UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
SOUTHEASTERN DIVISION

BADER FARMS, INC.,

Plaintiffs,

vs. Cause No. 1:16CV299 SNLJ

MONSANTO CO., AND BASF CORPORATION,

Defendants.

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TRIAL DAY 9
VOLUME 9B - Pages 1278 - 1439

BEFORE THE HONORABLE STEPHEN N. LIMBAUGH, JR.
UNITED STATES DISTRICT JUDGE

FEBRUARY 6, 2020

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(Proceedings resumed in open court outside the presence of the jury.)

THE COURT: Any preliminary matters?

MR. RANDLES: No, Your Honor. Thank you.

THE COURT: Bring the jury in.

(Jury in.)

(Proceedings resumed in open court.)

THE COURT: Please be seated.

Mr. Randles.

MR. RANDLES: Thank you, Your Honor.

Good afternoon.

DR. FORD BALDWIN,

being previously sworn, testified as follows:

DIRECT EXAMINATION CONTINUED

BY MR. RANDLES:

Q. Good afternoon, Dr. Baldwin.

A. Yes, sir.

Q. We were just changing to a new subject when we broke for lunch. I want to talk to you in a summary fashion about the

way the release of the Xtend system changed the use of dicamba in farming. And then we'll get into more detail as we reach issue by issue; all right?

Did the release of the Xtend system have an effect on how many acres would be sprayed with dicamba?

A. Absolutely.

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Q. And what was that effect?

A. Well, that effect is we talked about the earlier uses, the effect of the Xtend system and the Xtend crops means that you're spraying all of a sudden or potentially going to spray soybean and cotton. And, you know what, there's roughly 80 million acres of soybeans in the US and, what, 13 million acres of cotton, whatever, so, I mean, it -- it greatly expanded the use.

Q. And I think you'll recall hearing Dr. Carey testify, but about 60 million acres are covered with Xtend seed so far.

Do you remember that testimony?

A. I do.
Q. And from your testimony, if you add cotton and soybean together, they're another about two-thirds of the way to all of the acres of cotton and soybean more or less; right? 60 million to 93 million?
A. That would be close.
Q. Yeah. And is the use continuing to expand?
A. It is expanding, especially in certain areas.
Q. Okay. Did the release also have an effect on the spraying of a higher rate of dicamba than used to be sprayed?
A. It did.
Q. And can you tell the jurors what that effect was?
A. I think there's been some discussion on that, but when it was used in corn, used in cereal crops, even used as a

burndown it's rarely ever used alone. It's rarely ever what we would call a foundation herbicide where that's the primary herbicide you're depending on in that use.
And because of that the use rates would be more

typically in the quarter pound active ingredient rate as opposed to, you know, the rates now. You can use it at one pound per acre if you're using it prior to crop planting. And then the in-crop use rates are a half a pound active per acre, and two of those are allowed. So, I mean, it's greatly expanded the amount of dicamba use per acre.

Q. Has it also had an effect on the time of year in which the dicamba is being sprayed?

A. Well, very much so. I mean --

Q. Explain to the jurors what that effect is.

A. Yeah. I mean, as we discussed before, when it's used in cereals, it's used strictly in the fall to very early spring. When it's used in corn, it's used fairly early in the corn growing season, which is usually a little bit ahead of the soybeans in a lot of areas. So most of those are still relatively cool conditions.

Where when you put it into cotton and soybean and you shift that use to -- I mean, May, but also June -- May, June, July depending on the area, how soon the crop gets planted,

and that sort of thing, so the potential for application under -- well, not just the potential, I mean, the

application is just naturally going to occur under much higher temperatures.

Q. And we'll go into more detail as we go, but do the following things affect off-target movement, higher temperatures?

A. Higher temperatures can affect it.

Q. Greater number of acres being sprayed?

A. Yes. The more acres you spray the more opportunity you have for something to move off target.

Q. Time of day when you apply it?

A. Time of day can have an effect.

Q. And we're going to talk about a larger one later when we talk about labels and such. Temperature inversions, do they affect it?

A. Temperature inversions affect it very much so.

Q. And you also indicated there are other conditions in the summer that can effect off-target movement like if it's

really dry. Can you explain to our jurors why really dry and dusty conditions might also contribute to off-target movement?

A. Well, I mean, it can move in blowing dust, and all of this is being done by -- these labels are -- and the Xtend crops are only for ground application, no aerial application. And if the field is dusty when the application is made, the spray boom is behind the wheels on the sprayer. So it's

just moving through the field stirring up dust, and then that dust is actually being sprayed, and that -- that's just -- I mean, that's not the top way that it would move off target, but it is just simply another way it can move off target.

Q. Let's go to another extreme. What about heavy rains and water flow, can that have an effect on movement of dicamba?

A. Well, we know that dicamba is very soluble, and I think

it's already been alluded to that it can move and it will move and run off water if the runoff water is going somewhere where you don't want it.

Q. Now, did there come a time when you were and other members of the scientific community you consult with became aware that Monsanto intended to release cotton seeds without an accompanying herbicide in 2015?

A. Well, that's correct.

Q. In terms of the risk of off-label spraying what was being discussed in the scientific community at that time?

MR. MILLER: Objection, Your Honor, as to what others were discussing.

MR. RANDLES: I'm just asking about the general nature of the conversations. I'm not asking for any particular who said what.

MR. MILLER: As long as we stick to that, no problem, Your Honor.

THE COURT: Okay.

BY MR. RANDLES:

Q. Okay. If you could tell us just generally what the -- how the subject was being addressed in the general way in the scientific community prior to the release of the '15 seeds.

A. That given the weed problems that were out there that off-label spraying would be inevitable.

Q. Now, when you say the "weed problems," I actually want to back up and address that a little bit. The jury has heard testimony that these seeds -- the cotton seeds were as I believe they said triple action or something you could use dicamba, glufosinate and glyphosate, and I think they said that the -- and you tell me if I'm right -- that the soybean seeds could use dicamba and glyphosate. Do I have that correctly?

A. That's correct. Hopefully we'll deal with them one at a time.

Q. Oh, yeah, we will. So in terms of the cotton seeds when you said that the spraying would be inevitable, what does the usability of the different herbicides -- how

does

21 that affect your opinion on that?

22 A. Well, in the case of cotton what you said is true that

23 you could use glyphosate, which was Roundup, glufosinate,

24 which is Liberty, and, obviously, the seed were also tolerant

25 to dicamba. There was already a cotton on the market that

1 was what we called a Roundup Liberty stacked trait cotton.

2 And so farmers could use not in Monsanto's varieties,

3 but farmers could plant varieties of cotton where they could

4 use glyphosate and glufosinate, and they were being quite

5 successful in that area.

6 And when the -- when the Xtend cotton came out in

7 2015, they could have continued to do that. I mean, it

8 could have been marketed in such a way to, you know, hey,

9 until we get our dicamba label use it as a glyphosate

10 glufosinate stacked trait cotton.

11 And any farmer -- I don't get a lot of calls in

cotton, but any farmer that called me that was exactly the way that I recommended it is just use it as a glyphosate/glufosinate only technology.

Q. So just so we're clear, the '15 cotton with its resistance to glufosinate and glyphosate, that wasn't the unique trait of that cotton, was it?

A. Well, it was unique to -- to the Deltapine varieties that Monsanto had, but it was not unique to cotton production.

Q. So Liberty already had one that could tolerate those two at that time legal herbicides; right?

A. That's true.

Q. What was new about the cotton was the tolerance to dicamba; is that right?

A. And it put those technologies in some very good cotton varieties, some very good germplasm that Deltapine had or Monsanto's cotton brand.

Q. But in terms of the soybeans what -- the 2016 dicamba-tolerant soybeans what herbicides could be used

with
that?
A. Okay. The soybean was different because you couldn't use the glufosinate trait in it, and there was a variety or a technology out there called LibertyLink, which -- which you could spray -- if you planted that variety, the varieties that were tolerant to Liberty, then you could spray Liberty over the top of them, but -- but what happened when the weeds developed resistance to Roundup and then -- in the part of the country we're dealing with they quickly developed resistance to the only post emergence alternative that we had.

So at that point LibertyLink was the only choice. If you had -- if you were going to control wheat -- Palmer amaranth that you've heard so much, the pigweed that was so devastating -- if you were going to control it at that time, you had to plant the LibertyLink technology.

So when a person chose to plant Xtend soybean instead of LibertyLink they pretty much were going to be

dependent on

24 controlling pigweed with dicamba in that technology.

25 Q. So if -- if a farmer planted the dicamba-tolerant

1 soybeans, he could not spray glufosinate over it; correct?

2 A. That is correct. He could spray Roundup and dicamba,

3 but the Roundup was already ineffective.

4 Q. And the pigweeds were already resistant to glyphosate,

5 Roundup; right?

6 A. That's correct.

7 Q. So if a farmer planted the dicamba-tolerant soybeans in

8 2016, and he wanted to control his pigweed with a herbicide,

9 what was his option?

10 A. Well, if he was in -- if he had a Palmer amaranth

11 problem in the area that we're talking about around Bader

12 Farms, the Bootheel of Missouri and Northeast Arkansas, I

13 mean, that was a very rampant problem, and it was a problem

14 that could be bad enough that the fields couldn't be

15 harvested, he could use some soil applied herbicides in a

system, but there's always a need for post emergence, and there was no post emergence alternative to dicamba if he planted that technology that would work.

And so if he planted it, he was either going to hand weed it or basically live with the weed pressure or spray dicamba over it.

Q. So, as the seeds were being released in '15 and '16, were you and others in the scientific community warning that off-label spraying and damage to sensitive crops was going to occur?

A. Yes.

Q. And once the damage started in '15 and '16, did you have some involvement with the Arkansas Plant Board in trying to sort this out?

A. It seems like almost on a weekly basis, but, yes, I was very involved, especially in starting in '16 after both of

the technologies came out there was still no herbicide labels, yes, I got very involved with our plant board at that point in time.

Q. And did you -- long before you met Bill Bader were you walking fields to try to figure out what was dicamba damage in Northeast Arkansas and Southeast Missouri?

A. I was.

Q. And did you spend a good portion of 2016 doing that?

A. I did.

Q. Can you describe for the jury what the -- and they've heard a little bit about this, but what was the atmosphere in the agriculture community in Northeast Arkansas and Southeast Missouri by about the middle of the summer of 2016 over this dicamba issue?

A. Well, it was a bigger issue in Missouri than it was in Arkansas. We had it. I think our plant board number of complaints were roughly 23 or something in 2016, which was up, but it wasn't anything like was happening in Missouri. Ours was more in pockets where people were using it, but --

but in Missouri and in Arkansas, I mean, everybody is just like, What's going on?

Even the farmers that were using it were saying what's wrong? I mean, what's happening? We didn't expect this. And, obviously, the people that were being affected were very much wanting to know what was going on. So, I mean, it was a big deal.

Q. Were you attending meetings about this in 2016?

A. The meeting -- of course, I was attending plant board meetings, but the other meeting I did attend was the one that's been alluded to several times, and that was the Portageville meeting. I called it a town hall meeting. I don't know what they called it.

But I actually had -- had spoken at a field day in the Midwest and was just able to attend that meeting on my way home, because I wanted to see what the Missouri people were saying about their situation.

Q. And there's already been testimony to that effect, but Bill Bader was there. Did you meet Bill Bader at that meeting?

A. I don't recall meeting him. I figured out who he was. I mean, I don't remember whether he spoke up, or some way I figured -- I knew who he was, but that was the extent of it.

Q. And Boyd Carey was there?

A. You know, I didn't know him at the time, but he said I

was there, so I'm going to assume he was there too. There were several Monsanto people there. I mean, I didn't know them all, but there were people there from the company.

