:43.820

Louis Robert (Invité)

Output the financial output of a farm operation.

1:23:43.830 --> 1:23:46.740

Louis Robert (Invité)

So we should just get rid of them each.

1:23:46.750 --> 1:23:54.20

Louis Robert (Invité)

We should have gotten rid of them earlier on, but you know, it's a matter of trust and confidence.

1:23:54.30 --> 1:24:1.250

Louis Robert (Invité)

And the, as I say, interference and also the to to fewer gromis being in the field out in the field.

1:24:4.390 --> 1:24:11.100

Louis Robert (Invité)

OK, so the bottom line is that legislation has limitations.

1:24:15.280 --> 1:24:41.870

Louis Robert (Invité)

The adoption of basic agronomic research results like IPA integrated pest management could bring about a short term reduction of more than 50% in the use of pesticides, at least in Quebec, because we we're talking about neonics and insecticides on the seed, but there are numerous examples, other examples of of pesticide that were proven to be useless for in other crops.

1:24:41.880 --> 1:24:58.800

Louis Robert (Invité)

In other context that we should bring that information to the farmers and they would they make the decision not to use those pesticides anymore unless there's some at least some scouting, you know that some damages done at the in the fields in field crops.

1:24:58.810 --> 1:25:14.330

Louis Robert (Invité)

Anyway, in Quebec, result from the fact that the farmers were using poor agronomic practices like a monoculture monoculture of the lack of rotation, bringing about a lot of problems.

1:25:15.360 --> 1:25:18.470

Louis Robert (Invité)

At one point or another in the in the process.

1:25:18.480 --> 1:25:24.710

Louis Robert (Invité)

So I it's it's also a matter of of implementing the right agronomic practices.

1:25:24.940 --> 1:25:28.720

Louis Robert (Invité)

To me, that's very important and we kind of forgotten about all that.

1:25:31.630 --> 1:25:39.60

Louis Robert (Invité)

But unless the extension system undergo major adjustments in Quebec, again, we will rely on legislation.

1:25:39.70 --> 1:25:46.320

Louis Robert (Invité)

It's unfortunate and I'm I'm sad to say that, but that's it seems to be the only way to go where in the short term anyway.

1:25:47.460 --> 1:25:51.350

Louis Robert (Invité)

They, as I say, I'm not very happy with that, but that's the way it is.

1:25:52.200 --> 1:25:58.20

Louis Robert (Invité)

Alright, now I I I think I have time for a few questions.

1:25:58.30 --> 1:25:58.500

Louis Robert (Invité)

If you have any.

1:26:3.760 --> 1:26:4.670

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Yeah, I'm just.

1:26:4.720 --> 1:26:8.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm gonna just stop sharing if that's right.

1:26:8.760 --> 1:26:11.440

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

This so I can see people again.

1:26:12.290 --> 1:26:12.800

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Any questions?

1:26:13.180 --> 1:26:13.440

Louis Robert (Invité)

What?

1:26:13.450 --> 1:26:14.810

Louis Robert (Invité)

What was this was the sound?

1:26:14.820 --> 1:26:16.210

Louis Robert (Invité)

I'm sorry, was the sound right?

1:26:16.260 --> 1:26:16.910

Louis Robert (Invité)

Did you?

1:26:17.440 --> 1:26:17.950

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

1:26:18.60 --> 1:26:18.690

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yes.

1:26:16.980 --> 1:26:19.60

Louis Robert (Invité)

You're well, OK.

1:26:18.700 --> 1:26:19.420

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, it was perfect.

1:26:22.890 --> 1:26:24.60

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I have a question.

1:26:22.950 --> 1:26:25.170

Louis Robert (Invité)

Alright, Yep.

1:26:24.110 --> 1:26:27.280

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Ohh somebody else was that you?

1:26:27.690 --> 1:26:40.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK, my question is in your, I guess I was wondering in your opinion, did the shift to using insecticide free?

1:26:43.430 --> 1:26:54.430

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Seeds come from like was it because it was too hard to get that the recommendation from a certified agronomist?

1:26:54.480 --> 1:26:59.60

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Or was it because they realized that it wasn't needed?

1:26:58.900 --> 1:26:59.80

Louis Robert (Invité)

Yeah.

1:26:59.70 --> 1:26:59.690

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

You know what I mean?

1:26:59.700 --> 1:27:7.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Like was it a the red tape of the requirement or because they realize they?

1:27:6.40 --> 1:27:16.290

Louis Robert (Invité)

Yeah, that that would be a very the case, the very true for for the switch from neonics to dynamites.

1:27:16.300 --> 1:27:29.100

Louis Robert (Invité)

You know, as soon as the first season after the the first spring, following the adoption of the pilot, all seed in Quebec seemed to be treated with dynamites all of a sudden, you know, it was kind of a miracle.

1:27:29.280 --> 1:27:39.990

Louis Robert (Invité)

But you know the the the seed companies that that the seen it coming because they were warned by the Department of Environment three or four years prior to that that it was coming.

1:27:40.160 --> 1:27:50.560

Louis Robert (Invité)

So it was very fast in in switching, but the move from Dynamize to no insecticide at all, that cannot be explained by the.

1:27:52.830 --> 1:27:56.850

Louis Robert (Invité)

By the by the bylaw, actually, you know it's a it's a.

1:27:58.70 --> 1:28:9.40

Louis Robert (Invité)

It's a result of a number of factor, mainly the, as I say, uh, we hear about the risk associated with pesticide and the honey bees declined.

1:28:9.50 --> 1:28:9.480

Louis Robert (Invité)

Collapse.

1:28:9.490 --> 1:28:15.910

Louis Robert (Invité)

You know the the the problems they had they have with the the honey production with the collapse of.

1:28:17.110 --> 1:28:19.40

Louis Robert (Invité)

Honey of honey bees.

1:28:19.110 --> 1:28:27.330

Louis Robert (Invité)

So it's very sensitive to the public and in turn, politicians are very sensitive to what the public is saying.

1:28:27.810 --> 1:28:51.210

Louis Robert (Invité)

Ohh it's it moved pretty much from there and you know if there's a sufficient amount of corn and soybean sea that are being used with new insight decided and everybody sees no damage, no yellow reduction whatsoever, then you know it's pretty much straightforward from then to not using them.

1:28:51.220 --> 1:28:53.470

Louis Robert (Invité)

So that's why the increase is so fast.

1:28:53.760 --> 1:29:9.260

Louis Robert (Invité)

And again, you know, if the see that the government is is ready to guarantee a \$30 per actor if you're not using insecticide, it means that it's probably no risk to say that you try to to go that route.

1:29:9.370 --> 1:29:20.470

Louis Robert (Invité)

So a number of factors have led to that, but we're not that 100% yet, you know, and I sometimes I try to imagine what.

1:29:21.510 --> 1:29:39.480

Louis Robert (Invité)

It could be if, if we had the more stronger Extension Service, because those scientific facts were available for some time now and it's very, very, as I say, straightforward.

1:29:39.710 --> 1:29:45.580

Louis Robert (Invité)

We we see across 84 side different sites on farms on commercial farms.

1:29:45.810 --> 1:29:53.300

Louis Robert (Invité)

We did not see anyone of them with a yield increase following the use of insecticide.

1:29:53.370 --> 1:30:1.540

Louis Robert (Invité)

So in in agronomic terms, if I look at my own experience having research results.

1:30:1.550 --> 1:30:24.300

Louis Robert (Invité)

So one sided it's it's very hard not to not to adapt that the practice of not using insecticide as I say to me it's just a matter of of confidence of crust and trying to get rid of the interference that's being put in at the Research Center in Quebec.

1:30:24.310 --> 1:30:25.580

Louis Robert (Invité)

That was the case.

1:30:25.690 --> 1:30:40.890

Louis Robert (Invité)

So and that's, you know, there's a I feel that today in Quebec at least that there's a just so big trend, a major trend of reducing the pesticide despite the fact that we saw again an increase.

1:30:41.0 --> 1:30:51.950

Louis Robert (Invité)

I said the pressure so strong now that there's no other way, but I'm afraid it might be too late for some of the damages that were done to the environment and public health.

1:30:52.10 --> 1:31:13.290

Louis Robert (Invité)

Also, does it increase in number of of people sick with the Parkinson now and other indices that could be related to the use of of pesticides he had the issue of glyphosate residues all over the planet.

1:31:13.350 --> 1:31:15.310

Louis Robert (Invité)

Is is is being.

1:31:16.590 --> 1:31:30.860

Louis Robert (Invité)

Known for to many more people now than it used to be, but that it has a huge impact on the public perception of uh agricultural practices.

1:31:31.350 --> 1:31:39.880

Louis Robert (Invité)

Farmers are being, uh are not very comfortable with all that, mind you, but others are just happy that it finally happens.

1:31:40.0 --> 1:31:43.440

Louis Robert (Invité)

And some farmers have never used insecticide.

1:31:43.530 --> 1:31:46.70

Louis Robert (Invité)

You know, so no one can say it.

1:31:46.80 --> 1:31:53.640

Louis Robert (Invité)

It's not feasible to do without insecticide because some have never used them and they're doing very well financially.

1:31:56.520 --> 1:31:59.520

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I think I think we have two more questions.

1:32:0.40 --> 1:32:1.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm, I'll go.

1:32:0.90 --> 1:32:1.600

Dwinell, Steve

Umm, so I'll go to.

1:32:1.610 --> 1:32:2.70

Dwinell, Steve

I'll go to.

1:32:2.80 --> 1:32:4.750

Dwinell, Steve

I'm going to go, you know, now the probably.

1:32:5.730 --> 1:32:6.230

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

You.

1:32:6.360 --> 1:32:6.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Sorry.

1:32:7.450 --> 1:32:11.100

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm about Steve 1st and then Claire sells go to you after Steve.

1:32:11.730 --> 1:32:11.960

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Sorry.

1:32:13.460 --> 1:32:13.670

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

1:32:13.680 --> 1:32:14.270

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

1:32:14.660 --> 1:32:24.390

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So you admit that I think the beginning of your talk, that there were, you know, like 3000 agronomists, certified agronomists working in Quebec, is that correct?

1:32:26.830 --> 1:32:27.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

1:32:25.760 --> 1:32:27.730

Louis Robert (Invité)

Right, 2300.

1:32:27.150 --> 1:32:31.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So what is the and then you made some comments about the extension.

1:32:31.600 --> 1:32:40.530

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm just wondering what the sort of standard recommendation is to to farmers and producing a corn crop.

1:32:40.540 --> 1:32:41.450

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Or is there a standard?

1:32:41.460 --> 1:32:47.440

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Or is there a big diversity in recommendations from agronomist on what to do about pest management in corn production?

1:32:50.800 --> 1:33:9.10

Louis Robert (Invité)

Yeah, well, I have to pitch in some background information in order for you to understand what's happened, because from other 3300 agronomists in Quebec, perhaps less than 200 are working for the public.

1:33:9.20 --> 1:33:18.730

Louis Robert (Invité)

I mean, they're the vast majority of agronomists nowadays in Quebec are paid by the private sector, are working for the private sector.

1:33:18.740 --> 1:33:21.720

Louis Robert (Invité)

Not all of them, of course, are working for the pesticide industry.

1:33:22.0 --> 1:33:27.570

Louis Robert (Invité)

But for those agronomists, some of them are working the animal sector.

1:33:27.980 --> 1:33:34.750

Louis Robert (Invité)

Some of them are working more in the nutritious nutrition aspect of the old chain.

1:33:35.60 --> 1:33:44.900

Louis Robert (Invité)

But as I said, approximately I would say, yeah, what 800 to 1000 agronomists are working their feet, crop sector.

1:33:45.880 --> 1:33:54.530

Louis Robert (Invité)

And so those those people would be would have the capacity to prepare a justification.

1:33:54.940 --> 1:33:59.510

Louis Robert (Invité)

Not all of them, but it was also shown very soon after the bylaw.

1:33:59.520 --> 1:34:20.380

Louis Robert (Invité)

I believe at the end of 2020, the Department of Environment issue the statistics whereby it was shown that it was proven that most justification or recommendation of pesticides were being done by agronomist, ironed by the pesticide industry.

1:34:20.810 --> 1:34:21.930

Louis Robert (Invité)

So it made sense.

1:34:21.940 --> 1:34:26.500

Louis Robert (Invité)

You know it, it was a confirmation that demonstration, that it there was a tie.

1:34:26.510 --> 1:34:36.550

Louis Robert (Invité)

There was a there was a link between the amount that the pesticide being used and recommended, and the uh and the involvement of the pesticide companies.

1:34:37.580 --> 1:34:47.230

Louis Robert (Invité)

That again is is a is a feature that helped turned table around and put some perspective on what's happened.

1:34:47.240 --> 1:34:48.990

Louis Robert (Invité)

What's happening in the fields of the farmers?

1:34:50.570 --> 1:34:51.90

Louis Robert (Invité)

Yeah, I'm.

1:34:50.500 --> 1:34:51.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

What about the extension?

1:34:51.100 --> 1:34:53.900

Louis Robert (Invité)

I'm not sure if I if I want to write to your question.

1:34:52.660 --> 1:35:7.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Well, I mean, yeah, you're getting there in terms of the Extension Service, is there a standard set of recommendations for for production from the Extension Service extension?

1:35:6.780 --> 1:35:9.900

Louis Robert (Invité)

I you know it it won't.

1:35:10.170 --> 1:35:17.200

Louis Robert (Invité)

They traditionally circulating was pretty much the way to go.

1:35:17.350 --> 1:35:22.500

Louis Robert (Invité)

We it was never put into question whether or not you should use a a sequel thing.

1:35:22.810 --> 1:35:27.660

Louis Robert (Invité)

It actually also you probably know that it comes with the seed.

1:35:27.670 --> 1:35:39.480

Louis Robert (Invité)

You have no choice unless you put your your order in time by early December and advise your seed retailer that you won't pass our insecticide free seed, then you won't have any.

1:35:39.890 --> 1:35:53.140

Louis Robert (Invité)

If you put your, if you are order your seed by early December by the 2nd week of December at the latest, you pretty much certain that you'll get to see that you you order no no problem with that, but it's not.

1:35:53.210 --> 1:35:57.200

Louis Robert (Invité)

It's never been a I I would have put it.

1:35:57.290 --> 1:35:59.260

Louis Robert (Invité)

It's never been an official recommendation.

1:35:59.740 --> 1:36:4.650

Louis Robert (Invité)

Well, most of the time it's it's, you know, it's just a it's just a way to go.

1:36:4.660 --> 1:36:16.720

Louis Robert (Invité)

It's just a way to to grow corn and they were a few exceptions where, for example, organic wars never used insecticide and they relied upon seed suppliers.

1:36:16.730 --> 1:36:30.60

Louis Robert (Invité)

That were specialized in providing hybrids and varieties with no pesticides on the seat that was in place already, but more and more farmers are conventional farmers, know non organic farmers.

1:36:30.490 --> 1:36:34.940

Louis Robert (Invité)

We're ordering seed that had to be that to be with.

1:36:34.950 --> 1:36:39.860

Louis Robert (Invité)

No insecticide and more and more using pesticide free seed.

1:36:40.70 --> 1:36:51.100

Louis Robert (Invité)

And as I said during my talk, it's going to be implemented by law in the in province of Quebec as early, I believe 2025 or 2026.

1:36:51.890 --> 1:36:57.250

Louis Robert (Invité)

There will be no more seed coated with any pesticide in Quebec.

1:36:58.760 --> 1:37:17.710

Louis Robert (Invité)

I'm happy about that, but at the same time it's just a a demonstration approve of failure from our part because we couldn't get the scientific evidence at the farm level and and I've, you know, I've farmers confidently use pesticide preceed.

1:37:17.840 --> 1:37:27.890

Louis Robert (Invité)

It's just unfortunate because it it never made sense actually, and in the meantime we've been used very broad damages to the environment.

1:37:31.0 --> 1:37:31.310

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

1:37:31.720 --> 1:37:32.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

1:37:33.460 --> 1:37:34.460

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I think I'm clear.

1:37:40.20 --> 1:37:40.570

Cutler, Clarice

Hi there.

1:37:40.580 --> 1:37:50.120

Cutler, Clarice

Yeah, I have a question about umm, untreated seed availability that maybe just kind of a general question or thought or maybe for you.

1:37:50.470 --> 1:38:1.530

Cutler, Clarice

But you know, I'm thinking about how we've heard from Heather Darby and Vermont farmers and Corteva that it's pretty difficult for farms in Vermont to get.

1:38:2.970 --> 1:38:24.580

Cutler, Clarice

Non treated seed or you know the certain genetic varieties that they want not treated and you you talked about this just a little bit just now, but it seems like in Canada, maybe Ontario and Quebec kind of have the right amount of the market share.

1:38:25.420 --> 1:38:29.50

Cutler, Clarice

Umm to you know, with this legislation demand.

1:38:32.530 --> 1:38:32.750

Louis Robert (Invité)

Yeah.

1:38:31.140 --> 1:38:37.810

Cutler, Clarice

You know different options for the farmers and I'm I'm wondering, you know, there's this new legislation in New York.

1:38:59.0 --> 1:38:59.380

Louis Robert (Invité)

Right.

1:38:37.820 --> 1:39:4.780

Cutler, Clarice

It's kind of heavily caveated, but maybe that will, you know, start to chip away at this and you know, allow folks to experiment with non treated seeds if they if they wanted to do you know the market share that Quebec and Ontario and Canada or are they different agrochemical companies or I don't know kind of rambling question.

1:39:7.130 --> 1:39:7.470

Louis Robert (Invité)

I'll try.

1:39:7.730 --> 1:39:17.210

Louis Robert (Invité)

To insert to the best I can, but I can tell you that there are more corn and soybeans in Quebec than in Vermont and more in Quebec than in New York, let's say.

1:39:17.520 --> 1:39:24.860

Louis Robert (Invité)

But about 110th of what you would find in a state like Minnesota or Iowa.

1:39:25.290 --> 1:39:29.640

Louis Robert (Invité)

So it's not a big market for seed companies, you know, but I was.

1:39:29.650 --> 1:39:41.30

Louis Robert (Invité)

I was perhaps I already said that, but I was kind of surprised to see with our how easily farmers could get the untreated seed that they ordered.

1:39:41.280 --> 1:39:56.80

Louis Robert (Invité)

You know, we we have spoken to another field agronomist and sales Rep and they've didn't encounter a huge amount of problems with the, you know with the.

1:39:57.250 --> 1:39:57.800

Louis Robert (Invité)

Yeah.

1:39:57.840 --> 1:40:11.260

Louis Robert (Invité)

The orders that were not placed orderly and it didn't, the farmer didn't get to see that the you ordered and it was very, very nice to see that we we didn't encounter so many problems.

1:40:11.270 --> 1:40:17.240

Louis Robert (Invité)

That was kind of surprised they, as I said, the companies were, you know, the expect that to happen.

1:40:17.590 --> 1:40:20.180

Louis Robert (Invité)

Uh, they they they know that's gonna.

1:40:20.190 --> 1:40:23.160

Louis Robert (Invité)

It's gonna go that that way for sure.

1:40:23.390 --> 1:40:39.510

Louis Robert (Invité)

And more, the Department of Agriculture in Quebec also add the dot like a we when I was at my pack, the Department of Agriculture, we used to publish every in the in the summertime a list of hybrids and serving varieties.

1:40:39.520 --> 1:40:43.960

Louis Robert (Invité)

That would be available in the untreated format untreated form.

1:40:43.970 --> 1:41:1.630

Louis Robert (Invité)

You know in advance prior to the seed order season, so it it kind of AT and and here after year we saw more and more hybrids and more and more varieties from more and more brands being available untreated.

1:41:1.730 --> 1:41:4.590

Louis Robert (Invité)

And that I think that at a lot.

1:41:6.970 --> 1:41:7.250

Cutler, Clarice

Thanks.

1:41:8.950 --> 1:41:13.260

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thanks for this and I think we're just coming up on our time.

1:41:13.270 --> 1:41:20.220

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So we just really appreciate you sharing your experiences in Quebec and your knowledge is with us on so.

1:41:20.270 --> 1:41:20.970

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you so much.

1:41:22.300 --> 1:41:22.720

Louis Robert (Invité)

Thank you.

1:41:26.50 --> 1:41:27.420

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

On Emily, you are up.

1:41:27.430 --> 1:41:31.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

If you want to share if you have anything to share, you can.

1:41:32.530 --> 1:41:32.840

Émilie Bergeron, CropLife Canada (Guest)

Umm.

1:41:31.710 --> 1:41:35.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

If it doesn't work out, you can feel free to email us as well the time.

1:41:36.820 --> 1:41:41.910

Émilie Bergeron, CropLife Canada (Guest)
OK, let me just try, I think, can you hear me well?

1:41:43.150 --> 1:41:43.670

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, yeah.

1:41:45.770 --> 1:41:47.220

Émilie Bergeron, CropLife Canada (Guest)
OK, OK.

1:41:47.230 --> 1:41:48.440

Émilie Bergeron, CropLife Canada (Guest)
I think you should be.

1:41:48.510 --> 1:41:50.130

Émilie Bergeron, CropLife Canada (Guest)
Are you seeing my presentation?

1:41:51.850 --> 1:41:52.70

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

1:41:53.350 --> 1:41:55.550

Émilie Bergeron, CropLife Canada (Guest)
Cat so.

1:41:55.100 --> 1:41:57.150

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Make it full screen, right?

1:41:57.160 --> 1:42:0.490

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We can just see your like it's not in presentation mode yet this slideshow.

1:42:0.410 --> 1:42:2.200

Émilie Bergeron, CropLife Canada (Guest)
Yeah, well, change that.

1:42:3.30 --> 1:42:4.40

Émilie Bergeron, CropLife Canada (Guest)
That's what percent there.

1:42:4.490 --> 1:42:7.840

Émilie Bergeron, CropLife Canada (Guest)
So you should be able to see it now on the on full mode.

1:42:11.0 --> 1:42:11.200

Émilie Bergeron, CropLife Canada (Guest)
No.

1:42:11.380 --> 1:42:12.100

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Not.

1:42:12.160 --> 1:42:12.840

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Not yet, no.

1:42:14.90 --> 1:42:14.340

Émilie Bergeron, CropLife Canada (Guest)
OK.

1:42:16.380 --> 1:42:16.950

Émilie Bergeron, CropLife Canada (Guest)
Is it better now?

1:42:19.280 --> 1:42:20.110

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
It didn't change.

1:42:21.620 --> 1:42:23.490

Émilie Bergeron, CropLife Canada (Guest)
Ohh, because it changed on my screen.

1:42:24.140 --> 1:42:26.970

Émilie Bergeron, CropLife Canada (Guest)
So, OK, let me maybe.

1:42:29.290 --> 1:42:31.840

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
I mean, we can see we can see. That's fine.

1:42:31.850 --> 1:42:33.30

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So you can go through.

1:42:33.70 --> 1:42:33.680

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
It's fine.

1:42:31.890 --> 1:42:34.400

Émilie Bergeron, CropLife Canada (Guest)
OK, let let let's do it like that.

1:42:34.410 --> 1:42:35.150

Émilie Bergeron, CropLife Canada (Guest)

I think it might be.

1:42:35.160 --> 1:42:36.160

Émilie Bergeron, CropLife Canada (Guest)

I'm sorry about that.