Q. Might as well be clear. You've known a lot of Monsanto people for a lot of years; right?

A. Oh, absolutely. I mean, I don't know many left anymore, but I've worked with Monsanto very closely through my whole career, and, yes, I've known a lot of Monsanto people through the years.

Q. And the jury has already heard the general nature of the presentations from the Missouri Plant Board from Dr. Bradley. Did you go up and have a visit with Dr. Bradley when it was over?

A. Well, Dr. Bradley presented, and, of course, he presented on soybeans. I don't remember every detail of his talk, but the one thing he presented on that interested me very much was he took the talk outside of soybeans and started showing pictures of trees and other vegetation.

And that was in -- and I had noticed that in some of my field inspections that we may talk about later, but that was one thing that I won't say totally caught me off guard, but I think at the time most of us were thinking that the dicamba off-target issue was going to be a soybean issue. That part of it was very much expected.

But I had started noticing tree damage of just a

different species. And Kevin presented a lot of

pictures of
different kind of trees and vegetation. And some of the
pictures he presented were from peaches. And I think that
the testimony would indicate they were from Bader Farms. I
don't remember whether he said that or not, but --
Q. And at that time Bader Farms didn't really mean anything
to you, did it?
A. No, not really. I mean, you asked if Kevin and I had a
discussion. It was just mainly about trees in general
comparing notes about, you know, did you see this coming.
And we basically just had a general discussion about really
just vegetation other than soybeans, because there was no
surprise with the soybeans.
Q. Now, I would like to -- you've alluded to it, so I just
want to deal with it here. You talked about being out in
the fields a lot in 2016 looking at damage. Can you give
the jury a feel for how extensive that experience was and how
it compared to anything else you'd ever seen?
A. Well, it wasn't anything like 2017 that we'll talk about

later. I recall seeing a few fields in Arkansas in some of those pockets, but where I got close to Bader Farms I got invited -- I didn't get invited -- I got retained by an attorney actually here in Cape that asked me to go look at the soybeans on four farms, and it turns out now that I know where Bader Farms is then it was in fairly close proximity.

They were all in that area between Kennett and Malden and sort of Campbell area.

And he just asked me to go look at them, give him an opinion on whether it was dicamba that it was affecting the soybeans in question. He didn't ask me to make any investigation of where it came from, just go look and report back to him, and I did that.

Q. And the jury has already heard a fair bit about the geography of Dunklin County and Crowley's Ridge. I'm not going to go back into that in any detail, but based on your

observations and your research what are the dominant crops in Dunklin County?

A. Well, the two dominant crops are cotton and soybean.

Q. Now, I want to ask you a couple of general questions. Then we're going to get into more detail year by year; all right?

Dr. Baldwin, do you have an opinion as to what the cause of the damage to the peach trees on Bader Farms is?

A. I have an opinion on that.

Q. What is your opinion?

A. My opinion is those -- the peach trees on that farm are being exposed to just chronic exposure to dicamba several times or numerous times per year at different durations over the course of the years that we've been talking about.

Q. And do you believe that dicamba is -- dicamba is being

sprayed over the top of Xtend seeds during the growing season?

A. I absolutely do.

Q. And do you have an opinion about what the prospects for the peach business of Bader Farms is if this dicamba-tolerant system continues to be used in Dunklin County?

A. If it -- if it continues to be used as is, then I -- there's no doubt in my mind that he cannot be successful growing peaches with the technology being used as it currently is being used.

Q. And these opinions that you just stated, do you hold them to a reasonable degree of scientific certainty?

A. A very high degree of scientific certainty.

Q. I want to try to walk through now a little bit chronologically, and we've done a lot of this.

MR. RANDLES: Your Honor, I would like to show to the -- we'll start in 2015. I would like to show to the witness and Court and counsel an objection that I don't believe there is a further objection -- an exhibit that I don't believe there's a further objection to, but I believe it's Plaintiff's Exhibit 207.

(Plaintiff's Exhibit No. 207, Map, was identified.)

MR. MILLER: Same objection, Your Honor.
THE COURT: Overruled. It's been admitted already, hasn't it?

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MR. RANDLES: I don't think it's been formally admitted, but we've reached accord on their maps and our maps.
MR. MILLER: Right. And we reserved the objections, and they're reserved.
MR. ANDERSON: The same for BASF, Your Honor. We understand that Your Honor has overruled the objections.
THE COURT: Right. It's overruled and admitted then.
(Plaintiff's Exhibit No. 207, Map, was received.)
BY MR. RANDLES:
Q. Now, Dr. Baldwin, I'm going to ask you a question that is going to cover Plaintiff's Exhibit 207, 8, 9 and 10. These are -- you've seen these maps before, haven't you?
A. I have.

Q. And we sat down together and made these maps; correct?

A. That's correct.

Q. Can you tell the jurors what the basis of these maps is?

What information you used to form -- can you tell us what the

basis of these maps are?

A. Well, we requested the -- the -- of course, I would have

liked to have information on all the fields that had dicamba

applied to them. That was not -- we didn't get that, but we

requested seed sales and seed sales information in a 15-mile

radius around Bader Farms and ultimately received that

information and took the shipping addresses out of the people

that received seed and used Google maps and applied that on

the map that each one of those -- of course, the green --

Q. Well, just a second.

A. There you go.

MR. RANDLES: It's in evidence now, Your Honor.

May we publish it to the jury?

THE COURT: Yes.

MR. RANDLES: Thank you, Your Honor.

BY MR. RANDLES:

Q. So what's this green dot?

A. I call them balloons, but the green dot is the Bader Farms peach shed.

Q. Okay. And what are these other -- you call them balloons. What are the yellow balloons?

A. Well, they're -- that's just the plotting on Google maps from the addresses that we received where seed were sold at. If there was -- if there was not an exact address -- if it was P.O. Box, for example, we used the town of the shipping address, but each one of those dots or balloons also just recommends -- I mean represents one shipment. If there were multiple shipments, there's still just one dot.

Q. So even if there were multiple shipments, you just still had one dot here?

A. That's correct.

Q. And we're not -- you're not suggesting to the jury we know for sure that the dot is the exact field that a farmer would have planted in; right?

A. No. The fields would have been just distributed through the area that those dots represent, that would just be the shipping addresses.

Q. And is it your experience that farmers generally have their headquarters near where they plant?

A. Well, I mean, that would make sense. I mean, they're going to put -- a lot of these guys are spread out. There's no question about that, but their farm headquarters are generally somewhat central to their operation.

Q. And that's a fair point. Dunklin County much like Northeast Arkansas is home to a number of very large farms; correct?

A. That's correct.

Q. Okay. And this is the '15 map, so just so we're clear, and so this is cotton sales?

A. That's only cotton.

Q. Now, in 2015 you hadn't met Bader Farms yet, had you?

A. No, I had not.

Q. Had you visited with Bill Bader about what was happening with his farm and what he saw in 2015?

A. I had.

Q. Is what you have gathered from him consistent with what

you saw after the '16 season and then further forward?

A. Yeah. I think, you know, obviously, I didn't see the farm in '15. So, I mean, my opinions about the farm basically come from the gathering of all the information that I've done through the years and just kind of, you know, back calculated or backtracked from there if that makes any sense.

Q. Okay.

MR. RANDLES: Your Honor, we would like to now put up 2008, the map for '16.

MR. MILLER: Same objection, Your Honor.

MR. ANDERSON: Same objection, Your Honor.

THE COURT: You introduced these all four at once,

so no need to object further.

MR. MILLER: I'm sorry, I didn't realize that, Your Honor. I apologize.

BY MR. RANDLES:

Q. Dr. Baldwin, is this our map for '16?

A. It is.

Q. Once again, we have a little green balloon there?

A. Yes.

Q. And we switched to red balloons. I'm not sure why, but this would represent cotton and soybean shipments?

A. That is cotton and soy, and, again, just it represents one shipment of either. And we didn't try to do separate ones for cotton and separate ones for soy. That's just a

shipment of an Xtend crop one time.

Q. Okay. Now, I want to ask you a question about -- and we can take that down for now. I want to ask you a question about the end of the '16 season and beginning of the '17 season.

All right. The spraying -- it's undisputed in this case that any dicamba spraying for '15 and '16 would have been off-label in the older formulations, but on '17 the newer dicamba formulations were coming online. What messages were you hearing from the companies about how '17 would be different?

A. Well -- and, obviously, when '16 blew up much worse than '17 -- I mean, then '15 did in terms of numbers of complaints, and, you know, we talked about the town hall meeting. I think you even talked about a compliance advisory at one time being issued. Ask me that again. I lost my train of thought.

Q. That's fine. What messages were you hearing from the companies about how it would be different with the new formulations?

A. Well, I mean, obviously, the message was, well, these are the older more volatile formulations. If farmers did spray off label, this wouldn't be any big surprise. And at that time we held out hope that these new formulations were

25 going to be better.

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1 I mean, they never advertised them or never talked
2 about them as being nonvolatile. They just talked about them
3 being low volatile. And the question in our mind is, okay,
4 we're hopeful. We don't know how much lower volatility is
5 low enough when we put it out in the real world, but there
6 was still some optimism.
7 They had a valid point that these all were the older
8 higher volatility formulations. That's all that was
9 available. So that was what the general discussions was
10 around that these new formulations are going to fix the
11 problem and everything will move up.
12 Q. Okay. Before we get to the '17 growing season let's
13 start with the winter of '17. Did you make an inspection of
14 Bader Farms after you became involved in this case in
15 February of 2017?
16 A. I did.

Q. And what did you observe as you were heading into Bader Farms?

A. Well, as I was heading into Bader Farms -- I went up there from the south. I live, obviously, in Arkansas. And so I just kind of took it -- in fact, Bader Farms is almost due north of my house the way the crow flies, so to speak, so I just took a southern route up there.

And when I crossed over there out of Piggott, Arkansas and crossed -- started through the -- that portion

of Dunklin County into the Bootheel where there's essentially just nothing but flat farmland, and as I got closer and closer and my GPS was telling me I was getting closer and closer to Bader Farms, and now I'm looking at Crowley's Ridge, and I just said to myself right then if Bader Farms is setting where I think it's setting, then it's going to be very, very difficult for him to live in -- in a world, so to speak, that's going to have high uses of dicamba south

of him
or that was the direction I was coming from at the time.
Q. Well, why did the -- why did the question about whether
it was on the ridge strike you as problematic for him?
A. Well, as I was approaching from the south -- I mean, the
first place our general southern -- our generally prevailing
winds are typically from a southerly direction, so I'm
saying, okay, they're going to be blowing right toward where
I'm looking.
And also it is setting up on the ridge, which makes
it, you know, just things were blowing, they want to rise. I
mean, he's sitting up higher than everything else. I mean, I
felt like that -- there was a certain part -- degree of
vulnerability with that as well.
Q. So in your experience if you're on high ground near a
bunch of lower ground, are you at -- does that present a
special risk for getting hit with herbicide movement?
A. I mean, just based on our experience -- you know,

Crowley's Ridge runs all the way through Arkansas, so this wasn't my first experience with herbicides on Crowley's Ridge or around Crowley's Ridge, but there just seems to be something about Crowley's Ridge, which I don't know how to explain it, but it does seem to increase the risk somewhat.

Q. Okay. Now, you looked at the farm in February of '17. What were your overall impressions at that time?

A. Well, I mean, obviously it's in the wintertime. And I went up there mainly to meet Mr. Bader and just have a look around, look at the farm. That type of a preliminary -- a preliminary visit was my -- was my initial intent.

Q. And we're going to move into the growing season for '17. The jury has already seen the 2017 growing compliance advisory a couple of times, so we're not going to put it back up, but about the time of that compliance advisory did you make a second inspection of Bader Farms in August of 2017?