1:42:34.980 --> 1:42:37.90

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, that's OK.

1:42:36.170 --> 1:42:37.860

Émilie Bergeron, CropLife Canada (Guest)

But it's wait.

1:42:38.490 --> 1:42:44.80

Émilie Bergeron, CropLife Canada (Guest)

We are we haven't migrated to teams yet, so sometimes it doesn't work as well as if we add the program.

1:42:44.90 --> 1:43:7.10

Émilie Bergeron, CropLife Canada (Guest)

So sorry about that, but thank you very much for the invitation today to to attend the meeting and and present our perspective on provincial regulatory approaches to Munich sea treatment as a as the in the title and requested I I'm going to talk about what's going on in, in Ontario which you heard about from from various people as well as in Quebec.

1:43:7.200 --> 1:43:19.370

Émilie Bergeron, CropLife Canada (Guest)

Mr Rabail just presented his perspective, so I'm really glad that to be here today to present that so just before we we start, I wanted to to present you with corrupt Life, Canada.

1:43:19.380 --> 1:43:39.320

Émilie Bergeron, CropLife Canada (Guest)

I'm the vice President, chemistry there, representing one of our business line which is dealing with crop protection product, uh, we as Croplife Canada represent a Canadian developers manufacturer and distributor of pest control product and also product of modern plant breeding, biotech and gene editing.

1:43:53.320 --> 1:43:53.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK.

1:43:39.590 --> 1:43:54.390

Émilie Bergeron, CropLife Canada (Guest)

So you can see on the screen our our membership, which represent a wide varieties of of companies that have presence in in Canada either on the crop protection side or on the plan biotech side or both for for many of them so before.

1:43:53.620 --> 1:43:54.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And like, hold on one second.

1:43:54.620 --> 1:43:57.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So we're actually not seeing your slides progress.

1:43:58.910 --> 1:43:59.710

Émilie Bergeron, CropLife Canada (Guest)

OK.

1:44:0.510 --> 1:44:3.790

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Just before you went too far, just Scroll down.

1:44:3.160 --> 1:44:4.90

Émilie Bergeron, CropLife Canada (Guest)

OK.

1:44:5.230 --> 1:44:5.790

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

She's the wrong.

1:44:5.440 --> 1:44:7.950

Émilie Bergeron, CropLife Canada (Guest)

Umm, let me try again then.

1:44:8.20 --> 1:44:14.700

Émilie Bergeron, CropLife Canada (Guest)

OK, let's let's do that again, because they progress on my screen, so let's try that again just to.

1:44:21.470 --> 1:44:22.470

Émilie Bergeron, CropLife Canada (Guest)

OK, sharing.

1:44:23.680 --> 1:44:24.0

Émilie Bergeron, CropLife Canada (Guest)

OK.

1:44:24.50 --> 1:44:25.450

Émilie Bergeron, CropLife Canada (Guest)

Do you see your presentation?

1:44:26.390 --> 1:44:26.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

1:44:28.120 --> 1:44:28.460

Émilie Bergeron, CropLife Canada (Guest)
OK.

1:44:27.560 --> 1:44:28.510

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So just try and go.

1:44:28.520 --> 1:44:32.340

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Just try and switch slides to see if we'll we see it go to the next slide.

1:44:34.20 --> 1:44:34.470

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yep.

1:44:32.900 --> 1:44:35.170

Émilie Bergeron, CropLife Canada (Guest)
Yeah, maybe it's when it's fun. Full mode.

1:44:34.540 --> 1:44:35.850

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, OK.

1:44:35.940 --> 1:44:36.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

1:44:36.340 --> 1:44:36.630

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

1:44:35.220 --> 1:44:36.980

Émilie Bergeron, CropLife Canada (Guest)
OK, OK. So.

1:44:36.640 --> 1:44:38.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So if you keep it like that then it works.

1:44:39.200 --> 1:44:42.80

Émilie Bergeron, CropLife Canada (Guest)
OK, so I'll keep it then not full screen.

1:44:42.460 --> 1:44:52.250

Émilie Bergeron, CropLife Canada (Guest)
So if you have trouble to read and I'm sorry, I could maybe increase the font a little bit because it seems to be what I move in in full screen that the problem arise.

1:44:52.820 --> 1:44:54.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, that's perfect. Thank.

1:44:53.450 --> 1:45:6.510

Émilie Bergeron, CropLife Canada (Guest)

Umm, OK, so just before I I start with talking about Quebec and Ontario, I just wanted to to to let me know I'll pesticides our regulated in Canada.

1:45:6.550 --> 1:45:16.460

Émilie Bergeron, CropLife Canada (Guest)

Obviously we're for the duration really similar to the US so the the authority to regulate pesticide is shared among the different levels.

1:45:16.810 --> 1:45:26.970

Émilie Bergeron, CropLife Canada (Guest)

So the federal is responsible for pesticide registration, marketing and labeling regulates pesticide in Canada, is the pest Management Regulatory agency of Health Canada.

1:45:28.20 --> 1:45:41.250

Émilie Bergeron, CropLife Canada (Guest)

Uh provinces are responsible for cell use, storage transformation, transform, portation and disposal of pesticide that are registered previously by the federal government.

1:45:41.600 --> 1:45:49.540

Émilie Bergeron, CropLife Canada (Guest)

They also, if they have the ability or the power to restrict or ban any use of pesticide in their own territory.

1:45:50.400 --> 1:46:2.910

Émilie Bergeron, CropLife Canada (Guest)

So that's one of their power that they have uh municipalities also as power to regulate pesticide when they do so, it's about the use of pesticide, many of them in Canada have elected to do so specially in Quebec.

1:46:4.510 --> 1:46:24.370

Émilie Bergeron, CropLife Canada (Guest)

Umm so I before we get into into discussion on on C treatment, I think we've we've heard a lot today but I wanted to mention that I think there is a presentation following me about what how these products, the new units have been extensively reviewed in Canada over the past five years.

1:46:24.960 --> 1:46:32.410

Émilie Bergeron, CropLife Canada (Guest)

This is a listing of the final decisions, the most recent one by the Pest Management Regulatory agency.

1:46:32.980 --> 1:46:33.880

Émilie Bergeron, CropLife Canada (Guest)

All of them.

1:46:34.360 --> 1:46:57.600

Émilie Bergeron, CropLife Canada (Guest)

If it's the risk to pollinators from exposure to a new Unix or risk to aquatic invertebrate or exposure to clothianidin and time of toxin, health, environmental review or the the final decision on potential risk to squash bees, which is the latest one, all of them have reconfirmed the safety, love and Unix sea treatment when used according to label.

1:46:58.890 --> 1:47:11.240

Émilie Bergeron, CropLife Canada (Guest)

So that's why I see treatment is still used in Canada and I have here corn, soybean, canola among others, whereas sea treatment is used in crop production.

1:47:12.990 --> 1:47:18.500

Émilie Bergeron, CropLife Canada (Guest)

Umm, so some of the benefits of the sea treatment item we've talked about that today.

1:47:18.510 --> 1:47:25.750

Émilie Bergeron, CropLife Canada (Guest)

On the other way, but I want to focus on on where we feel that see treatment is a part of ITM strategy.

1:47:26.910 --> 1:47:40.530

Émilie Bergeron, CropLife Canada (Guest)

Uh, so we feel that there's strong benefit in protecting the plan when it's most at risk leading to healthier plan that can withstand more a negative test or environmental stress throughout the life cycle of the plant.

1:47:41.320 --> 1:47:41.950

Émilie Bergeron, CropLife Canada (Guest)

Uh.

1:47:41.960 --> 1:48:1.730

Émilie Bergeron, CropLife Canada (Guest)

The accurate placement of the seed and the seed bed really reduce risk of exposure to both growers and nontarget species and and the volume of product as to required to treat feed is less than what is used in in foliar or soil application, contributing to reducing the pesticide loading generally.

1:48:1.740 --> 1:48:16.300

Émilie Bergeron, CropLife Canada (Guest)

So we feel that as opposed to some of the previous secures that they are part of a an IBM strategy and I think the Ontario regulation shows the way of allowed it could be part of a IPM assessment.

1:48:17.470 --> 1:48:46.680

Émilie Bergeron, CropLife Canada (Guest)

So when we're talking about the imperial regulation and the Pesticide Act, and the regulation is administered by the Ministry of Environment, I know that Paul Orchestra from the Ontario grain growers came in and speak to you about the changes that have been made in 2020 to the the regulations, which was well received by industry because the regulation as it stands today is that way less burdensome that that it was before for, for growers and particular.

1:48:47.590 --> 1:48:54.60

Émilie Bergeron, CropLife Canada (Guest)

So some I'm not going through these changes again, but they are all well received by industry at the time.

1:48:55.70 --> 1:49:17.800

Émilie Bergeron, CropLife Canada (Guest)

So the regulation in Ontario, we're talking about it applies to soybean and corn seed coated with neonics, one of the three products, it's for corn used for grain or silage and soybean for seed and the requirement supply to the purchase and the planting of treated seed, but not the transport and storage which the regulations apply to.

1:49:18.220 --> 1:49:21.610

Émilie Bergeron, CropLife Canada (Guest)

So it's more limited scope then then in the Quebec provinces.

1:49:21.860 --> 1:49:32.230

Émilie Bergeron, CropLife Canada (Guest)

And then just for reference, I had the 2022 way carriage of corn and soybean just to give you a an idea of how it's comparing May compare to to Vermont production.

1:49:34.130 --> 1:49:56.20

Émilie Bergeron, CropLife Canada (Guest)

So for the use of C treatment, grower in Ontario needs to fill a certain requirements and the first one is to complete the integrate integrated pest management training, which could be done online or in person in one of the like university where it's provided across the provinces and went very, very limited cost for the growers.

1:49:56.350 --> 1:50:1.340

Émilie Bergeron, CropLife Canada (Guest)

The training needs to be completed only once and does not expire, which is an important point.

1:50:1.430 --> 1:50:10.280

Émilie Bergeron, CropLife Canada (Guest)

And when the grower successfully complete the training, you receive a certification which is important because he needs to, to have it to buy a treated seed.

1:50:10.290 --> 1:50:19.310

Émilie Bergeron, CropLife Canada (Guest)

Later on, the second portion is about the the grower needs to complete the risk assessment and a pest risk assessment report based on is risk assessment.

1:50:20.360 --> 1:50:24.990

Émilie Bergeron, CropLife Canada (Guest)

There are three ways that grower can do the risk assessment in Ontario.

1:50:25.240 --> 1:50:34.740

Émilie Bergeron, CropLife Canada (Guest)

Either you choose to do the soil pest counting, regular scouting for insect manage, or presence of grubs or wire worms at the farm.

1:50:35.740 --> 1:50:40.70

Émilie Bergeron, CropLife Canada (Guest)

The other one is that you can also elect to look at crop damage from past years.

1:50:40.80 --> 1:50:52.450

Émilie Bergeron, CropLife Canada (Guest)

So to kind of identify the the economic threshold there to confirm uh. The last in the Stan law, both in corn or soybean and have different threshold there.

1:50:52.910 --> 1:51:2.240

Émilie Bergeron, CropLife Canada (Guest)

I 15% for corn in steinlauf and 30% for soybean and these needs to be obviously have happened because of a pest.

1:51:3.370 --> 1:51:8.120

Émilie Bergeron, CropLife Canada (Guest)

The last one, the last way of doing the resentment is really through the rest.

1:51:8.210 --> 1:51:18.880

Émilie Bergeron, CropLife Canada (Guest)

The pest risk criteria which we think has great value here and this is an assessment where you look at what happened on the farm in a more I would say allistic way.

1:51:19.310 --> 1:51:24.760

Émilie Bergeron, CropLife Canada (Guest)

So you have to consider soil type, crop, rotation surrounding environments.

1:51:24.770 --> 1:51:32.140

Émilie Bergeron, CropLife Canada (Guest)

Or do you have 3 lines around pastures around where there's around your your, your farm and your field and agronomic practices?

1:51:32.150 --> 1:51:50.50

Émilie Bergeron, CropLife Canada (Guest)

Obviously, if you have a cover crop and tell her it's practice is if you're meeting one of the criteria, then if you feel one of the criteria in that sepsis criteria then it shows that it's legitimate for you to use C treatment as part of your IPM strategy.

1:51:51.440 --> 1:51:58.100

Émilie Bergeron, CropLife Canada (Guest)

What is interested here is the assessment needs to completed only once, so it's not something that you renew every year.

1:51:58.820 --> 1:52:7.330

Émilie Bergeron, CropLife Canada (Guest)

So it's less burdensome approach to to growers at the last and the third requirement for grower is that is to sign in.

1:52:7.340 --> 1:52:13.80

Émilie Bergeron, CropLife Canada (Guest)

I PM written declaration stating that in making his decision to buy or to use three to seat.

1:52:17.250 --> 1:52:17.420

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

No.

1:52:18.370 --> 1:52:33.930

Émilie Bergeron, CropLife Canada (Guest)

When when it does all that or she, uh, the grower gets the certificates from the the training and assessment report from his risk assessment and the declaration these three document needs to be shown to the retailer where he's going to buy the treated feed.

1:52:34.880 --> 1:52:44.180

Émilie Bergeron, CropLife Canada (Guest)

And So what are they like, considerations from the the Ontarian approach to regulating at treated scene.

1:52:45.710 --> 1:52:59.490

Émilie Bergeron, CropLife Canada (Guest)

So in our view, best management practices that are not regulated but are developed in collaboration with industry agronomist government would have been probably a better approach because we feel that it can.

1:52:59.540 --> 1:53:8.850

Émilie Bergeron, CropLife Canada (Guest)

The Ontario regulation is really more it's the best management practices, it's how to consider treating disease as part of your IPM strategy and how to make informed decisions.

1:53:9.710 --> 1:53:25.540

Émilie Bergeron, CropLife Canada (Guest)

So in our view a non regulatory approach that is developed in collaboration with the sector would have been better approach for Ontario helping achieve the same objective while minimizing regulatory duplication of effort with the federal level.

1:53:25.550 --> 1:53:30.40

Émilie Bergeron, CropLife Canada (Guest)

As I said earlier, these products have been approved and being saved by the federal level.

1:53:30.50 --> 1:53:38.800

Émilie Bergeron, CropLife Canada (Guest)

Looking at value proposition and an impact on workers, worker and a non target species and environments.

1:53:38.810 --> 1:53:44.60

Émilie Bergeron, CropLife Canada (Guest)

So we feel that in that case a nonregulatory approach would have been better.

1:53:44.730 --> 1:53:59.340

Émilie Bergeron, CropLife Canada (Guest)

However, when considering some of the elements that are interesting in the Ontario regulation is first and foremost the certification and assessment needs to be completed only once, which reduces the impact on resources, which is important.

1:53:59.350 --> 1:54:2.380

Émilie Bergeron, CropLife Canada (Guest)

Growers don't have a lot of time on their end.

1:54:3.120 --> 1:54:3.570

Émilie Bergeron, CropLife Canada (Guest)

Uh.

1:54:4.60 --> 1:54:8.770

Émilie Bergeron, CropLife Canada (Guest)

Also, it recognized a grower expertise and the ability to make informed decision.

1:54:8.840 --> 1:54:10.130

Émilie Bergeron, CropLife Canada (Guest)

This this is Keith.

1:54:10.140 --> 1:54:16.890

Émilie Bergeron, CropLife Canada (Guest)

Growers know about what happened and there in in this field and is best and the most informed to make those kind of decisions.

1:54:18.450 --> 1:54:25.440

Émilie Bergeron, CropLife Canada (Guest)

And lastly, it recognized the use of C treatment as part or integrate the use of the treatment as part of an ITM strategy.

1:54:25.450 --> 1:54:27.300

Émilie Bergeron, CropLife Canada (Guest)

So it it true?

1:54:27.310 --> 1:54:30.900

Émilie Bergeron, CropLife Canada (Guest)

Education and training showed growers out to you.

1:54:30.910 --> 1:54:35.430

Émilie Bergeron, CropLife Canada (Guest)

See treatment as part of a more holistic I PM strategy, which I think is very positive.

1:54:37.890 --> 1:54:39.400

Émilie Bergeron, CropLife Canada (Guest)
Then to the Quebec regulation.

1:54:39.630 --> 1:54:43.480

Émilie Bergeron, CropLife Canada (Guest)
Obviously it's a very, very different approach to what it is in Ontario today.

1:54:44.190 --> 1:54:53.360

Émilie Bergeron, CropLife Canada (Guest)
I think yeah, the snapshot from the Luis Alvarez before, but so the Ministry of Environment is regulating pesticide and track.

1:54:53.550 --> 1:55:0.580

Émilie Bergeron, CropLife Canada (Guest)
So they are administering the Pesticide Act, the pesticide management code and the certificate and permits regulation.

1:55:1.900 --> 1:55:9.160

Émilie Bergeron, CropLife Canada (Guest)
The requirements that I'm going to talk about today that are related to neonics C treatment in particular have been adopted in 2018.

1:55:9.170 --> 1:55:14.110

Émilie Bergeron, CropLife Canada (Guest)
So it's a kind of the farming practice that it's it's very recent.

1:55:14.120 --> 1:55:27.540

Émilie Bergeron, CropLife Canada (Guest)
So I know like they are conclusions that could be drawn, but we're still in the the midst of of evaluating and assessing the impact on yield productivity for the growers and particulars.

1:55:27.550 --> 1:55:32.160

Émilie Bergeron, CropLife Canada (Guest)
So it may be premature to draw a very strong conclusion of that.

1:55:32.600 --> 1:55:45.350

Émilie Bergeron, CropLife Canada (Guest)
These requirements are been adopted as part of a broader strategy on pesticide in Quebec, where they are, uh, political views on on pesticide.

1:55:45.360 --> 1:56:0.20

Émilie Bergeron, CropLife Canada (Guest)
In Quebec, public pressure and in response to that, the government has adopted many arbitrary pesticide reduction target, which we can see from the data that hasn't been met yet.

1:56:0.30 --> 1:56:1.900

Émilie Bergeron, CropLife Canada (Guest)
But there is a reason why they haven't been met.

1:56:1.910 --> 1:56:8.840

Émilie Bergeron, CropLife Canada (Guest)

Because sometimes arbitrary reduction targets are not what you need to inform farming and and meet your goals.

1:56:8.850 --> 1:56:12.910

Émilie Bergeron, CropLife Canada (Guest)

Obviously these should be informed by science rather than public pressure.

1:56:14.550 --> 1:56:24.800

Émilie Bergeron, CropLife Canada (Guest)

So what they did in in 2018 is they developed a new class or a pesticide, or adopt A new class of pesticide class 3A neonics C treatment is only part of the class.

1:56:24.810 --> 1:56:40.40

Émilie Bergeron, CropLife Canada (Guest)

They're also chlorpyrifos, that resin and other, and also for your application of the new unit, the THREONIC product and foreign unicity that applies to corn for corn seed, for grain and silage, sweet corn, soybean, canola, oat, wheat and barley.

1:56:40.50 --> 1:56:48.550

Émilie Bergeron, CropLife Canada (Guest)

So it's not just corn and soybean, it's it's everything that is grown in Quebec and just providing again the acreage air as to compare with Ontario.

1:56:48.560 --> 1:56:54.290

Émilie Bergeron, CropLife Canada (Guest)

Obviously it's way less than Ontario think the question was asked earlier to Quebec, a huge market.

1:56:54.840 --> 1:56:55.440

Émilie Bergeron, CropLife Canada (Guest)

No.

1:56:55.590 --> 1:57:1.150

Émilie Bergeron, CropLife Canada (Guest)

Quebec is a very small market in the Canadian market, which is already a small market for most of our Members.

1:57:1.160 --> 1:57:7.950

Émilie Bergeron, CropLife Canada (Guest)

So this is something that we'll talk about a little bit later in terms of what to consider when they developing best management practices.

1:57:9.360 --> 1:57:23.80

Émilie Bergeron, CropLife Canada (Guest)

So Quebec requirements for growers, so whether growers wants to use seed treatment, they need to get a agronomic justification and prescription provided by a certified agronomist to do the prescription.

1:57:23.170 --> 1:57:27.60

Émilie Bergeron, CropLife Canada (Guest)

There are templates and and and format already, but they need to do.

1:57:27.70 --> 1:57:35.700

Émilie Bergeron, CropLife Canada (Guest)

The agronomists need to do an assessment and agronomic assessment, looking at the soil type, geographic region where the grower is the organic matter, and the field.

1:57:35.710 --> 1:57:48.60

Émilie Bergeron, CropLife Canada (Guest)

That means impact the pest pressure tillage practices, crop rotation and obviously pest presence and pest presence leads to identified at the level of risk for each field.

1:57:48.490 --> 1:57:56.900

Émilie Bergeron, CropLife Canada (Guest)

There are categorized in three categories, so low, moderate or high, and only when the level of risk is being high.

1:57:56.950 --> 1:57:58.580

Émilie Bergeron, CropLife Canada (Guest)

So a certain number of.

1:58:0.540 --> 1:58:16.910

Émilie Bergeron, CropLife Canada (Guest)

Insect in the scouting that the agronomist did will allow him to prescribe seek treatment and also it is it is a very narrow approach really based on the on path pressure and scouting which is obviously it's not a perfect science.

1:58:18.340 --> 1:58:21.650

Émilie Bergeron, CropLife Canada (Guest)

So that's how they are prescribing uh C treatment.

1:58:21.660 --> 1:58:23.450

Émilie Bergeron, CropLife Canada (Guest)

So you need to meet a certain threshold.

1:58:24.240 --> 1:58:40.310

Émilie Bergeron, CropLife Canada (Guest)

I would say here that agronomist through their order, I've been asked to really minimize the number of prescription and justification they're providing, and so in a Grounders can know it have more than 5% of his feel that he's covering using C treatment.

1:58:40.420 --> 1:58:45.420

Émilie Bergeron, CropLife Canada (Guest)

So again, here we have another arbitrary uh target.

1:58:45.650 --> 1:58:48.80

Émilie Bergeron, CropLife Canada (Guest)
That is not obviously not based on science.

1:58:48.230 --> 1:58:50.170

Émilie Bergeron, CropLife Canada (Guest)
It's it's rather made there.

1:58:51.90 --> 1:58:54.630

Émilie Bergeron, CropLife Canada (Guest)
Uh to be able to meet some more political goals that have been established.

1:58:55.760 --> 1:58:58.880

Émilie Bergeron, CropLife Canada (Guest)
Air in Quebec compared to Ontario.

1:58:58.890 --> 1:59:4.290

Émilie Bergeron, CropLife Canada (Guest)
The justification and prescription is only valid for one year, and it's not valid for the entire farm.

1:59:4.300 --> 1:59:6.980

Émilie Bergeron, CropLife Canada (Guest)
It's valid for parcels, so it it has to be done.

1:59:6.990 --> 1:59:7.850

Émilie Bergeron, CropLife Canada (Guest)
Personal part parcel.

1:59:9.10 --> 1:59:11.360

Émilie Bergeron, CropLife Canada (Guest)
Umm, so it's only valid for one year.

1:59:11.370 --> 1:59:17.680

Émilie Bergeron, CropLife Canada (Guest)
You need to renew it and then the grower also need a certain permit and certificate.