A. I made a second inspection in the summer of 2017. I did.

Q. And when you were there, first of all, I would like you to tell the jurors what you saw with respect to the peach trees.

A. What I saw in the terminals on the peach trees -- and excuse me -- in my opinion was auxin herbicide injury. And I had already seen Kevin Bradley's photos that in 2016 of that when he went up there.

I had already seen a lot -- when I inspected those four farms that I talked about earlier in 2016, I had seen a lot of tree damage on other types of trees that left me no doubt that it was associated -- that tree damage was associated with dicamba. And then I also saw damage on other indicator plants actually around Bader Farms.

Q. Did you -- did you see damage on soybeans around Bader Farms?

A. There was damage. Of course, there was soybean damage everywhere, including on Bader Farms.

Q. So, as you were driving around to Bader Farms, did you see dicamba damage on soybeans?

A. Well, in 2017 I mean, essentially in eastern -- in Northeast Arkansas and the Bootheel of Missouri if it was a non Xtend soybean, it had injury on it. I mean, it was just that simple. I mean, if you're driving through it, I mean, at highway speeds, there was no challenge to pick out the Xtend from the non Xtend fields. And at that time there was still a lot of non Xtend soybeans being planted. So, I mean, I was looking at soybean damage in 2017 everywhere before I ever went to Bader Farms.

Q. Now, I want to show to the witness and the Court and counsel Plaintiff's Exhibit 2019.

MR. MILLER: Same objection, Your Honor.

THE COURT: The objection is overruled.

MR. ANDERSON: Same objection, Your Honor.

MR. RANDLES: Then I move this into evidence based

on what we discussed.

THE COURT: Do you want to have it identified first?

MR. RANDLES: I will, Your Honor. I certainly will.

BY MR. RANDLES:

Q. Can you see that on your screen there?

A. Yes, sir.

Q. All right. What is the name of the document we're looking at?

A. It's called the Dicamba Dilemma: Where Do We Go From Here?

(Plaintiff's Exhibit No. 2019, Dicamba Dilemma, was identified.)

BY MR. RANDLES:

Q. And who was the author of this?

A. The author was Dr. Kevin Bradley.

Q. Now, is this a document you're familiar with?

A. I am familiar with it.

Q. Is this a document -- well, first of all, I would like for you to tell the jury how the information in this document was obtained by Dr. Bradley?

25 A. Okay. You know, the document came about because the

1 amount of damage -- I don't like to use words like exploded,
2 but proliferated just in a very, very short period of time.
3 I mean, we went from not seeing hardly any damage especially
4 on soybean to just within a two-week period essentially every
5 field you looked at if it was a non Xtend field it was
6 damaged. And we were getting it in -- and that was true in
7 the Bootheel as well.
8 And we were getting all kinds of questions about --
9 from the media as well as others to, you know, what about
10 this? I mean, how do you put it in perspective? And that's,
11 in essence, what Kevin was trying to do here, is put the
12 number of -- the plant boards and the departments of ag all
13 of a sudden were overwhelmed. And they -- he was trying to
14 put some kind of -- put it into some kind of perspective

about how Xtend seed the damage at that particular time was.

Q. So did he conduct a survey of the regulators and others to determine what the best estimate was?

MR. ANDERSON: I object to foundation, Your Honor.

THE COURT: Well, that's what he's trying to do I think, so I'll overrule it.

MR. ANDERSON: You're asking what Dr. Bradley did. This is Dr. Baldwin.

BY MR. RANDLES:

Q. Are you familiar with his methodology?

A. I am familiar with his methodology.

THE COURT: Overruled.

BY MR. RANDLES:

Q. Did he contact state regulators and other folks, weed scientists, and others who would be knowledgeable in this industry to arrive at this data?

A. Yeah. The first type of data he presented was official complaints or at least official alleged complaints at that

time, and, you know, there's kind of a difference between an alleged complaint and a confirmed complaint, because it takes the plant boards time to investigate. But he -- he got that information directly from the agencies based on the number of complaints they had received at the time that he put this together.

Q. And the information he compiled in 2017, is it the type of information relied on by experts in the weed science field to reach judgments about these sorts of issues?

A. Yeah. I mean, there's already been discussion to that, but, I mean, there have been -- at least I know of one, but I think there have been more by now peer-reviewed articles that had relied on this information. Obviously, it was in one of the EPA documents, so one would have to -- have to believe that they relied on it. It really was the only information out there that -- that tried to put this thing in perspective.

Q. And you've anticipated my question. Is there any other

information as broad reaching and as widely cited for 2017 dicamba complaints and damage as this compilation by Dr. Kevin Bradley?

A. Not to my knowledge.

Q. And is widely relied on in the field?

A. Yes, sir.

MR. RANDLES: Your Honor, I move for admission of Plaintiff's 2019.

THE COURT: It's admitted over objections.

(Plaintiff's Exhibit No. 2019, Dicamba Dilemma, was received.)

BY MR. RANDLES:

Q. All right. Let's turn to the second page.

MR. RANDLES: And may we publish, Your Honor?

Thank you, Your Honor.

BY MR. RANDLES:

Q. All right. Would you tell the jurors what we're looking at on this slide?

A. Okay. That -- that is the first one. I explained it a

while ago. That's -- it just says, "Official Dicamba Related Injury Investigations As Recorded by State Departments of Agriculture."

In other words, that information came from the state departments to Kevin. And as of October 15th, 2017, which was pretty much, you know, the season was over by then. And

those numbers are broken down by states. And then it's totaled down there at 2,708 at that point in time.

Q. Okay. And if we look here, we have Arkansas way out in front with 986; right?

A. Arkansas set the curve in 2017, it did.

Q. And then as I'm looking here, it looks like Missouri is second with 310?

A. Missouri would be second.

Q. Okay. Now, let's -- before I move on, why did we see such a large number of complaints in Arkansas and in Missouri in 2017?

A. Well, one, the acreage of Xtend crops continued to expand, but, two, that was the first year we had labeled herbicides to use. So, I mean, you know, not everybody is going to plant and spray off label. So this was going to be the introductory year. The herbicides got registered in -- toward the end of 2016. So there was just a lot more spraying took place, and especially not only this area but nationwide in 2017. I mean, that's when the technology really started coming into its own, so to speak.

Q. Have you heard Northeast Arkansas and Southeast Missouri referred as to the epicenter of the damage in '17?

A. I've heard that referred to.

Q. Would you agree with that assessment?

A. I think the damage -- I mean, the complaint numbers

pretty much speak to themselves. I would also include West Tennessee in that, because they're basically right across the river. Their complaint numbers weren't as high, but

we just
kind of lumped Arkansas -- the eastern tier counties in Arkansas, Northeast Arkansas, the Bootheel of Missouri and West Tennessee sort of all together.
Q. So if you essentially drew a circle over the region you just described -- let's see if I can do it without messing things up. If you did something like that, are you talking about the epicenter?
A. That's pretty accurate, yes, sir.
Q. I'll see if I can get rid of that. Let's go to the next page. Now, can you tell us what this slide is demonstrating?
A. That slide if you just read it at face value, "Estimates of Dicamba Injured Soybean Acreage in the U.S. As Reported by State Extension Weed Scientists." So -- so that -- it is an estimate. It states that.
But -- but, again, the weed scientists -- and I know in our case I think it's a little broader than that, because in our case in Arkansas, yes, the weed scientists, including myself, were involved in that estimate, but also our

soybean

agronomist was involved in that estimate, so it's probably a little broader within the states, but, I mean, those guys were out in the field every day and know what's going on, and

it is what it is. It's an estimate.

Q. Yes. And the total for the nation listed 3.6 million acres down there; is that correct?

A. That's correct.

Q. And this as of 2017. And you said these are just estimates. In all fairness they are just estimates. Did you do anything in Arkansas to try to confirm the validity of the claims being made?

A. Well, yeah, I mean, in Arkansas we -- we had a pretty good idea of how many Xtend beans were planted, an estimate of it in the area in question. Most of that 900,000 acres would have been in Eastern Arkansas. And, you know, we had some idea of -- of how many Xtend acres were being planted.

14 We basically almost had to assume just by looking at fields
15 that there just essentially were no -- no non dicamba
16 soybeans that weren't affected.
17 So there was some of that -- that type of logic is
18 what went into the estimate. Keep in mind, I mean, we're a
19 state that grows probably in 2017 the soybean acreage in
20 Arkansas was probably around 3.6 million.
21 So, I mean, at one time we were actually -- the first
22 time we estimated that we estimated it as high as a million.
23 And they cut it back some for purposes of this, but you're
24 still talking about 900,000 acres out of roughly 3.6 million.
25 Q. So those of you who were getting this information down

1 in Arkansas you combined your knowledge of the acres planted
2 of Xtend and non Xtend and the experience weed scientists had
3 had looking at the fields and driving fields; is that fair?
4 A. That's correct.

Q. Let's go to the next slide. Now, this is the complaints in Missouri as of October 26th of 2017. And it says total 310 complainants, 335 complaints across 52 counties. But as you look at this map, do you notice anything about how the complaints are centered?

A. Well, I mean, the bulk of the complaint numbers were in the Bootheel, as one would have expected, because, two -- I mean, first, you know, they're growing two Xtend crops in the Bootheel compared to the -- to the other parts of Missouri that doesn't grow cotton.

Q. Okay. And Dunklin County is the one down at the bottom that says 24; right?

A. It is.

Q. Can we go to I believe it's the last slide.

What is this slide trying to communicate to us?

A. Well, he titled it, but it's not really about the soybean acreage. It's about the adoption of the technology, but the point that I get out of this he was making is -- is he -- if you skip down there to the second part, he -- he

was -- essentially said there were 306,000 acres of non Xtend soybean in the Bootheel and estimated that 200,000 of those

acres were estimated to be injured with dicamba or two-thirds of the non Xtend soybean.

Q. Okay. So -- and we can take this down now. You know, based on what you were seeing, what you were hearing, what was being reported by weed scientists like Dr. Kevin Bradley, how would you characterize what happened in '17 in terms of the scope of the damage?

A. Well, it was absolutely unprecedented. We had never seen anything like this ever.

It was a situation that -- that unless you were there and unless you lived in it you can't visualize the magnitude of the affected fields. It would, you know, in the space of the 1st of July you could walk all of them you wanted to, but you could pick them out from the road. I mean, the

Xtend

soybeans were, you know, much taller than the non Xtend soybeans. The symptomology was very evident.

I mean, normally most drift situations that state regulatory agencies have to deal with we would just call it localized. I mean, it would just move from this field to that field or it moved and hit somebody's garden, or that type of thing. We had never seen broad acre uniform landscape damage like this ever.

Q. So this was unique both in terms of scope, acres damaged, numbers of complaints and the ability of state regulators to react to it?

1316

A. Well, they couldn't react to it. I mean, it -- and also the uniformity of it, which I guess we'll get into later, but that, you know, that was an important part of it as well.

Q. Let's show Plaintiff's Exhibit 2009 in evidence. Okay. We'll blow this up a little bit.

Doctor, is this the 2017 map we discussed?

A. It is.

Q. Do you see Bader Farms in the green dot here?

A. We do.

Q. And now we're at blue dots. What do you notice about '17 and these shipments compared to the prior two years?

A. Well, it basically just is a visual that says the technology was being very rapidly adopted, and I don't think anybody will argue with that. I don't think the companies will argue with that.

Q. Now, looking at this map leads me to ask you a question about something called atmospheric loading. Would you tell our jurors what atmospheric loading is?

A. Basically it's a situation where the environmental conditions and the amount of spray that's taking place in a given area simply put more herbicide in the atmosphere than the atmosphere can get rid of.