1:59:17.890 --> 1:59:21.280

Émilie Bergeron, CropLife Canada (Guest)
The certificate is needed to apply the pesticide in the field.

1:59:21.290 --> 1:59:32.20

Émilie Bergeron, CropLife Canada (Guest)
Any pesticide, including a special permit to be able to plan treated seeds and also he needs a permit to be able to buy pesticide even with the justification prescription.

1:59:32.30 --> 1:59:37.320

Émilie Bergeron, CropLife Canada (Guest)
So it's an added requirement there and there's a lot of bookkeeping in Quebec.

1:59:37.330 --> 1:59:38.670

Émilie Bergeron, CropLife Canada (Guest)

It's very European approach.

1:59:39.60 --> 1:59:48.990

Émilie Bergeron, CropLife Canada (Guest)

I'm so growers are required to maintain a pesticide registry and where to keep at every information about the use of pesticide generally in their farm.

1:59:49.0 --> 1:59:50.10

Émilie Bergeron, CropLife Canada (Guest)

So where have they used it?

1:59:50.20 --> 1:59:51.60

Émilie Bergeron, CropLife Canada (Guest)

What type of pesticide?

1:59:51.70 --> 2:0:0.210

Émilie Bergeron, CropLife Canada (Guest)

For which reason and the all the record needs to be kept for five years and the ministry environment as the right to access those record for five years.

2:0:0.220 --> 2:0:4.10

Émilie Bergeron, CropLife Canada (Guest)

So the growers have kept them maintain them so that they are accessible.

2:0:4.220 --> 2:0:23.90

Émilie Bergeron, CropLife Canada (Guest)

If the ministry wants to see that, umm, there's been a recent changes to the Code of Pesticide and the other regulation applying to pesticide, we're now the government has adopted financial penalties for noncompliance, including for growers who would not be following the system.

2:0:23.100 --> 2:0:25.930

Émilie Bergeron, CropLife Canada (Guest)

The many requirements today we're only focusing on those.

2:0:26.20 --> 2:0:35.970

Émilie Bergeron, CropLife Canada (Guest)

There are many, many others requirements, umm, and these financial penalties varies between like \$250 to 1.5 million.

2:0:35.980 --> 2:0:40.440

Émilie Bergeron, CropLife Canada (Guest)

So it's quite a right wide range of a financial penalties.

2:0:41.50 --> 2:0:52.140

Émilie Bergeron, CropLife Canada (Guest)

The last one I put it there is not a grower obligation, it's a an in Quebec there is a a report that is published every year by the government as to reporting on the sale of pesticide.

2:0:52.210 --> 2:1:0.80

Émilie Bergeron, CropLife Canada (Guest)

So the data has to come from somewhere, so wholesale and retailers have to report annually to the government by January 31st.

2:1:0.90 --> 2:1:7.230

Émilie Bergeron, CropLife Canada (Guest)

I think at the sale of their their pesticide, that's how we know exactly what was sold in Quebec and for which purposes.

2:1:7.920 --> 2:1:12.590

Émilie Bergeron, CropLife Canada (Guest)

So some of the data used in the provide a previous speakers are are coming from from the report.

2:1:16.360 --> 2:1:17.890

Émilie Bergeron, CropLife Canada (Guest)

So impact on growers.

2:1:18.520 --> 2:1:31.510

Émilie Bergeron, CropLife Canada (Guest)

So obviously Quebec is the one where the the growers have to go through a lot more regulatory requirements in order to be able to access a product that has been saved by the federal level. Uh.

2:1:31.520 --> 2:1:37.600

Émilie Bergeron, CropLife Canada (Guest)

So it's an additional burden on growers that do not exist anywhere else for products that are deemed safe.

2:1:37.610 --> 2:1:56.450

Émilie Bergeron, CropLife Canada (Guest)

So there is an impact on on the the ability for growers to use that thin 2019 when actually the new requirements came into force, we saw a dramatic reduction of use of neonics feed treatment resulting in our view and less options for growers to address best issue in their fields.

2:1:57.80 --> 2:1:59.290

Émilie Bergeron, CropLife Canada (Guest)

And I know the question was asked as to why?

2:1:59.700 --> 2:2:0.630

Émilie Bergeron, CropLife Canada (Guest)

Why is that?

2:2:0.770 --> 2:2:6.130

Émilie Bergeron, CropLife Canada (Guest)

That because there was recognition that growers do not need those.

2:2:6.170 --> 2:2:16.540

Émilie Bergeron, CropLife Canada (Guest)

No, umm, the main reason is that there is a limited number of agronomists that are willing to provide justification and prescription to growers to use these products.

2:2:17.200 --> 2:2:20.890

Émilie Bergeron, CropLife Canada (Guest)

They are limited number of agronomists in 2023.

2:2:20.900 --> 2:2:31.560

Émilie Bergeron, CropLife Canada (Guest)

I think the number is 700 agronomists who are working in the plant fields of fertilizer and pesticide field, and only a few of them are providing a prescription and.

2:2:37.330 --> 2:2:48.700

Émilie Bergeron, CropLife Canada (Guest)

They are not doing it because every time they did in the past, they were audited by their order, which really put a lot of pressure on the ground is as well as because the process is very burdensome.

2:2:49.170 --> 2:3:1.600

Émilie Bergeron, CropLife Canada (Guest)

So grower, even if he wants to have access to seek treatment, neonate in particular, it is very complicated to find an agronomist who would want to even do the work to prescribe it to you.

2:3:2.700 --> 2:3:4.610

Émilie Bergeron, CropLife Canada (Guest)

Following the agronomist assessment.

2:3:4.620 --> 2:3:6.130

Émilie Bergeron, CropLife Canada (Guest)

So that explained a lot.

2:3:7.100 --> 2:3:11.860

Émilie Bergeron, CropLife Canada (Guest)

Obviously there's other products on the market that have been replaced.

2:3:11.870 --> 2:3:21.500

Émilie Bergeron, CropLife Canada (Guest)

The use of neonics seed treatment and that are used widely right now, I think really I know I saw some data from the previous presenter.

2:3:21.510 --> 2:3:24.730

Émilie Bergeron, CropLife Canada (Guest)

I'm not sure with my like the seed companies will agree with that.

2:3:24.740 --> 2:3:27.170

Émilie Bergeron, CropLife Canada (Guest)

I think I don't think we have the full data picture.

2:3:27.770 --> 2:3:29.870

Émilie Bergeron, CropLife Canada (Guest)

Uh, but it's not.

2:3:29.920 --> 2:3:41.410

Émilie Bergeron, CropLife Canada (Guest)

Many growers have opted for keeping insecticide seed treatment, moving to diamide as seeing value in using it and also the offer.

2:3:41.660 --> 2:3:51.770

Émilie Bergeron, CropLife Canada (Guest)

Obviously, when when companies do not receive the right signals and they will no longer supply the market, especially when it's a small market like Quebec, so that works.

2:3:51.780 --> 2:3:55.490

Émilie Bergeron, CropLife Canada (Guest)

It's true for seed treatment is through for for every any single product.

2:3:55.500 --> 2:3:57.420

Émilie Bergeron, CropLife Canada (Guest)

So so that also adds an impact.

2:3:58.500 --> 2:4:0.710

Émilie Bergeron, CropLife Canada (Guest)

Umm, the, uh, Quebec regulation.

2:4:0.720 --> 2:4:5.40

Émilie Bergeron, CropLife Canada (Guest)

Obviously there's a lack of recognition of the grower liability to assess its field.

2:4:5.180 --> 2:4:11.50

Émilie Bergeron, CropLife Canada (Guest)

Everything is a reliance on a third party, which is a third party agronomist or a certified agronomist.

2:4:11.60 --> 2:4:20.80

Émilie Bergeron, CropLife Canada (Guest)

In this case it as high impact on the resources both human and financial, and it is true for the growers because the agronomist services cost something.

2:4:20.90 --> 2:4:23.750

Émilie Bergeron, CropLife Canada (Guest)

So he needs to pay for it takes time also to access the ground units.

2:4:23.760 --> 2:4:33.220

Émilie Bergeron, CropLife Canada (Guest)

So there is that there's all the record keeping that is quite burdensome, but it's also very intensive for the government though are really resource intensive.

2:4:33.230 --> 2:4:51.380

Émilie Bergeron, CropLife Canada (Guest)

So there's a lot of cost associated with that, a lot of staff working on the oversight of that system and also a lot of costs for a huge impact on resource or for acronyms themselves given the small numbers that we have working in the field to service all all the farms that that we have in Quebec.

2:4:54.580 --> 2:5:7.370

Émilie Bergeron, CropLife Canada (Guest)

So when when we're talking about developing best practices or an approach to to deal with pesticide I, I think Jerry speaking lesson learned from both Ontario and Quebec.

2:5:7.380 --> 2:5:16.880

Émilie Bergeron, CropLife Canada (Guest)

From what we've seen, worked and didn't work to minimize impact on growers and I would say on the industry value chain is aligned with federal regulations as much as possible.

2:5:17.790 --> 2:5:25.440

Émilie Bergeron, CropLife Canada (Guest)

Uh, ensuring that, like, tools that are registered at a federal level, should be available for use by growers in in all provinces.

2:5:25.510 --> 2:5:30.820

Émilie Bergeron, CropLife Canada (Guest)

In our case, uh approaches needs to be based and informed by science and science.

2:5:30.830 --> 2:5:35.610

Émilie Bergeron, CropLife Canada (Guest)

Big data, whatever the data are saying when they are good value, it is very important.

2:5:35.620 --> 2:5:40.850

Émilie Bergeron, CropLife Canada (Guest)

It is important for communication with sometimes the public that may have concern.

2:5:40.860 --> 2:5:50.70

Émilie Bergeron, CropLife Canada (Guest)

I think government needs to be able or government or industry needs to be able to defend practices, but also to encourage compliance by growers and by and by growers.

2:5:50.80 --> 2:5:51.250

Émilie Bergeron, CropLife Canada (Guest)

They respond really well to.

2:5:51.860 --> 2:6:14.10

Émilie Bergeron, CropLife Canada (Guest)

I measures that are put in place or practices that are adopted when there is a good scientific basis and data, uh, predictability and transparency is key to informed commercial decisions by companies on on product availability in a certain market and even new innovative tools that they will bring to the market that are not exactly related to what is might be regulated.

2:6:14.920 --> 2:6:15.350

Émilie Bergeron, CropLife Canada (Guest)

Uh.

2:6:15.360 --> 2:6:36.870

Émilie Bergeron, CropLife Canada (Guest)

When regulations make the market unpredictable or the signals are not the right one, accompany meant aside to opt out of a special, especially when the market is small and we've seen that in in Quebec, at recognizing growing knowledge and expertise, I think I spoke to that are already it's key allowing for a timely response in the field.

2:6:37.680 --> 2:6:44.330

Émilie Bergeron, CropLife Canada (Guest)

Sometimes you don't have a week to call an agronomist for him to come to your field and and and give you a prescription.

2:6:44.400 --> 2:6:59.290

Émilie Bergeron, CropLife Canada (Guest)

You need to act very fast because the pests aren't going to wait for you, so you need to to be nimble and and allow for timely response and consider the impact on on human and financial resources for for all parts at all factors of the system.

2:7:0.440 --> 2:7:14.780

Émilie Bergeron, CropLife Canada (Guest)

So maybe I would conclude in saying that, uh, with pest pressure and environmental condition changing because of climate change and we see it quite heavily in the summer and it can take to talk to every farmers across North America and Europe as well for that matter.

2:7:14.790 --> 2:7:27.870

Émilie Bergeron, CropLife Canada (Guest)

But in in Quebec, we had a lot of water and in in Ontario as well, which makes really, really difficult growing season, the growers needs all the tools to be able to adapt and continue to produce safe, abundant and nutritious food and feed.

2:7:28.680 --> 2:7:30.920

Émilie Bergeron, CropLife Canada (Guest)

I think that's my last slide.

2:7:31.270 --> 2:7:34.240

Émilie Bergeron, CropLife Canada (Guest)

So really happy to take any questions you have.

2:7:38.880 --> 2:7:39.690

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thanks Emily.

2:7:39.780 --> 2:7:42.550

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Are there any questions?

2:7:46.400 --> 2:7:52.350

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Just a comment, I mean it must be really hard to have the different process provinces have different rules.

2:7:52.360 --> 2:7:55.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I can understand how that's pretty tricky.

2:7:58.270 --> 2:7:58.850

Émilie Bergeron, CropLife Canada (Guest)

Very tricky.

2:7:58.450 --> 2:7:59.250

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And do you think?

2:7:59.750 --> 2:8:0.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

2:8:0.150 --> 2:8:5.410

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Do you think Ontario will go the way of Quebec or once they no.

2:8:6.420 --> 2:8:9.270

Émilie Bergeron, CropLife Canada (Guest)

OK, they've they've done the reverse, actually.

2:8:9.340 --> 2:8:18.550

Émilie Bergeron, CropLife Canada (Guest)

They were the first one to go with similar something very similar to Quebec, and they realized that didn't work for for their growers, for the agriculture, competitiveness and the province.

2:8:18.560 --> 2:8:34.340

Émilie Bergeron, CropLife Canada (Guest)

So that's why they change it in 2020 as part of a an initiative to reduce thread tape and really came back with an approach that I think it's while not perfect works way better than the Quebec approach was quite burdensome.

2:8:39.260 --> 2:8:39.790

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Steve got.

2:8:39.940 --> 2:8:40.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, any.

2:8:43.370 --> 2:8:51.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Impacts for the folks in Quebec, the farmers in Quebec on income or yield as a result of the changes from the regulations, say no.

2:8:53.950 --> 2:8:56.720

Émilie Bergeron, CropLife Canada (Guest)

We don't have a study that to demonstrate that yet.

2:8:56.770 --> 2:8:58.540

Émilie Bergeron, CropLife Canada (Guest)

So we're still working on that.

2:8:59.250 --> 2:9:10.690

Émilie Bergeron, CropLife Canada (Guest)

And this is something that we're working with our Members as well and with seed company in Quebec to try to and growers as well to try to document that what was the impact.

2:9:10.750 --> 2:9:14.220

Émilie Bergeron, CropLife Canada (Guest)

As I said, they moved to another product and alternative product.

2:9:14.230 --> 2:9:17.480

Émilie Bergeron, CropLife Canada (Guest)

So it's not like they all move to non treated seeds.

2:9:18.230 --> 2:9:22.450

Émilie Bergeron, CropLife Canada (Guest)

So the impact will be milder and in certain respect what we've heard.

2:9:23.40 --> 2:9:33.750

Émilie Bergeron, CropLife Canada (Guest)

And then the next total, but many, many times is with the know our conservation tillage and a cover crop for those that have moved away from the Unix.

2:9:34.140 --> 2:9:35.290

Émilie Bergeron, CropLife Canada (Guest)

Now they're trying.

2:9:35.300 --> 2:9:43.660

Émilie Bergeron, CropLife Canada (Guest)

They're they're seeing more of the the insects in their field that will justify the need for neonate C treatment.

2:9:44.510 --> 2:9:47.100

Émilie Bergeron, CropLife Canada (Guest)
So we don't have the data yet.

2:9:47.110 --> 2:9:56.780

Émilie Bergeron, CropLife Canada (Guest)
We're working on on studies and I know the seed the seed companies aren't working as well on that to try to get the data out in terms of what is the the impact.

2:9:59.0 --> 2:9:59.310

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thank you.

2:10:3.500 --> 2:10:5.720

Louis Robert (Invité)
May I ask one what question to Emily?

2:10:7.150 --> 2:10:7.350

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Sure.

2:10:9.830 --> 2:10:10.720

Louis Robert (Invité)
You say there are.

2:10:10.730 --> 2:10:12.780

Louis Robert (Invité)
You you don't have any data available.

2:10:12.790 --> 2:10:19.420

Louis Robert (Invité)
Comparing the yields of non treated seed with treated seed is that because you find data by serum and.

2:10:21.60 --> 2:10:22.640

Louis Robert (Invité)
To be unreliable?

2:10:23.50 --> 2:10:29.180

Louis Robert (Invité)
Or is it because you don't didn't see them because they are published results on that?

2:10:29.370 --> 2:10:34.640

Louis Robert (Invité)
It's not true to say that you don't have the the public has data in Quebec anyway.

2:10:34.790 --> 2:10:36.490

Louis Robert (Invité)
And it's published in plus one too.

2:10:36.830 --> 2:10:48.70

Louis Robert (Invité)

So you have over 1000 sites and it's just a fact checking here it's it's not very true to say that there are no data available.

2:10:48.80 --> 2:10:58.410

Louis Robert (Invité)

Comparing the yields of of fields, not only plots, but fields too width and without the exact same hybrid exact same variety, even the exact same seed.

2:10:58.420 --> 2:10:58.700

Louis Robert (Invité)

Lots.

2:11:0.50 --> 2:11:0.430

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

But but.

2:10:59.640 --> 2:11:11.770

Louis Robert (Invité)

So all factors being equal, but the fact that some is treated in other is not treated that I'm not just, I'm just, you know, correcting something here that obviously is not true.

2:11:11.860 --> 2:11:13.490

Louis Robert (Invité)

There are a number of data available.

2:11:12.520 --> 2:11:13.880

Émilie Bergeron, CropLife Canada (Guest)

Do what I said though.

2:11:13.940 --> 2:11:14.310

Émilie Bergeron, CropLife Canada (Guest)

What?

2:11:13.550 --> 2:11:14.620

Émilie Bergeron, CropLife Canada (Guest)

It's not what I said.

2:11:15.50 --> 2:11:16.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That wasn't my question either.

2:11:15.10 --> 2:11:30.980

Émilie Bergeron, CropLife Canada (Guest)

Yes, he, whether we have data on yield loss, it's not now like as you you mention it as well like it's not that they've the growers now have have left a new and next to go to only non treated seed, many of them have opted for other alternative.

2:11:31.70 --> 2:11:32.430

Émilie Bergeron, CropLife Canada (Guest)
So what has been the change there?

2:11:32.440 --> 2:11:34.420

Émilie Bergeron, CropLife Canada (Guest)
I don't think there's data and for the data.

2:11:34.430 --> 2:11:36.290

Émilie Bergeron, CropLife Canada (Guest)
The Madam Library.

2:11:36.750 --> 2:11:46.170

Émilie Bergeron, CropLife Canada (Guest)
There are questions there that have been asked and we're still waiting for response about the applicability of the data and some methodology issue that we have with that data.

2:11:46.230 --> 2:11:49.330

Émilie Bergeron, CropLife Canada (Guest)
So we are looking into that.

2:11:49.340 --> 2:11:58.150

Émilie Bergeron, CropLife Canada (Guest)
We're working with the grain producer and with others to get the data straight to have a complete picture of what it looks like now today.

2:12:0.190 --> 2:12:2.720

Louis Robert (Invité)
It's been published four years ago and then just saying.

2:12:3.940 --> 2:12:4.680

Émilie Bergeron, CropLife Canada (Guest)
Yeah, I know.

2:12:5.140 --> 2:12:6.20

Émilie Bergeron, CropLife Canada (Guest)
Ohh, we don't agree.

2:12:7.250 --> 2:12:7.880

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thank you.

2:12:8.810 --> 2:12:10.780

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Are there any other questions for Emily?

2:12:13.870 --> 2:12:16.270

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Uh, OK.

2:12:18.360 --> 2:12:18.680

Émilie Bergeron, CropLife Canada (Guest)
OK.

2:12:18.690 --> 2:12:19.110

Émilie Bergeron, CropLife Canada (Guest)
Thank you.

2:12:16.700 --> 2:12:21.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thanks Emily for umm writing all that awesome information.

2:12:26.10 --> 2:12:26.390

Émilie Bergeron, CropLife Canada (Guest)
Thank you.

2:12:23.650 --> 2:12:32.550

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Do I so actually in our presentation coming up is gonna piggyback really nicely on that was afraid that I was going to.

2:12:34.0 --> 2:12:35.110

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Repeat a lot of things.

2:12:35.120 --> 2:12:37.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So Emily set me up so nicely.

2:12:37.600 --> 2:12:37.980

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Thank you.

2:12:41.110 --> 2:12:45.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So my I have to think of what I'm doing.

2:12:48.30 --> 2:12:53.720

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So basically what we heard some Members to ask kind of on a federal level.

2:12:53.730 --> 2:13:4.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So we've heard a lot from now province specific and we've heard kind of a general overview and Emily just talked about the all the scientific.

2:13:7.540 --> 2:13:11.230

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Reviews that the federal government has done on NEO next.

2:13:11.240 --> 2:13:20.830

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So we've gone through and about the environmental impacts and we've heard a little bit about the human health impacts through the risk assessments that EPA has done.

2:13:21.320 --> 2:13:27.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So basically, Health Canada has done the same thing.

2:13:27.970 --> 2:13:30.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I'm trying to put this in presentation mode.

2:13:30.570 --> 2:13:50.150

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK, so this the presentation is just going a little bit further into what Health Canada does, pest management, Regulatory agency, so the PM RA has done umm in their risk assessment for neonics.

2:13:50.740 --> 2:14:3.530

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I've mentioned before in these meetings that I reached out to Health Canada and PM RA and they pointed me to so these are the two main websites.

2:14:3.580 --> 2:14:12.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So there's one on NEO next and one for pollinator protection, and they're kind of whole story and overview is on these two websites.

2:14:12.420 --> 2:14:23.0

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I did my best to summarize this information for the aid today, and I got the presentation slides fact checked by the PMR A.

2:14:23.40 --> 2:14:25.730

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So they gave me the seal of approval to talk to you guys today.

2:14:27.580 --> 2:14:33.940

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

But so these I'll put these websites up when this goes up to the meeting materials as well.

2:14:35.290 --> 2:14:44.510

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So basically it started, so they start to kind of tell the background, which we've heard a little bit and it started in 2012.

2:14:45.650 --> 2:14:53.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So they really started to look at and start these scientific reviews of neonics in response to reports of three kills in 2012.

2:14:54.150 --> 2:15:1.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And so they instigated studies to determine risks to pollinators from exposure to NEO next.

2:15:1.50 --> 2:15:22.570

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And then they started extensive neonics, water monitoring and then the PM Array published decisions on risk, the pollinators and then on risk to aquatic invertebrates for the three main unit counters that we are always talking about closing it inside the box and a medical bread.

2:15:23.870 --> 2:15:32.780

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So starting in that 2012 seasons and then for two growing seasons in a row, there was a high instance of B desks that were reported.

2:15:33.800 --> 2:15:49.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And when neonet treated corn and or soybean seeds were planted, so they upon investigation, they could tie those deaths to exposure to the dust that was generated during the planting.

2:15:50.220 --> 2:15:59.950

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So health Canada's response in 2014 was to introduce a new requirement to limit the release of that dust.

2:16:0.40 --> 2:16:6.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And then so since that requirement be, incidents have decreased and they remain low.

2:16:10.0 --> 2:16:50.930

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So the requirement that they introduced to reduce the dusk, the dust was included, banning the use of talc and graphite, and so they only allow the use of a dust reducing fluency agent, so also included in the requirement was to avoid loading or cleaning the planting equipment in your B colonies or forage areas of what engaging the system, starting the system when the stuff could contact be colonies, and then the filled or exposed seeds and the dust had to be incorporated into the soil or cleaned up from the soil surface.