And we can talk about that some more, but you essentially see it when large numbers of acres are being

sprayed in a short period of time and pretty much being sprayed into stable air or in temperature inversion conditions that essentially traps it and makes it move laterally, and it can't exhaust out in the atmosphere like it normally would be expected to do.

Q. Now, is atmospheric loading a new idea in weed science?

A. Not at all. I mean, there's different names for it. I mean, some people call it air mass loading. I mean, there's a lot of different names for it, but it's not a new concept by any means. It's just something you don't see very often.

Q. Can you give the jurors an example or two of when it has been documented in the past by weed science field?

A. There was one situation I related to some, because I felt like that situation dealt with both drift and volatility. And it happened in the State of Washington back in the mid seventies on grapes. And it happened with 2,4-D, with the herbicide 2,4-D.

It didn't have anything to do with dicamba, but they were just getting a lot of mysterious 2,4-D injury on

grapes

in the State of Washington. And they described it two different ways. They described a localized drift, which are a localized effect, which meant they could usually figure out where it came from. I mean, it affected this orchard very close to a spray application.

But then they described another type of damage caused

more regional in nature and described it as having no patterns being perfectly uniform, being long distances away from any known spray application and being unable to determine the source of where it came from. And there was a lot -- they figured out a lot of things about it through the years, but that's one that -- one of the earliest ones I think that relates to a lot to what our situation is here.

Q. And I would like to show Dr. Baldwin and the jury Plaintiff's Exhibit 608, which is in evidence, Your Honor.

I'd like to show slide 36. If we could go off the top part.

And, Dr. Baldwin, I know you've seen this before, but just a reminder to our jury this is the presentation of Dr. Stanley Culpepper that he gave in Georgia, and you've looked at this before, haven't you?

A. I have.

Q. And he asked the question of what happens when we treat huge acres during the same time and in the same area, and it shows a lot of question marks. Do you see that?

A. I do.

Q. And is atmospheric loading one of the things you can see when that happens?

A. Well, I'm not sure what -- whether that's ground fog or what he's showing there, but treating huge acreages at the same time in the same area it is one of the things that it takes for that to happen.

And what he was saying was the same question I was raising in a lot of the articles I was writing at the

time,

We're not going to know what's going to happen with this technology until we put it out in the field and basically load the area with it, spray a lot of it at one time and see what happens. And I think he's raising the same question here. You can do all the lab and the small plot work you want to, but until you put it out there and in the real world and start spraying large acreage with it you don't know what you're going to get.

Q. And I want to -- we can take that down. Now, you're not suggesting that laboratory work doesn't have its place; right?

A. It absolutely has a place.

Q. But in terms of learning what will happen in the real world when you're talking about millions of acres being sprayed, do you believe you can really replicate that in a laboratory?

A. There's a lot of things that go on in the real world you can't replicate in a laboratory. Acre sprays is one of

them.

Q. And, likewise, do you believe that a couple of very small acreage demonstrations can tell us what would happen with this widespread use in the real world?

A. Obviously, it didn't.

1320

Q. Can you tell the jury what landscape damage -- what that phrase means?

A. What it means -- I mean, you can call it landscape damage. You can call it broad acre damage, but with this technology when the damage started occurring it affected huge acreages all at one time. I mean, all in a very short time frame, let me put it that way.

And so, one, there's the broad acre aspect of it. I mean, it essentially in 2017 West Tennessee, Eastern Arkansas and the Bootheel of Missouri all had damages that showed up essentially within a very short period of time, a period of a week, two weeks at the most. So that's one aspect of

it.

The other part of it is uniformity. Typically spray drift leaves a track. It leaves a pattern you could pretty much always tell where it came from. It may not affect all plants in a field the same way. It would leave a pattern, so to speak. Where in this situation all of a sudden all of the soybean fields that were being affected were perfectly uniform. You couldn't have even have sprayed them as uniform as they were uniformly affected.

Another thing about them was they tended to all have relatively the same degree of symptomology, which tells me that they're getting a somewhat similar dose across vast acres.

And so between the large acres, the uniform to the

symptomology a lot of these fields weren't close to a field that was being sprayed. Some of them were a mile or miles

away from any known fields that were being sprayed. So I don't have -- I don't know how to make that any more visual, but that's what it means to me.

Q. That's -- you raised something I just want to deal with before we return to that and landscape damage, which is when you're dealing with movement of volatiles, particularly in temperature inversions or with atmospheric loading, is there any way to scientifically tell it came from this field or that field over there?

A. I mean, once you load the air up, and you get that uniform damage that I'm talking about where every field looks the same, there's no way that you can tell what field it came from, because it didn't just come from one field to start with. You've got a lot of acres contributing to an air mass load.

And whether that's spray particles that are collecting in an air mass loader, whether it's volatiles that are collecting in an air mass load, I mean, no, there's no way to figure out where they came from.

Q. And during your inspections of Bader Farms and here specifically talking about '17, but in general did you see landscape damage in the peach orchards?

A. I did. I mean, the -- yes. I mean, in terms of you

could find symptomology in the top of the peach trees in that orchard and any orchard that I went in, and that was most of them.

The other thing was that you could find it -- one of the plants that sticks out to me very much in my mind was a Catalpa tree that had been cut I guess some years ago, and it had sprouted back up and was growing sprouts right next to a peach tree, and it had the most classic dicamba symptoms when you draw up leaf cupping that you've heard so much about, this being one of the primary symptoms of dicamba. It had the most textbook leaf cupping that I'd ever seen.

There were several other instances with Kudzu.

I

don't know what -- whether you know what Kudzu is or not, but most people around do. It's just a very viny plant. It tends to grow up into trees.

There was one situation in particular where the Kudzu was growing completely up in the top of the tree right across from one of the orchards. The Kudzu damage was severe -- more than I would have thought if you would have sprayed it with dicamba. It was classic dicamba symptom. The tree itself was affected, and it was affected perfectly uniform around.

Normally when something just drifts across a tree, for example, it's going to hit it from one side, and it would be much more -- it would be much worse on one side than the

other. This was perfectly uniform all the way around. And that told me a lot -- a lot of things I needed to know in

addition to what I was seeing on the peach trees to tell me what I was looking at.

Q. Now, can landscape damage be caused by mites?

A. No.

Q. Can it be caused by deer?

A. No.

Q. Can it be caused by Armillaria?

A. Not in my opinion, no.

Q. Can it be caused by drought?

A. I mean, I guess if a drought was severe enough across the landscape, perhaps, it could be. I didn't see any indication that that would be the case here.

Q. So is landscape damage a hallmark in your mind of off-target movement of herbicide?

A. I mean, it is one.

MR. RANDLES: Your Honor, I'd like to show for the jury Plaintiff's Exhibit 2010 in evidence.

BY MR. RANDLES:

Q. Now, we're in 2018, Dr. Baldwin. This is our 2018 map. And the same methodology to put it together; right?

A. It is.

Q. And what does this show you about the market penetration

of the Xtend seeds around Bill Bader?

A. I mean, it is just continuing to take the market. I mean, I'm guessing by 2018 almost all of the acres in the Bootheel were in Xtend cotton and Xtend soybean. I mean, the market penetration has been that extensive.

Q. Okay. And did you conduct two inspections of Bader Farms in 2018?

A. I did.

Q. And they were both in July, I believe?

A. They were both in July.

Q. Okay. Let's show for the witness and the Court and counsel Plaintiff's Exhibit 2174.

Dr. Baldwin, is this a photo that you took of a peach tree during your first inspection?

A. It is.

(Plaintiff's Exhibit No. 2174, Photo, was identified.)

BY MR. RANDLES:

Q. Is it a true and accurate representation of what you saw

when you were at Bader Farms?

A. It is on a lot of different trees.

MR. RANDLES: Your Honor, I'll move the admission of Plaintiff's 2174.

MR. MILLER: Same objection, but I just want a clarification, first inspection in 2018; right?

MR. RANDLES: Did I say that wrong?

MR. MILLER: I think you just said first inspection.

MR. RANDLES: Oh, I'm sorry. I meant first inspection in 2018. I'm sorry if I misspoke.

THE WITNESS: No. I understood.

THE COURT: The objection is overruled. Its admitted.

(Plaintiff's Exhibit No. 2174, Photo, was received.)

MR. RANDLES: Okay. If we could publish this.

BY MR. RANDLES:

Q. And, Dr. Baldwin, for ease of view let's look at about the top third of this. What are we looking at there,

Doctor?

A. In my opinion you're looking at classic auxin symptomology in the top of that tree. I mean, the -- an elongated leaf like a peach tree can't cup in the traditional manner that a more rounded leaf would cup, but the tight roll, the way they're wadded up, the way it's in the very terminal of the tree.

Also, it's ahead -- it's very typical of what I saw from the photographs of some dicamba research that we may talk about later, but, I mean, there's no question in my mind whatsoever that is auxin herbicide symptomology, and in this particular case it can't be coming from anything other than dicamba.

Q. And I want to ask you, you said classic symptomology. Is dicamba symptomology hard to spot from an experienced investigator?

A. Well, I mean, it will present differently on

different

things, but once you figure out what you're looking at, no,

it's not hard to spot.

Q. Have you heard the phrase unmistakable fingerprint of

dicamba?

A. I have.

Q. Is that phrase used in the scientific community?

A. It has. I mean, it's been used in soybean more than

I've heard it in other things. I mean, the tree situation

with dicamba has kind of been a learn as you go. I mean,

you -- you basically take a lot of the symptomology around

soybean fields with trees that are also damaged, and you know

it doesn't take you long to start putting two and two

together what you're looking at. And but this symptomology

on peach has also been verified by a couple of other

researchers that are actually spraying the herbicide on

peaches to know what they're looking at.

Q. Yeah. And I think we're going to get to that in just a

moment. I think that comes up, well, in your second

inspection. Now, in your second inspection -- and would you

pull up 2119, Plaintiff's, for the witness, counsel, and court.

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In your second inspection in 2018 were you joined by Dr. Jason Norsworthy from the University of Arkansas?

A. I was joined by several people on -- he -- Jason was one of them, but I was -- I was joined by several people on that visit.

Q. Why don't you tell us who all was with you on that visit.

A. I'll do my best. From the way this visit came about is Dr. Norsworthy and a lady named Susie Nichols, who is our director of our pesticide division at our plant board, was hosting a couple of people from EPA to come down and look at damage that was occurring in our area.

And when I found out they were coming -- they were asking me suggestions on places to go, and I actually suggested Bader Farms as being one of them. So that sets

the background for why we were there.

But two weed scientists from Arkansas were there, Dr. Norsworthy and Dr. Tom Barber. Ms. Nichols, that -- from our regulatory agency that -- that I just mentioned. Ruben Barris from EPA. I think he was the -- I think the head of herbicide registration. I could stand corrected on that, but he was there. There was another EPA person there that I did not know the name, Rosenblat. There were Jim Heiser from the Delta Center here in Missouri was a weed scientist that was there.

1328

And there were also a couple of people from the Missouri Department of Ag. Paul Bailey was one of them. I don't recall the other gentleman's name, but that's the group that was there.

Q. Okay. And this is a short 15 second or so video. Was this taken by Dr. Norsworthy when you were there?

A. It was taken by Dr. Norsworthy.

(Plaintiff's Exhibit No. 2119, Video, was identified.)

BY MR. RANDLES:

Q. Were you standing right with him when he took this?

A. I was there.

Q. Is this a fair and accurate representation of what you saw at the time?

A. It is.

MR. RANDLES: Your Honor, I move for the admission of Plaintiff's 2119.

MR. MILLER: Same objections, Your Honor.

MR. ANDERSON: Same objection, Your Honor.

THE COURT: Overruled and admitted.