2:16:54.660 --> 2:16:55.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, OK.

2:16:55.830 --> 2:16:56.60

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

2:16:56.70 --> 2:16:56.340
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

2:16:56.390 --> 2:16:59.70
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So how did they regulate?

2:16:59.120 --> 2:17:1.220
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
The use of fluency agents.

2:17:1.350 --> 2:17:2.530
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
What was the mechanism?

2:17:2.570 --> 2:17:3.910
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
I think that's a great question.

2:17:5.240 --> 2:17:7.240
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Umm and I wanna write it down.

2:17:9.120 --> 2:17:11.380
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So I I'm seeing they have a call now.

2:17:11.630 --> 2:17:26.410
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah, I don't know if anybody, Emily, if you know or Louis of how they regulated the the fluency, fluency using only fluency agent and not just talking graphic.

2:17:28.210 --> 2:17:29.40
Émilie Bergeron, CropLife Canada (Guest)
I will have to look.

2:17:29.50 --> 2:17:31.450
Émilie Bergeron, CropLife Canada (Guest)
I don't have the the answer in top of my end.

2:17:34.860 --> 2:17:36.210
Louis Robert (Invité)
Can you repeat the question please?

2:17:37.610 --> 2:17:38.980
1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
The question was how?

2:17:39.50 --> 2:17:40.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

How is it regulated?

2:17:40.610 --> 2:17:49.280

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So it's communicated that the requirement prohibited the use of talkin graphite implanted in during planting.

2:17:49.330 --> 2:18:0.950

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And we wanted to know how that was like, how compliance was determined with that or how was it regulates the use.

2:18:1.510 --> 2:18:4.130

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The question is, how do they work for the farmer?

2:18:4.140 --> 2:18:7.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

How did they prevent the farmer from using Tao for graphite when they were planning to see?

2:18:9.970 --> 2:18:12.400

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Because that's not a pesticide per se.

2:18:13.240 --> 2:18:13.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

It would be.

2:18:13.520 --> 2:18:15.270

Louis Robert (Invité)

No, it's that's true.

2:18:15.280 --> 2:18:21.0

Louis Robert (Invité)

It's not a pesticide, but uh it news can spread around pretty easily.

2:18:21.10 --> 2:18:26.930

Louis Robert (Invité)

You know, it's a it's a risk assessment issue from my point of view.

2:18:26.940 --> 2:18:39.650

Louis Robert (Invité)

Anyway, it's A and there are only a few number of few retailers selling those products too, so it can be traced back rather easily too.

2:18:40.930 --> 2:18:46.840

Louis Robert (Invité)

But I'm not saying that it it just it's still being used from time to time that I know.

2:18:47.290 --> 2:18:53.140

Louis Robert (Invité)

But you know, it's a it's not being implemented very strictly.

2:18:53.390 --> 2:18:54.250

Louis Robert (Invité)

Let's put it that way.

2:18:55.290 --> 2:18:55.550

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK.

2:18:55.560 --> 2:18:55.850

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

2:18:57.870 --> 2:18:58.310

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I thanks.

2:19:2.150 --> 2:19:20.320

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So in addition, when they publish, this is 2 separate documents, so one was the requirements when planting treated corn or soybean seed and then they also published protecting pollinators when using treated seeds best management practices.

2:19:21.890 --> 2:19:34.60

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So within these BMP they have that that requirement of only using fluency agent and not talking graphite in a separate box but then also included in these best management practices.

2:19:35.260 --> 2:19:39.630

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm for protection of pollinators?

2:19:40.280 --> 2:19:42.470

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Is using IPM.

2:19:42.510 --> 2:20:6.670

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

When choosing the seed treatment and really asking for communication, improved communication among growers and beekeepers, and then so continuing more of these, BMPS include recognizing and avoiding pollinator habitat like leaves and flowering trees, avoiding dust exposure.

2:20:6.730 --> 2:20:15.820

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So by not planting on very dry or windy conditions when the flowering resources or standing water or B yards are downwind.

2:20:17.870 --> 2:20:20.460

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Avoid generating the dust when go ahead.

2:20:18.700 --> 2:20:23.700

Louis Robert (Invité)

I if I might, that I I cannot something, Morgan.

2:20:23.710 --> 2:20:24.320

Louis Robert (Invité)

It's just.

2:20:24.630 --> 2:20:32.940

Louis Robert (Invité)

I just to realize that in Quebec, neonics have disappeared pretty much, you know, so the question doesn't hold.

2:20:33.330 --> 2:20:34.360

Louis Robert (Invité)

It's not.

2:20:34.410 --> 2:20:43.380

Louis Robert (Invité)

It's not valid anymore because it's they're not being used in in Quebec, there are so few examples of agronomic justification.

2:20:43.460 --> 2:20:59.10

Louis Robert (Invité)

There's no need to to, you know, to whether or not we should be careful about those best management practices when using neonics when in fact we're not using them at all or, you know, less than .5% of the acreage.

2:21:0.210 --> 2:21:1.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah. Makes sense.

2:21:0.610 --> 2:21:1.350

Louis Robert (Invité)

You see what I mean?

2:21:1.350 --> 2:21:1.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

2:21:1.620 --> 2:21:2.290

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thanks. Yep.

2:21:7.140 --> 2:21:41.870

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm, so more of these best management practices that were issued by Health Canada is I calls out generating avoid generating dust also just when handling and loading the treated seed from the bags also clean and maintain your planting equipment regularly but in a way that the wash water or that the vacuum dust has generated during cleaning doesn't cause any non target exposures and then also dispose of the empty feedbacks properly and to report any suspect pollinated pressed poisoning.

2:21:42.40 --> 2:21:42.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Said poisoning.

2:21:46.20 --> 2:21:48.650

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So then this is what Emily was talking about.

2:21:48.660 --> 2:21:59.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So the PMR conducted pollinator specific reevaluations of a middle school bread clothianidin and thiamethoxam and published them in 2019.

2:21:59.400 --> 2:22:7.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And then all of the label amendments that were required in those reevaluations had to be implemented by April 21.

2:22:9.950 --> 2:22:35.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So for the middle flow grid probably reevaluation decision, it resulted in cancellation of some foliar and soil application uses as well as some restrictions to applications to crops before during bloom and then additional label statements were both for the use of new Nexus C treatments on cereal and legume crops.

2:22:40.490 --> 2:23:8.670

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Summary for clothianidin, the reevaluation decision cancelled some foliar application uses and limited others, and the additional label statements were proposed for use as C treatment on 0 props and lastly, the same general mitigation measures came out of the file and the fax spam reevaluation decision, as well as cancellation of some uses and the additional label statements for seed treatments.

2:23:11.320 --> 2:23:21.550

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I tried to find an example of the seed tag required language that resulted from these reevaluation decisions.

2:23:21.600 --> 2:23:44.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So on the left are you have the Canadian label for Gaucho 480 insecticide and it lists the required information that must be on all bags containing treated seeds and then in comparison on the right is the United States EPA UMM approved label for Gaucho 480.

2:23:45.670 --> 2:23:49.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So the Canadian label includes these.

2:23:50.700 --> 2:24:0.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Mandatory statements, so additionally all treated corn seed for sale for use in Canada must be labeled with the following information.

2:24:0.110 --> 2:24:14.370

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And then these bullet points, I know it's a little small, so I'll just read them in middle corporate is toxic to bees dust generated during planting of treated seed may be harmful to bees and other pollinators to help minimize the dust generated during planting.

2:24:14.380 --> 2:24:26.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Refer to the complete guidance pollinator protection and responsible use of creative best management practices that we just summarize a little on the Health Canada Web page and it gives the link when using a seed flow lubricant.

2:24:26.770 --> 2:24:30.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

With this treated seed, only a dust reducing fluency agent is permitted.

2:24:31.940 --> 2:24:37.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Talking graphite are not permitted to be used as a seed flow lubricant for corn seed treated with this insecticide.

2:24:38.980 --> 2:24:41.870

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Carefully follow these instructions for the seed flow lubricant.

2:24:41.960 --> 2:24:44.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Do not load or clean planting equipment near bee colonies.

2:24:44.760 --> 2:24:46.390

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Avoid places where they may be foraging.

2:24:47.440 --> 2:24:51.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

When turning on the planter, avoid engaging the system where emitted.

2:24:51.20 --> 2:24:58.810

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Dust may contact honeybee colonies and spill their exposed seed, and dust must be incorporated into the soil or cleaned up from the soil surface.

2:24:58.940 --> 2:25:10.890

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So those bullets, this way we'll saying those boards have to be on the treated corn seed label on the United States side.

2:25:11.930 --> 2:25:16.700

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm we have it says treat seed.

2:25:20.370 --> 2:25:26.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I must be labeled in accordance with all applicable requirements of the Federal Seed Act.

2:25:26.630 --> 2:25:28.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So that's what's in the box.

2:25:29.110 --> 2:25:37.490

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Same as Health Canada has that also that just says treated with either the brand name or the commonly accepted chemical name?

2:25:38.610 --> 2:25:55.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I don't use for food, feed or oil purposes, but it does have umm on here it says labels for commercially treated seed must include the following addition to the environmental hazard statement and that is exposed treated seed maybe hazardous to birds.

2:25:55.940 --> 2:26:2.0

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Dispose of all excess treated seed and seed packaging by burial away from bodies of water.

2:26:2.10 --> 2:26:4.260

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Cover or incorporate spilled treated seeds.

2:26:5.40 --> 2:26:14.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So that's just trying to show a comparison of the different labels of what they're requiring, what the requiring to put on, then a treated seed bag.

2:26:17.260 --> 2:26:17.770

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

2:26:17.820 --> 2:26:32.650

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So the question that Steve had about how the fluency agents is enforced is because it's on the label, and presumably if you use those products, then you're in your, yeah, the tree right on the tree.

2:26:32.780 --> 2:26:34.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I don't know if it's the well this is.

2:26:34.830 --> 2:26:36.460

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

This is right.

2:26:36.510 --> 2:26:38.840

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

This is on the label of Gaucho.

2:26:39.30 --> 2:26:41.370

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Is it what this is showing?

2:26:41.440 --> 2:26:44.670

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK, what I copied here was just what they're saying.

2:26:44.680 --> 2:26:47.400

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Had to be put on the seed label.

2:26:48.490 --> 2:26:50.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Get your interest right.

2:26:50.90 --> 2:26:50.700

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Exactly.

2:26:50.710 --> 2:26:51.990

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I I don't know.

2:26:52.630 --> 2:26:53.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, right.

2:26:53.670 --> 2:26:54.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We don't know.

2:26:54.250 --> 2:26:54.620

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
All right.

2:26:54.630 --> 2:26:55.150

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
OK.

2:26:55.160 --> 2:26:57.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Sorry, that's the yes.

2:26:57.520 --> 2:26:57.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Yeah.

2:27:0.480 --> 2:27:1.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
OK.

2:27:1.20 --> 2:27:13.900

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So in addition to the reevaluations that assess the risk to pollinators, Health Canada conducted special reviews, assessing the risk to aquatic invertebrates or close the ending and thiamethoxam.

2:27:15.940 --> 2:27:31.840

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So they reviewed environmental data, water, water, monitoring data and then in from those reviews in August 2018, they published a proposed special review decision that proposed cancellation of all agricultural uses.

2:27:34.920 --> 2:27:54.870

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
After that proposed decision was published, they received large amounts of neuronal water monitoring data and they had a stakeholder forum to examine the use of the action, agriculture and so Health Canada considered the extensive comments they received and the additional information they received.

2:27:54.960 --> 2:27:59.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
And they published the special reviews final decision for clothianidin.

2:27:59.760 --> 2:28:4.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
And thiamethoxam, in March of 2021.

2:28:6.870 --> 2:28:11.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And so these are kind of the summaries of those decisions, so.