(Plaintiff's Exhibit No. 2119, Video, was received.)

MR. RANDLES: Let's play that now for the jury.

BY MR. RANDLES:

Q. Let's pause it up toward the top. Now, Doctor, one of

the things I wanted to ask you about your prior photo and

about this photo, the kinds of symptomology we're seeing did you see in a widespread way in Bader Farms?

A. Actually, 2000 -- of the years that I've been there 2018 was the worst. It was more severe in 2018 than it was in 2017. And we'll get to 2019 later, but it was. I mean, that was typical of any orchard that I went in. That's a different plant than the picture I took.

And he really scanned the tree to show that it's going to present the most in the newest foliage. I mean, a lot of the somewhat -- I wouldn't call it cupping but canoe shape or some of what you saw in the lower leaves was pretty normal. I mean, peaches do that, but when you get up in the top of the tree, the tight rolls, the I call it kind of flag shape growth in some places, but then the extreme twists of the roll of the leaves. There's no doubt -- there's no doubt in my mind that is auxin symptomology. And nobody that was there on that visit -- the experts that were there questioned

that whatsoever.

MR. MILLER: Objection, Your Honor, I ask that be stricken.

THE COURT: I'll sustain the objection.

MR. MILLER: I ask that it be stricken.

THE COURT: The answer is stricken.

BY MR. RANDLES:

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Q. If you go to the top of the tree --

A. Okay.

Q. -- what are we seeing at the very top?

A. Just the same symptomology that was described before.

Just the tight roll and the tight twists right up there in

the very terminal part of the growth.

Q. Now, have you compared your observations and photos from

Bader Farms with photos of dicamba peach damage reported in

the scientific literature?

A. Well, I actually -- before I went to Bader Farms the

first time, the Valentine's Day visit that we talked about, I

already had a study from Dr. Prostko with the

University of

Georgia that had some data, and it also had photographs.

And because of the damage I felt was so severe in '18

I actually sent a series of photos like we've looked at to

Dr. Prostko. And I didn't lead him in any way. I just

simply asked him what he thought about them.

Q. Okay. And I don't want to get into his opinion.

A. Okay.

Q. But are you satisfied yourself that the symptoms we're

seeing are consistent with what he saw in his research?

A. Yeah. He sent me photographs back, and they matched

perfectly.

Q. Okay. Now, in his opening Mr. Miller said that the

hallmark of dicamba damage on peach trees is tip dieback. Do

you remember that?

A. I do.

Q. Now, is it always -- do you always see tip dieback in

dicamba damage?

A. In my opinion, no.
Q. Has that been researched by Dr. Prostko?
A. It has.
Q. What did his research find about tip dieback?
A. Well, looking at his data, the study that he rated for peach dieback, as I recall, he sprayed three -- what he was doing -- the reason he was conducting his research was the technology was coming. He wanted to get ahead of it.
MR. MILLER: I'm sorry to interrupt, Your Honor. I just want to object to him testifying somebody else's research. He can rely on it, but he can't talk about what somebody else did since we can't delve into that.
MR. RANDLES: Well, we can talk about the methodology and the findings the scientists regularly rely on.
THE COURT: He can talk about the methodology and the findings.
BY MR. RANDLES:
Q. So what was -- what was his methodology in the study?
A. He was spraying both dicamba and also 2,4-D on one side of a peach tree to simulate a drift that would have

come and

hit that side of the tree. And then he was taking -- his dicamba rates actually were a 1 percent rate, a one-tenth of a percent rate and a one-hundredth of a percent rate volume by -- not -- I misspoke. It was a 1 percent volume by volume. A tenth of a percent volume by volume meaning the volume of dicamba to the volume of water and a one-hundredth percent volume to volume.

Q. What did he find at those different rates?

A. Well, what he found at the different rates -- I said all that to say his highest rate was actually a one and a half times a normal use rate. Yeah, he slammed the whole side of the tree when he sprayed it with one and a half times of actual use rate.

And he -- he actually rated for tip dieback in the -- I want to think like December of that year, but it was over in the winter. And he took a tip dieback rating from

each

of those rates. And he had severe tip dieback when he sprayed it with one and a half tenths of -- I mean, mean one and a half times of use rate. He found some dieback at the -- at the middle rate. He found no tip dieback relative to the untreated or the unsprayed trees at his lowest dicamba rate, but he still rated those lowest rate for both damage, and then he also did later a vigor rating from those three rates.

Q. Okay. I'm going to tackle what you just said. So at

the lowest rating of the spray he didn't get tip dieback; is that right?

A. His data showed the tip dieback equal to the -- equal to the untreated control, which would stand to reason didn't have any.

Q. But did he still find damage to the tree?

A. He found significant damage to the tree, and then he

also found a significantly lower vigor rating when he rated for vigor of the next year.

Q. Well, what's the vigor rating mean?

A. He was just apparently looking at the trees that had been sprayed the year before and assigning what he determined to be a visual vigor rating as I would interpret his data compared to an untreated tree.

Q. So the status of the tree a year later was still showing effects from the dicamba from the prior year. Is that what you're telling us?

A. He gave it a vigor rating that was different from the untreated control.

Q. Let's go to 2019. Did you perform an inspection in 2019 of Bader Farms?

A. I did.

Q. Let's show to the witness and Court and counsel Plaintiff's Exhibit 2142. Is this a photo you took in your 2019 inspection?

A. It is.

(Plaintiff's Exhibit No. 2142, Photo, was identified.)

BY MR. RANDLES:

Q. Is it a true and accurate representation of what you saw at the time?

A. It is.

MR. RANDLES: Your Honor, I offer Plaintiff's 2142.

MR. MILLER: Same objections, Your Honor.

MR. ANDERSON: Same objection.

THE COURT: Overruled and admitted.

(Plaintiff's Exhibit No. 2142, Photo, was received.)

MR. RANDLES: All right. And let's publish that for the jury. Let's see if we can get it a little bit bigger.

BY MR. RANDLES:

Q. What are we seeing here in the top of this peach tree, Doctor?

A. I mean, basically you're seeing the same -- in the top you're seeing the same symptomology that I showed from 2018. I made the comment earlier that -- that I thought 2018

was

23 the worst of the years I looked at, and there's some reasons

24 why that 2019 was a little less. But that -- I mean, no

25 doubt I'm still looking at auxin herbicide symptomology.

1335

1 Q. And did you also look at some other plants --

2 A. I did.

3 Q. -- during your inspections? Let's show for the Court

4 and counsel and the witness Plaintiff's Exhibit 2150.

5 Is this a photo you took on your 2019 inspection?

6 A. I did.

7 (Plaintiff's Exhibit No. 2150, Photo, was

8 identified.)

9 BY MR. RANDLES:

10 Q. Is this a true and accurate representation of what you

11 saw?

12 A. It is.

13 MR. RANDLES: Your Honor, I offer Plaintiff's

14 Exhibit 2150.

15 MR. MILLER: Same objections, Your Honor.

MR. ANDERSON: Same objections.

THE COURT: Overruled and admitted.

(Plaintiff's Exhibit No. 2150, Photo, was received.)

MR. RANDLES: Can you put that up and maybe blow it up just a little bit here in the foreground.

BY MR. RANDLES:

Q. What are we looking at here, Doctor?

A. A sycamore tree.

Q. And what are you seeing on the sycamore tree?

A. Dicamba symptomology. Sycamore was one of the tree species that we figured out real quickly by looking at it around a lot of soybean fields in different areas probably -- well, it for sure started in 2017 -- that that tended to be one of the more sensitive tree species to dicamba, and it presents that very characteristic.

It can cup up it, but it tends to cup down a lot. You see some -- a lot of leaves that are just hanging. Some

people call them parachutes. Some people say that they look like umbrellas, but I've seen dicamba on sycamore from Illinois to Bader Farms, and it presents basically the same way.

Q. And given this is 2019 you're confident this can't be drought; right?

A. No. I'm confident that it is dicamba.

Q. And we'll return to the 2019 range in a moment.

THE COURT: Is this a good time to take a quick break?

MR. RANDLES: Absolutely, Your Honor.

THE COURT: All right. We'll take about a 10-minue recess. Remember the admonition, and we'll call you back in shortly.

You may step down.

THE WITNESS: Oh, sure.

(Jury out.)

(Witness steps down from the witness stand.)

(Proceedings stood in temporary recess.)

(Proceedings resumed in open court outside the presence of the jury.)

MR. MILLER: Your Honor, before the jury comes in two matters. One, I have a proposed limiting instruction.

THE COURT: Okay. Also, why are you objecting to photographs that he took himself?

MR. MILLER: Well, just because we're objecting to his expert testimony. So, again, I don't want to waive anything.

THE COURT: Okay. Well --

MR. MILLER: I mean, as far as -- I'm not objecting to that they are reasonably accurate in terms of -- of what he saw.

THE COURT: Okay.

MR. MILLER: I'm simply objecting on that basis.

MR. ANDERSON: There's also just no foundation that there's no testimony that we're aware of where the photograph is from.

MR. RANDLES: Bader Farms.

THE COURT: Yeah. I thought, yeah, that was

all

about -- yeah, that's pretty clear.

MR. RANDLES: I think we were clear on that.

THE COURT: Yeah. That was pretty clear.

When do you want me to read this?

MR. MILLER: I would propose, Your Honor, before Mr. Randles starts up again just when the jury gets back in the box.

And, again, we're reserving our -- we still make our objection, Your Honor, that we believe the evidence should not come in at all, but at Your Honor's invitation we are submitting this limiting instruction.

MR. RANDLES: And the illegal use of dicamba is not factually right, because he's talking about in '17 when the new products were out.

MR. MILLER: Mr. Hohn.

MR. HOHN: This is October. He's talking about '15 and '16.

MR. MILLER: I thought he talked about '15

and '16

too. I mean, the chart is '17 --

THE COURT: See if you can work this out.

MR. MILLER: I'm sorry?

THE COURT: Can you work it out maybe?

MR. MILLER: Sure. Sure.

The other thing, Your Honor, and I apologize if I did not follow the -- what the Court's usual ruling is here or usual procedure, and I know some courts still make you do it and some don't. The reason I did get up and object to Mr. -- or, excuse me, Dr. Baldwin's testimony as an expert is he

wasn't proffered as an expert yet, so I just want to make it clear, and I don't know if Mr. Randles wants to do that officially here. I'm assuming that's being done.

THE COURT: Well, yeah, there was all sorts of testimony that he is an expert. He's stated that he was. He gave all his credentials.

MR. MILLER: I understand, Your Honor.

THE COURT: I recognized him as an expert.

MR. MILLER: And I'm merely as a result, therefore, Your Honor, renewing our objection to any of his expert testimony for the reasons we have previously stated in our Daubert motions and various pretrial motions.

MR. ANDERSON: BASF joins as well.

THE COURT: Right. Do you want to try to work this out?

MR. MILLER: Yes.

(A discussion was held off the record.)

THE COURT: This is off the record.

(A discussion was held off the record.)

THE COURT: All right. With this change deleting "and illegal use" is there any objection to limiting instruction?

MR. RANDLES: I have no objection.

THE COURT: And I'll read it before we resume the testimony; is that right too?

MR. MILLER: I'm sorry, Your Honor?

THE COURT: I'll read it now then?

MR. MILLER: Yes. Thank you, Your Honor.

MR. RANDLES: May I stand here, Your Honor, or would you like me to sit while you're reading the instructions?

THE COURT: What's that?

MR. RANDLES: May I stand, or would you like me to sit while you read the instruction?

THE COURT: It won't take long.

MR. RANDLES: I didn't want to distract attention from the Court.

THE COURT: That's right.

(A discussion was held off the record.)

(Jury in.)

THE COURT: Please be seated.

Ladies and gentlemen, I'm going to read to you a limiting instruction at this time.

Plaintiff has introduced certain documents and reports regarding unconfirmed incidents of off-target movement of dicamba that the witness Dr. Ford Baldwin relied on in forming his opinions.

I instruct you that those documents are not evidence of and you should not consider them evidence

of the truth of the information contained in those documents.

And with that you may proceed.

MR. RANDLES: Thank you, Your Honor.

BY MR. RANDLES:

Q. Dr. Baldwin, I'd like to show you and the Court and counsel one more photo from the 2019 visit. It's 2121, Your Honor.

Dr. Baldwin, did you take this photo?

A. I did.

(Plaintiff's Exhibit No. 2121, Photo, was identified.)

BY MR. RANDLES:

Q. And is it a fair and accurate representation of what you saw during that 2019 visit?

A. It is.

MR. RANDLES: Your Honor, I offer Plaintiff's 2121.

MR. MILLER: Same objection, Your Honor.

MR. ANDERSON: Same objections.

THE COURT: Overruled and admitted.

(Plaintiff's Exhibit No. 2121, Photo, was received.)

BY MR. RANDLES:

Q. If we could show that part just slightly past the middle here.

Can you tell us what we're looking at here, Dr. Baldwin?

A. Just classic up cupping on those Catalpa sprouts that are very classic dicamba injury symptomology.

Q. Did something happen in 2019 that altered the rhythm of the planting and spring cycle in the Bootheel?

A. It did.

Q. What happened?

A. We had the wettest spring on record, I mean, nationwide but especially in this area growers had a very, very difficult time getting a crop established.

It -- it rained incessantly during the spring, and I think in most areas pushed the planting dates back probably a month. You know, consequently that pushed the spray dates

back about the same amount of time compared to say 2018 or a more normal year.

The other thing that was happening even whether people were getting in the field to spray we were still getting rain along. And we know that when -- when you get rainfall and dicamba has been applied, the volatility ceases pretty much immediately.

So there were just those things combined to -- to -- I don't want to say lighten the load, but to make the potential exposure on Bader Farms to dicamba probably a month later in 2019 than would have been normal in like 2017 or 2018.

Q. And you've heard Bill Bader testify that his early

harvest in 2019 was pretty good; right?

A. I mean, I actually predicted that. When I talked to counsel some earlier in the year, I expressed the fact that hopefully the delay in the planting of Xtend crops, the delay -- the start of the spray season hopefully might

give
him enough of a running start in 2019 to have a chance to make a better peach crop, and I think that that was borne out.
Q. And you wrote a report actually between the early harvest and secondary harvest predicting what occurred, didn't you?
A. I did. I mean, it was -- it was obvious on the visit that most of the symptomology that I was looking at on the trees -- and I looked at the symptomology on a whole host of other trees and plants that we haven't talked about, you know, in addition just to Kudzu and the sycamore tree. That symptomology appeared to be fairly recent.
And you could just tell a distinct difference. I mean, his early crop -- I don't know what -- I don't know what a good peach crop is for him, but I know they were picking a lot of peaches, and they were picking a lot of peaches off of the earlier maturing varieties, but it was obvious when I was there that the later maturing varieties,

it was going to be a totally different story, and my understanding is that it was.

1344

Q. So, yeah, you predicted that once the spraying started the harvest was going to fall off; right?

A. I did.

Q. And is it your understanding that's what happened?

A. I do.

Q. Now, if Bader Farms was being damaged by environmental conditions, disease, natural causes, would the delay in the spring have had any effect?

A. I'm not sure I understand your question.

Q. What I'm getting at is did you find the difference between the early harvest and the late harvest given the delay in the spring consistent with your opinion about the problem being dicamba or being inconsistent?

A. No. It actually cemented a lot of things together for me, because the first thing it did was eliminated drought.

And -- and I was being told or reading other reports that --

that, you know, a lot of that leaf cupping is just due to drought, but it certainly wasn't due to drought in 2017 -- so, I mean, 2019, I'm sorry.

So that cemented that right off the bat. And -- and it was much more plausible to me knowing about the spray season looking at the trees that that big difference in the early and the late crop would have been much more likely due to dicamba than a disease or some other malady, it absolutely did.

1345

Q. Once the spray started in earnest in 2019, did you see the damage to the peach trees again and the reduced harvest, and those sorts of things?

A. Yeah, I mean, I think once the spray season started in earnest, farmers had a lot of catching up to do, because the crop was late, and they were playing catch up.

So -- so there's no doubt in my mind that -- that

what I was looking at later was the same type of atmospheric loading or air mass loading that I had felt like was damaging the orchard earlier.

Q. Now, one of the things -- when we're talking about volatility, I forgot to ask you how long can dicamba volatilize after being sprayed?

A. Well, there's different data out there on that. I mean, some studies carried it out to 72 hours, and they were still finding it. Other studies have been carried out to 96 hours, and they were still finding some emissions off of those plots.

I'm not aware of any that have been carried out longer than that, perhaps. Perhaps, there have been, but most people are going to find some kind of a stopping place somewhere.

Q. We've mentioned in passing temperature inversions, but now it's time for us to delve into them. What is a temperature inversion?

A. Well, a temperature inversion -- I mean, normal temperature -- I mean, normal air -- what we would call unstable air, the warmest temperatures at the ground level, and it cools as it rises. I mean, I think the figure you commonly hear is it cools by about five degrees for every thousand feet that you go up in altitude.

But what happens in the summertime when the ground heats up and then it cools up when the sun goes down or you start getting over late in the afternoon, the ground cools a little quicker than the air above it. So what happens is you get some cool air trapped at the ground line.

And so you just -- you just are talking about an inversion in temperatures or a blip, so to speak. And then you get a layer of cool air. And then you get up to the inversion level. And then the normal, you know, normal degrees drop per thousand feet or whatever takes place again.

Q. Now, have there been studies to try to determine how frequent temperature inversions are in the summer in the Southeast Missouri?

A. There has been.

Q. Okay. Did Kevin Bradley conduct the study?

A. He did.

Q. What did he conclude about the frequency of inversions in Southeast Missouri in the summer?

A. June and July it's -- I mean, it wasn't 100 percent,

but, I mean, most -- most days in June and July there's the potential for temperature inversion. Some of those same studies have been done in Arkansas, but, I mean, you can -- I mean, you can figure it out pretty easy in the summertime in the Delta if the wind lays before dark, you can just about be guaranteed that you're going to have a temperature inversion that lasts throughout the evening.

And then when things start warming back up and air starts moving and the wind starts blowing the next morning, it goes away.

Q. Now, did Dr. Norsworthy conduct a study about

temperature inversions in the area of the Delta area there in northeast Arkansas?

A. He did.

Q. And what did he conclude?

A. He found -- he found in June and July this past year it was almost 100 percent, I mean, as far as 100 percent of the nights. In other words, based just every night in June and July we had a temperature inversion.

And they don't always have to be at night. They're much more frequently at night, but you can have temperature inversions in the daytime. You can have them set in different hours at different times before dark.

Q. I want to show the witness and Court and counsel Plaintiff's Exhibit 218. Dr. Baldwin, can you tell the

Court what this is?

A. That's just an XtendiMax with VaporGrip technology label, herbicide label.

(Plaintiff's Exhibit No. 218, Label, was

identified.)

BY MR. RANDLES:

Q. Would it be helpful to use the labels discussion on temperature inversions to explain it to the jury?

A. Well, most all labels -- I mean, you've heard some testimony about that already. Most all herbicide labels have a precaution about spraying into a temperature inversion, because --

Q. Dr. Baldwin, you're actually getting ahead of me. I'm trying to get this document in.

A. I'm sorry.

MR. RANDLES: Your Honor, I would like to offer Plaintiff's Exhibit 218.

MR. MILLER: No objection, Your Honor.

MR. ANDERSON: No objection.

THE COURT: Admitted.

(Plaintiff's Exhibit No. 218, Label, was received.)

MR. RANDLES: Okay. Let's put that up for the jury.

BY MR. RANDLES:

Q. Dr. Baldwin, in fairness, there has been modifications

to the labels during the time these products have been out and slight variations in the labels; correct?

A. There have been.

Q. But the temperature inversion language is pretty standard, isn't it?

A. Pretty standard language on their labels as well as a lot of other herbicide labels.

Q. Let's go to page 4. Now, Doctor, I want to read through a little bit of this. And this is on the official label. "Do not apply this product during a temperature inversion as the off-target movement potential is high."

And that's what you were just talking about; correct?

A. That's correct.

Q. And it goes on to say "In general, temperature inversions are more likely during the nighttime hours. Application of this product may only occur one hour after sunrise through two hours before sunset." Did I read that correctly?

A. That is correct.

Q. And then it explains the phenomena of suspended droplets can create a cloud which can move as it says here in unpredictable directions, and do you agree with that?

A. I do.

Q. And it gives your explanation in the next bullet point about essentially when they occur and what causes them to

occur.

Then it goes on to say in that third bullet point "Their presence can be indicated by a ground fog. However, if the fog is not present, inversions can also be identified by the movement of smoke from a ground source or aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud under low-lying conditions indicates an inversion while smoke that moves upward and rapidly dissipates indicates good vertical air mixing."

Is that a pretty good description of what the air can do and particles in the air in an inversion?

A. Yes.

Q. Now, as this indicates in that first bullet point, it can form a cloud that can move in unpredictable directions, and you agree with that?

A. I do.

Q. So if volatiles are moving into a temperature inversion, I think you said earlier they may not even all be from the same location; is that true?

A. That could be true.

Q. And there's no way to identify where they originated, is there?

A. That's true.

Q. Okay. So if you're not supposed to spray into a temperature inversion I want to talk about some of the label

restrictions. We can take this down now. You're not supposed to spray when a temperature inversion is present; right?

A. That is correct.

Q. And we know that, as you indicated, there might be

one

most days and nights in the southern part of Missouri; right?

More at night, but --

A. That time of the year, that's correct.

Q. You're not supposed to spray if it's about to rain; is that right?

A. Are you talking about according to this label?

Q. Yes, the label restrictions.

A. There are label statements on there about not spraying so many hours in front of I think what maybe a runoff producing rain or a rain.

Q. You're not supposed to spray before a certain time of day and after a certain time of day; correct?

A. That is correct.

Q. There are wind limitations; right?

A. That is correct.

Q. You're not supposed to spray if the wind is below a certain amount or above a certain amount; correct?

A. That's correct.

Q. And the herbicides are only guaranteed to work on weeds four inches or less; is that correct?

A. That's correct.

Q. And how much in a day can these weeds grow?

A. Well, Palmer amaranth is the 2000-pound gorilla, so to speak. I mean, that's the target weed that's driving most of these technology changes.

And it will give you a four- or five-day grace period when it first emerges out of the ground, but once it gets its root system under its feet under it, so to speak, it's going to grow two to four inches a day in summertime conditions.

Q. So in the Bootheel of Missouri and Northeast Arkansas given that the weeds can grow as much as two or four inches a day, and above four there's no guaranty of herbicide, and given these other environmental -- these restrictions on the label, if you've got to spray a thousand acre farm or more, can you get it sprayed according to the label?

A. I mean, it's -- it's very difficult. I mean, everybody acknowledges. I mean, there's been a lot of testimony on

this already that it is a very difficult label to follow and be able to spray. I mean, everything in agriculture happens in very short periods of time. I mean, farmers have lots and lots of equipment, so things happen in very short order.

And when you you've got a thousand or thousands of acres to spray within the windows that the new labels allow that's very difficult to do, if not impossible.

Q. I want to just briefly touch on the studies regarding

peaches. And we've already talked about Prostko, correct, the Prostko study on peach trees?