2:28:14.790 --> 2:28:36.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

When they were assessing the potential risk to aquatic convert risks, they assessed quality and applied as sea treatment or foliar or soil treatment, so the resulting mitigation measures included cancellation of conferral application on potato and seed treatment for field zone.

2:28:36.50 --> 2:28:38.240

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Leafy vegetables and bunching onion.

2:28:38.960 --> 2:29:13.560

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The measures also reduce the maximum need treatment rate for field corn and reduce the yearly maximum rate for hectare, which limits the planting rates on various vegetables and then so that rate reduction for seed treatment of field corn resulted in the cancellation for the use of closing it in for corn rootworm as the seed treatment because it needed that higher rate for efficacy and there are also some folder application relevant mitigation requirement.

2:29:18.750 --> 2:29:33.340

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So similarly for scientists oxium some uses were cancelled and the maximum C treatment rate for field corn and soybean was reduced, which means uses as seed treatment for some select tests were cancelled in these crops.

2:29:35.260 --> 2:29:40.950

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And there's also a mitigation measures relevant to soil drench in feral and foliar applications.

2:29:43.150 --> 2:29:51.430

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And I'm not doing all of these, but it's there for us to have in our to refer back to all the mitigation measures.

2:29:53.500 --> 2:30:1.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So right now, Health Canada is working on the health, environmental and value assessment reevaluations of clothianidin.

2:30:1.390 --> 2:30:10.520

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And thiamethoxam and those will be more encompassing than just the pollinator and aquatic invertebrate specific ones that we just talked about.

2:30:10.830 --> 2:30:25.830

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And so they're expected in 2023 sometime, but they did publish this health, environmental and value assessment for a middle corporate and may 2021 and.

2:30:29.880 --> 2:30:51.850

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The let's see the human health risks associated with the initial corporate are considered to be acceptable when used according to revise label instructions and environmentally, the reevaluation identified risks of exposure to aquatic invertebrates and birds and mammals, and so the risk mitigation measures and label updates.

2:30:53.30 --> 2:31:1.270

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

How do we implement it so this is for middle corporate by May 2023 and then the cancel the middle corporate product will be phased out?

2:31:9.90 --> 2:31:10.70

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Ohh, that's funny.

2:31:10.80 --> 2:31:14.850

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That doesn't like to go to this like so.

2:31:14.920 --> 2:31:20.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The middle corporate risk mitigation measures that were published in this reevaluation decision.

2:31:23.60 --> 2:31:24.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Included these.

2:31:24.760 --> 2:31:25.360

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Uh.

2:31:25.400 --> 2:31:28.920

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Cancelled uses due to risk to the environment.

2:31:30.470 --> 2:31:40.260

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

The only seed treatment relevant 1 being the cancellation of use as a seed treatment for corn flea beetle on field and sweet corn.

2:31:47.150 --> 2:32:1.810

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And so a miracle period risk mitigation measures for human health included some PDE and engineering controls for seed treatment uses, and I don't have an elaboration on that.

2:32:1.870 --> 2:32:14.10

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So that is a question for me to follow up also with PMR A but and then label updates for restricted entry intervals and drift precautions.

2:32:15.470 --> 2:32:24.770

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So the mitigation measures for the environment included reduction in maximum speed treatment rate for field corn, sweet corn, soybean and select vegetables.

2:32:27.370 --> 2:32:41.980

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So the levels for these mitigation measures the labels are required to have standard statements informing users of the potential toxic effects to sensitive biota and identify spray buffer zones.

2:32:42.80 --> 2:32:54.20

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And finally, there are additional restrictions for use of treated seed, including revisions to see disposal instructions and the prohibition of broadcast seeding of treated seeds.

2:32:55.0 --> 2:33:3.890

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So that basically summarizes the information that's provided on NEO next at a federal level for Canada.

2:33:4.600 --> 2:33:19.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I do have contacts and and we have also some contacts on the call with us today that are Canadian beast that we can reach out to for questions that I might not be able to answer, but I'll try.

2:33:30.340 --> 2:33:30.720

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright.

2:33:34.100 --> 2:33:35.450

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I will go back to.

2:33:35.460 --> 2:33:37.900

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I do think, Steve, I'll see if I can.

2:33:38.910 --> 2:33:43.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Ohh, ask him about regulation of using.

2:33:44.180 --> 2:33:44.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah. Like what?

2:33:44.920 --> 2:33:46.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

How they actually enforce, yes.

2:33:50.60 --> 2:33:54.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And don't see any questions.

2:33:54.150 --> 2:33:56.860

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK, there is just trying to get back to that thing.

2:33:59.960 --> 2:34:1.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK so.

2:34:5.690 --> 2:34:11.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I think what we have next is kind of just our work plan and what our next steps are.

2:34:13.590 --> 2:34:18.100

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I will say I don't the work plan up, but I can get it up.

2:34:21.50 --> 2:34:35.890

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I do have one more speaker lined up for our August meeting and that is Scott Mccart from Cornell who is one of the authors.

2:34:38.420 --> 2:34:50.40

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Of the extensive Cornell neonics report that we heard a lot about last month, and so he's in Australia, so it was just hard to coordinate.

2:34:50.50 --> 2:34:56.470

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So he's gonna come in and be at the end of our meeting just because it's time difference.

2:34:56.480 --> 2:34:57.170

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That's what works.

2:34:57.180 --> 2:35:0.700

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So he's gonna have like, the three to four swap for our August meeting.

2:35:2.160 --> 2:35:3.30

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, I've 20.

2:35:3.40 --> 2:35:3.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thank you.

2:35:6.620 --> 2:35:19.660

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

But other so other than that what we have and I don't know of the Members that are on the call, is anybody planning on going to the few days with Heather Darby on Thursday?

2:35:20.790 --> 2:35:22.390

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I know that we wanted to maybe get in.

2:35:29.330 --> 2:35:29.670

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK.

2:35:33.970 --> 2:35:35.400

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Loras going thank you.

2:35:42.140 --> 2:35:42.990

Schubart, Steven

This is Steve.

2:35:43.440 --> 2:35:44.380

Schubart, Steven

I'm planning on going.

2:35:44.630 --> 2:35:44.760

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yes.

2:35:45.370 --> 2:35:46.400

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Ohh great scene.

2:35:46.470 --> 2:35:47.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I know you had talked about it.

2:35:47.650 --> 2:35:48.30

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That's great.

2:35:51.530 --> 2:36:1.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

But doesn't this just for folks if if you can go, it'd be that we're gonna hear about the research that Heather's doing on this particular topic.

2:36:1.910 --> 2:36:20.30

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Neonicotinoid treated seeds so, but you may recall that we talked about early on, you know, several months ago we're we're actually partially sponsoring the research that sponsored by EPA and US on your next Android three seats in Vermont.

2:36:20.40 --> 2:36:24.860

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So it's extremely for what we're doing.

2:36:24.910 --> 2:36:30.970

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So it would be good to hear from Heather S how that research is going and what they're finding.

2:36:34.240 --> 2:36:34.460

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Mm-hmm.

2:36:38.280 --> 2:36:50.70

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And then so just to tie up work plan, we also have, I know it kind of it didn't really fall through the cracks, but it's been waiting patiently.

2:36:50.200 --> 2:36:57.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We did do that round two of the AG input survey and so we have those results from that round two of trying to disseminate it.

2:36:58.840 --> 2:37:2.440

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And so we'll try and summarize those.

2:37:4.310 --> 2:37:7.80

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I didn't even look at whatever we got a big response or not.

2:37:7.90 --> 2:37:7.540

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

I don't.

2:37:7.670 --> 2:37:14.620

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah, we didn't get that many internal responses, but so we'll summarize those next month as well.

2:37:14.630 --> 2:37:16.910

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
But so the I think the chunk of.

2:37:20.390 --> 2:37:30.480

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
What we expect Members to kind of be prepared to talk about is, is what we want to do right?

2:37:30.490 --> 2:37:34.30

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So of what we're tasked to do, and that is.

2:37:36.910 --> 2:37:37.800

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Kind of under here.

2:37:37.810 --> 2:37:45.20

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So you know, we need to make a recommendation to the agency bag of.

2:37:48.210 --> 2:37:54.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
Adopting, you know whether we adopt by Rule BMPS for the use in the state of New Neptune Seeds.

2:37:54.390 --> 2:37:57.420

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So we need to address these topics.

2:37:57.430 --> 2:38:0.530

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We tried to cover these topics, I know.

2:38:3.520 --> 2:38:18.430

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
We had, I think, Steve, you had talked to me after last month and I haven't gotten with Sarah Owen, AID member to just revisit the Human health impact.

2:38:18.440 --> 2:38:21.830

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So I know that that's outstanding and that was has been communicated.

2:38:21.840 --> 2:38:29.440

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae
So that is one thing that I think of these topics that we maybe haven't heard as much as we want to on yet.

2:38:32.730 --> 2:38:44.270

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I think I guess the the charge to AIB members in preparation for August would be to be prepared to talk about what we wanna do.

2:38:45.20 --> 2:38:45.380

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

2:38:45.390 --> 2:38:54.920

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And also sort of recap what might be useful is to do a recap of what we've heard so far just to sort of bring everybody up to speed relative to these topics.

2:38:56.820 --> 2:38:57.980

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

You know, I'm saying, yeah.

2:38:57.990 --> 2:39:6.850

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So we have these topics and we've heard the presentations and gotten information on each of these topics that just sort of where we're at.

2:39:7.230 --> 2:39:12.140

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And then just have sort of a general discussion about where you know how to move forward.

2:39:12.240 --> 2:39:29.570

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We also need to recap the OR go back over to the for the decision making process we adopted months ago for you know, really I don't think I mean unless somebody has some really great ideas in August, I don't think we're gonna be ready to actually start kicking around BMP's yet.

2:39:29.580 --> 2:39:38.620

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

But, but I think we can sort of see it up, you know, for some discussions in September, October.

2:39:41.280 --> 2:39:46.210

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

And for for folks, you know, I'd really encourage everyone to as much as possible participate.

2:39:46.940 --> 2:39:56.920

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Going forward this this, this is where the the for the real work will start is with what we're doing over the next several meetings.

2:40:4.210 --> 2:40:10.590

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

So I just also wanted to make an opportunity already for public comment.

2:40:11.600 --> 2:40:17.610

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Umm, so if anybody would, if there's any comments from the public that have joined us today.

2:40:29.960 --> 2:40:34.970

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

OK, thanks to all our the folks who made presentations today.

2:40:36.230 --> 2:40:45.750

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Valuable information for the board to consider take into account that the as always, if you have any questions between now and the next meeting, reach out to Morgan.

2:40:46.920 --> 2:40:49.170

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Oregon is the keeper of all knowledge.

2:40:49.240 --> 2:40:52.600

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

That's I need to make myself a hat.

2:40:55.820 --> 2:40:57.330

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright, thank you all.

2:40:58.240 --> 2:40:58.530

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Alright.

2:40:58.540 --> 2:40:59.370

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Thanks everybody.

2:40:59.440 --> 2:41:0.210

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

See you next month.

2:41:0.330 --> 2:41:0.900

Louis Robert (Invité)

Thank you.

2:41:1.230 --> 2:41:1.470

Louis Robert (Invité)

Bye bye.

2:41:2.610 --> 2:41:2.810

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Hi.

2:41:3.60 --> 2:41:3.810

Amanda St.Pierre

Thank you. Bye.

2:41:5.470 --> 2:41:5.740

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yeah.

2:41:6.220 --> 2:41:6.640

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Why?

2:41:7.820 --> 2:41:9.50

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

We've covered a lot of grant.

2:41:11.280 --> 2:41:11.570

1f6a8ba9-2cbf-4d53-b6ef-ab7921ac00ae

Yes.