A. We have.

Q. And are there other scientific studies reported that confirm the dicamba injury to peach trees?

A. The one that would come to mind would be the Kevin Bradley study, or I think the primary author on that study is Dentalman (Phonetic), who's an associate of Kevin Bradley's.

Q. But compared to the research of dicamba on soybeans, compared to that body of work, is there very much reported scientific studies in the literature on damaged peach trees?

A. There's not. I mean, until we started spraying dicamba in the summertime there wasn't a lot of reason to do research in a lot of these other areas. I mean, research is very much playing catchup at this point.

Q. Well, and that's actually where I wanted to go. Has the EPA required these Defendants as part of their conditional two-year re-registration to conduct study -- more studies on the effects of dicamba on sensitive crops?

A. They have.

Q. And does that include fruit trees?

A. That would be my interpretation of it is that it does.

Q. The jury has already heard a little bit about dose response in some of the video testimony, and you were here when they heard that, but I want to talk about the notion of

dose over time; all right?

Now, when a soybean is planted, about how long is the lifespan of that soybean plant?

A. Well, I mean you're going to -- most soybeans are going to be planted in -- I mean, they differ for varieties, but they're going to be planted in anywhere from April until July, and they're going to be harvested in anywhere September to October. So --

Q. So one season?

A. Yeah. Oh, one season for sure. I mean, it's an annual plant, so, yes, it only grows one year.

Q. So even if the soybean plant get hits by dicamba, that soybean plant is going to be gone the next year; right?

A. That's correct.

Q. How does it differ with an orchard?

A. Well, obviously, peach trees are perennial plants so they're going to be there year after year hopefully. So -- so, I mean, a soybean plant only has an opportunity to be hit in any given year. That doesn't mean it can't be hit multiple times in that year, and there's a lot of research

being done there.

But a peach plant has the opportunity to get hit year after year after year, and not only that but multiple times year after year the way -- the way the herbicide is currently being used.

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Q. So what is the long-term effect on a peach tree of these repeated exposures, sometimes multiple exposures within a year, but exposures year after year?

MR. ANDERSON: Object to foundation, Your Honor.

MR. MILLER: Same objection, Your Honor. He's admitted he's not a peach tree expert, Your Honor.

MR. RANDLES: Well, Your Honor has already ruled on this.

THE COURT: But I'll overrule that objection.

MR. RANDLES: Okay.

MR. ANDERSON: Well, he said there's no research on it, Your Honor, so there's no foundation.

MR. RANDLES: That's not what he said.

THE COURT: Overruled.

BY MR. RANDLES:

Q. Let's back up. Did Prostko rate peach trees the year after of exposure based on their vigor?

A. He did.

Q. When you have repeated exposure to dicamba from peach trees year after year, what effect do you see?

MR. ANDERSON: Objection, Your Honor. There's no evidence about multiple treatments from Prostko.

THE COURT: Overruled.

BY MR. RANDLES:

Q. Go ahead.

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A. It's going to act as a stressor just like other types of things can act as a stressor, but any time you're stressing a tree year after year after year it can't help but have an effect.

Q. And does it weaken the tree over time?

A. It is going to weaken the tree over time.

Q. And is a weakened tree more susceptible to environmental impacts?

A. A weakened tree is going to be more susceptible, yes, to environmental impact among other things.

Q. And including diseases?

A. That would be my -- yes, that would be my testimony.

Q. I want to ask you about a subject that was raised yesterday in the questioning of Bill Bader. And would you -- on the subject of analytical testing.

A. Yes, sir.

Q. The subject was analytical testing?

A. Yes, sir.

Q. Pulling samples and testing from the peach trees to see if dicamba is found in it; right?

A. That's correct.

Q. That's what I'm talking about. Now, you made the decision not to test the samples of the peach tree in this case, didn't you?

A. I did.

Q. Why?

A. For two reasons. One of them being previous experience in just either pulling random samples or seeing random samples being pulled when you had no idea exactly when a herbicide exposure may have occurred.

The other reason was more scientific in that there's a lot of work been done on soybean that especially even at higher rates after about seven days even though the soybean plants are showing pretty consistent symptomology they don't find it in the sample. After about 14 days they're not finding it at all.

So, you know, not knowing exactly when the exposures occurred, when I would be up there to be able to pull random samples, I knew before I ever pulled them at those low residue rates that are low chronic exposure rates that are occurring there was a very low probability that dicamba would be found in the plants, and I would basically be stuck with a bunch of false negative samples is what it would amount to.

Q. And Prostko in his studies directly sprayed dicamba on

the trees. Did he provide an analysis of a sampling?

A. He did. When he sprayed them directly and sampled 14 days later, then he did find certain levels of dicamba in his samples.

Q. What else did he find?

A. Well, looking at the raw data, he also found levels of

2,4-D higher in some of those samples than actually dicamba levels when he sprayed dicamba on the trees.

Q. And he didn't spray 2,4-D on the trees, did he?

A. He didn't spray 2,4-D on the trees that he sprayed with dicamba.

Q. And this notion of 2,4-D popping up in samples of plants sprayed with dicamba, this isn't the only time this is reported in the literature, is it?

A. No, not to my knowledge. I mean, no. I mean --

Q. Has there been a scientific explanation that's received wide acceptance in the community as to why this happens?

A. No.

Q. I'd like to show to the witness, Court and counsel Plaintiff's Exhibit 1286.

Dr. Baldwin, you've seen this document before, haven't you?

A. I have.

Q. It's called Engenia herbicide launch training from BASF --

A. It is.

Q. -- right?

I want to turn to page 31. And I want to ask you if you agree with this statement from BASF. "We Do Not" -- in big letters -- "take samples of plants for off-target" -- because -- "b/c you cannot detect it at these rates. It's

pointless." Do you agree with that statement from BASF?

A. That is correct. And they're the dicamba people.

(Plaintiff's Exhibit No. 1286, Engenia Herbicide Launch Training, was identified.)

BY MR. RANDLES:

Q. And the jury has heard a bit about it. How would

you

describe Armillaria root rot as a pathogen?

A. Well, from what I read, and basically I didn't read anything about it until, in essence, that issue was raised by other experts as something that, perhaps, I had missed in my diagnosis.

And most of what I read on it while it could sometimes be a primary pathogen it was most consistently described as a secondary pathogen that attacked trees when they were weakened by something else.

Q. And so a tree weakened by repeated exposure to dicamba over the years, would it be more susceptible to diseases like root rot?

A. It would stand to reason it would be. I mean, I told Mr. Bader and put it in the first report that I wrote before I ever knew who any experts were going to be here what they were going to say that more than likely that continued exposure over time would weaken his trees to the point that something else would eventually take them out.

I didn't know at the time it would -- that it

might

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1 be Armillaria root rot, but that principle is -- I mean, I
2 hold to that today.
3 Q. And so would trees weakened by repeated exposure to
4 dicamba be more susceptible to things like frost?
5 A. They could be. I mean, if they're weakened, they could
6 stand to reason to be more susceptible to -- susceptible to
7 about anything.
8 Q. And did you see some root rot in the orchard?
9 A. I saw -- I saw some dead trees. They were scattered,
10 but, I mean, I don't doubt -- I'm not going to doubt their
11 experts that Armillaria root rot was found in the orchards.
12 Q. Did you see an orchard eaten up by root rot?
13 A. Not the way they've described it or -- not dead trees
14 for sure, no.
15 Q. Well, Armillaria has been in the soil of the Bootheel
16 for centuries according to scientific literature; correct?

A. From what I read it states that.

Q. So the simple finding of root rot -- I mean, Armillaria in the soil is not really a shocking fact in the Bootheel, is it?

A. I mean, according to what I've read it would not be.

Q. Okay. I want to --

MR. RANDLES: Your Honor, I want to show the Court and the witness and counsel a series of photos and then attempt to introduce them as a unit to save a little time.

Let's, first of all, show 2130.

BY MR. RANDLES:

Q. I'm going to ask you the same question about each of these photos; all right?

A. Okay.

(Plaintiff's Exhibit No. 2130, Photo, was identified.)

BY MR. RANDLES:

Q. Are these photos you took on your 2019 inspection of Bader Farms?

A. They are.

Q. And are they a fair and accurate representation of what you saw on Bader Farms?

A. For the most part, yes.

Q. Okay. Well, you tell me if there's any exception; all right?

A. Okay.

Q. Okay. Let's also look at 2132. Same questions, would I have the same answer here?

A. Yes, sir.

(Plaintiff's Exhibit No. 2132, Photo, was identified.)

BY MR. RANDLES:

Q. 2135, the same questions. Would I have the same answer here?

A. Yes, sir.

(Plaintiff's Exhibit No. 2135, Photo, was identified.)

BY MR. RANDLES:

Q. 2138, same questions. Would I have the same

answers
about this photo?
A. Yes, sir.
(Plaintiff's Exhibit No. 2138, Photo, was identified.)
BY MR. RANDLES:
Q. 2140, same questions. Would I have the same answer?
A. Yes, sir.
(Plaintiff's Exhibit No. 2140, Photo, was identified.)
BY MR. RANDLES:
Q. And 2141, same questions. Would I have the same answer?
A. Yes, sir.
(Plaintiff's Exhibit No. 2141, Photo, was identified.)
MR. RANDLES: Your Honor, I move these exhibits into evidence.
MR. MILLER: Same objections, Your Honor.
MR. ANDERSON: Same objections.
THE COURT: Overruled and admitted.
(Plaintiff's Exhibit No. 2130, Photo, was

received.)

(Plaintiff's Exhibit No. 2132, Photo, was received.)

(Plaintiff's Exhibit No. 2135, Photo, was received.)

(Plaintiff's Exhibit No. 2138, Photo, was received.)

(Plaintiff's Exhibit No. 2140, Photo, was received.)

(Plaintiff's Exhibit No. 2141, Photo, was received.)

MR. RANDLES: Okay.

BY MR. RANDLES:

Q. Let's put up 2130 first. And I want to ask you while we're getting it up did you see some weeds on Bader Farms?

A. I did.

Q. And did you see some areas where the weeds got higher than, perhaps, they should have?

A. I did.

Q. But did you see a farm overwhelmed with weeds?

A. No.

Q. Okay. This photo here, is this a photo of the peach trees and the grassy area between them that you saw on

your

visit?

A. It is.

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Q. And is this representative of what you saw?

A. I think that's a general representation, yes.

Q. Okay. Let's look at 2132. Is this a photo of what

you saw -- I'm sorry, 32, maybe. Okay. Again, is this a

photo of what you saw?

A. It is.

Q. And it's a little higher around there around that tree,

aren't they?

A. They are.

Q. You see right around the tree, though, there's less. Do

you see that?

A. There were -- those were smaller trees.

Q. Okay. Okay. 2135. Again, is this indicative of

what you saw as you walked the orchards?

A. In some orchards.

Q. Okay. 2138. Again, this is another photo you took of

the orchards?

A. It is.

Q. Okay. 2140 -- oh, I'm sorry?

A. I was just going to -- I was just going to point out one thing.

Q. Let's go back to 38, if we can.

A. That that's on a pretty steep -- a pretty steep hillside, and you can see some pretty good evidence of washing in the clean area, which is, you know, one of the

things my understanding is that it would be obvious by looking at it that he has to deal with it in his management plan.

Q. Yeah. And that's a fair point. And let me stop there, because you do see washing here. This is elevated land; right?

A. It is.

Q. And flatter land around it; right? Flatter land off the ridge?

A. Oh, off the ridge, yes.

Q. Yes. And so when it rains, gravity gets the

water and
takes it down?
A. Water doesn't run uphill.
Q. Okay. And so are there -- are there -- when you're farming on a hill, and you've got a lot of water runoff, do you dare strip all the grass off?
A. Not if you want to save your soil.
Q. All right. 2140. Again, your visit in 2019 what you saw?
A. It is.
Q. And there's some grass around there. And then you see it underneath the tree a lot less; right?
A. That's correct.
Q. And 2141. And is this indicative of what you saw?
A. Yeah. It would be representative, yes, sir.

Q. And just as a reminder to refresh the jury, your visit was July 20th of 2019, which was still a very wet summer; right?
A. It was.

Q. So, if anything, the wetness would make the weeds harder to keep up with than a normal year; right?

A. It would stand to reason.

Q. Okay. Dr. Baldwin -- we can take those down -- with the herbicide injury you have seen in the surrounding communities, as we've talked about, and at Bader Farms, did you consider other explanations and reject them?

A. Yeah. I mean, as a weed scientist, I mean, obviously I'm going to go first looking for herbicide symptomology, because if I don't find herbicide symptomology, then basically I'm going to pass that off to somebody else or say it doesn't look herbicidal in nature to me.

So once I do find herbicide symptomology, then, you know, I try to do enough to see if there are a lot of anything else complicating that, but, I mean, in this case, as I looked at it over the years, it was obvious enough to me that until that issue was taken care of a lot of these other issues weren't going to matter.

Q. Well, and I want to follow up on that. What changed in

Southeast Missouri and Northeast Arkansas from 2015 forward about the farming environment?

A. Very simply the introduction of Xtend crops.
Q. Now, before 2015 did we see floods?
A. Let me -- let me back up and rephrase that --
Q. Okay.
A. -- and say the use of dicamba in Xtend crops.
Q. Before 2015 did we see things like floods?
A. Sure. I mean, we've seen all kinds of things.
Q. Various weather-related events?
A. Sure.
Q. Various diseases?
A. Yes, sir.
Q. Pests like deer and mites, and that sort of thing?
A. Yes, sir.
Q. Just a couple of things that have come up in the case, and we'll dispose of them, and we'll be done with you. The jury has heard about some closed chamber type studies. Would you talk to us about closed chamber studies and what their limitations are in applying them to the real world?

A. Well, I think that the first thing I would cite on that would be what I think is the landmark dicamba publication that I haven't heard cited here yet. It was conducted by two scientists -- you're going to love this -- Barons (Phonetic) and Lucians (Phonetic) or Barons (Phonetic) and Lucian (Phonetic) I think it would be. And I'll hit with that later if I need to -- in 1979.

And they did several different -- well, they did a lot of different -- the whole -- it's just called dicamba volatility, I believe, but the whole study was on the volatility of dicamba, the dicambas that existed, the formulations that existed in 1979.

And one of the things they did was closed chamber studies. They didn't call them humidomes, but they were closed chamber studies. And when they would compare different formulations having different volatility back in that day, they frequently found big differences in the

volatility in the closed chamber studies, but when they took

that to the field, it fell apart.

Q. In other words, the closed chambers studies showed the

big differences in volatility, but did those differences in

volatility between the various formulations show up in the

field when they were tested there?

A. When they took those same formulations in the field,

what they tended to find is those differences disappeared for

the most part. And go ahead.

Q. What did they conclude then? What did they attribute

that to?

A. Well, their explanation, which I think turned out to be

very prophetic for today, they concluded that, obviously, it

took they said three things for dicamba volatility to present

in the field, and one was sufficient temperature to cause

volatility, which summertime temperatures take care of that.

They said slow moving air, which basically you could relate that to a temperature inversion. And then they said time or length of exposure. And they felt like in the day that it took putting those three things together to see that difference in the field that they were -- that that lack of difference in the field that they were seeing in their closed chamber studies.

Q. Now, certain Defendants' employees -- now, I'm not sure if a BASF employee has testified to this, so I just won't represent that, but I know some Monsanto employees testified that in the studies done by academics after the product was released in 2017 the academics confirmed what Monsanto was saying about volatility. Do you agree with that assessment?

A. I do not.

Q. Could you tell the jury about what the low tunnel volatility trials were?

A. Well, in 2017 just to back up a little bit the -- all of a sudden the university scientists could test the product.

And most of them were wanting to test it to -- to satisfy the people in the state that they were from.

And so they did start doing a series of testing, and some of that was sponsored by industry. I mean, that's been pointed out. And I don't know what industry sponsored what studies, but there was industry support for it.

And in the low tunnel studies were a series of studies that were conducted, I believe, in over six states, and there were like ten of them.

Q. And what was -- what did those studies -- can you tell us just in two or three sentences what the design of those studies were?

A. What they did is like it might sound like it's a -- they built these what they call low tunnels. They were -- I don't remember whether they were 20 feet long, but they were fairly lengthy and just a hoop sort of, the hoop shaped, and

they were open on the ends.

And they -- they would place a tunnel over two rows of soybeans that were planted and growing out there. And then away from that area they would spray flats of soil with the different dicamba formulations, and then take those flats of soil and place them under those tunnels.

Q. And did those studies reach a conclusion about the real world volatility of the new formulations compared to other formulations?

A. But I think -- I would state it more like they started giving some pretty good indications that -- and what they would do is they would leave the flats of soil under there so long, and then they would take them out, and then take the tunnels off and then evaluate the soybeans for dicamba symptomology over time. And go ahead. And I may have -- I

lost part of the question.

Q. And what did they conclude?

A. Okay. What they concluded is -- is when they averaged over all of those studies that were conducted in different states by different scientists, they found a big difference in the DMA salt or the Banvel formulation that you've already heard about that they found more volatility with it, but when they compared the newer formulations -- Engenia, XtendiMax and Clarity that you've also heard, the M1691 or Clarity -- they didn't see any difference in those three herbicides -- the two new ones compared to Clarity -- when they used soybean as a bio indicator in those low tunnel studies. So that started giving them an initial look to say, okay, we need -- we need to go further.

Q. So the jury has heard -- heard information that least as to these Defendants' internal studies in their laboratories show a 90 percent reduction or so between the new ones from Clarity, the old dicamba, but in the real world studies here that difference was not shown?

A. In that set of low tunnel trials that -- that was

not

going out. When you strictly evaluated volatility based on

soybean injury letting the soybean plant tell you, then they

did not find -- they did not find a significant difference

between those three.

Q. Let's go to the next step in the testing post sale. The

Kaiser (Phonetic) Study. What was the design of the Kaiser

Study?

A. What Dr. Norsworthy wanted to do there was just take

things a step further to answer questions for our plant board

for one thing, and he conducted I thought a very simple --

well, the study was complex, but it -- it was also pretty

simple. And he was comparing XtendiMax and Engenia sprayed

over soybeans, and then measuring to see what happened.

Q. And what did he conclude?

A. Well, what he did he sprayed the -- he went out in a big

soybean field where the soybeans were already growing,

and he

just sprayed a three and a half acre block of each one of those simultaneously -- he used two sprayers and sprayed them simultaneously -- under label conditions, and then studied what happened over time in some pretty practical ways.

Q. And what did he conclude?

A. Okay. He concluded that volatility had to be playing a huge role in what he was seeing in his plots.

Q. And this is the same Dr. Norsworthy from the University of Arkansas that the jury heard a lot of criticisms about in his -- in Mr. Orr's testimony; right?

A. That's correct.

Q. You're familiar with him and his research from way back; right?

A. Very familiar.

Q. And what's his rank at the University of Arkansas?

A. He's a distinguished professor.

Q. And the jury heard a lot about Dr. Norsworthy's Proctor,

Tennessee study. And Monsanto counsel questioned Mr. Orr extensively on his -- about his written criticisms of that study. You're familiar with that study, aren't you?

A. It was actually Proctor, Arkansas.

Q. I apologize.

A. I knew that.

Q. How did I get that wrong?

A. Yes, sir.

Q. So the Proctor, Arkansas study, you're familiar with that study?

A. I am.

Q. What was the study -- well, first of all, before you get to the study design let's deal with the EPA issue.

You're familiar with Monsanto through Dr. Orr submitted written criticisms of this study to the EPA; correct?

A. Yes. They -- I've seen I believe it was eight but they -- seven. They raised seven points about that study to the EPA that they felt like that Dr. Norsworthy had done wrong, so to speak, and I would -- apparently in an effort to get the study disqualified or not considered by the EPA.

25 Q. And after considering Monsanto's criticisms, what did

1 the EPA do with Dr. Norsworthy study?
2 A. They considered the study on every point that was
3 raised.
4 Q. So what was the study design in the Proctor, Arkansas
5 study?
6 A. Well, again, it was -- it was -- and I -- the company
7 sponsored that study or had a lot to do with that study, and
8 it wasn't just that one. I mean, there were a series of
9 them that were -- that were conducted around the country.
10 Dr. Norsworthy just happened to have one of them.
11 And it was conducted to study off target. It was
12 conducted to determine what part of any off-target drift or
13 movement might be due to drift versus volatility was kind of
14 the main points and the main reason for conducting the study.
15 Q. And what conclusion did Dr. Norsworthy reach?
16 A. I mean, after he looked at -- I mean, there was a

lot of

talk about tarps. You know, they covered some plants with tarps, left some plants open for the tarps to protect against any spray drift. In other words, they covered some plants with tarps, made the spray application, and then removed the tarps after maybe 30 minutes, long enough for any spray particles to be moved off.

So that way if there was -- if there was injury underneath those tarps, then it would be reasonable to assume that was there because of volatiles moving and not spray

particles that were moving.

And what he concluded, and basically I saw his test, you couldn't tell the difference between the soybeans growing where the tarps were removed and the soybeans that weren't covered by the tarps.

So, I mean, his conclusion was the primary off-target mechanism of movement in that study was indeed volatility and

not physical drift.

Q. The jury heard testimony from Monsanto employees saying, well, since this research has been done since we sold it, you know, it's just confirmed our -- what we said that volatility isn't a problem. Has that view been accepted in the academic community?

A. Not at all.

Q. Does the academic community continue to express its deep concerns about volatility of these products?

A. Yeah, I mean, most -- the academic community has, in essence, just moved on from the argument is dicamba -- are the new formulations volatile? Are they volatile enough to move off target and affect vegetation? And they just essentially moved on from that argument that if sprayed according to the label, the compound is not going to move more than 110 feet down wind or whatever. They're just conducting their own research within their states to try to learn more about what's happening and see if we can figure

out a way to fix it.

Q. One final topic. Have you heard the phrase "defensive planting" over the course of your career?

A. I have.

Q. What does that phrase mean?

A. Well, it just means -- I mean, you know, some people are going to plant that technology because they want it. I mean, there's very much of a divide out there. There are farmers that very strongly want to use that technology. It is a very good weed control technology, the varieties are very good, but there are also other farmers that don't use it. They would prefer to grow a different kind of soybean.

And but if you're living in an area where you're surrounded by neighbors that are spraying dicamba, you just simply don't have much choice but to plant that -- their technology if you don't want damage on your cops. So that -- hence the term defensive planting. They're planting it to

protect themselves from their neighbors' damaging it.

Q. Did you raise this question of off-target movement and protection of sensitive crops with folks from Monsanto as the system was coming online?

A. Well, I raised the issue -- a lot of us raised issues with them in various conversations as we heard about the technology and as it was coming down the line and how are you going to manage the off-target issues that are going to be

inevitable? And the response was normally along the lines that everybody will plant our technology, and there won't be an issue.

Q. And was that a consistent message you received back from the Monsanto folks you talked to?

A. Yes.

Q. Have you used the phrase "all or nothing system" about this system?

A. I've used that phrase in a lot of articles since the --

since it became aware that it was finally going to be a commercial product that, yes, I've said it was an all or nothing technology. I also said both of those scenarios are bad in my opinion.

Q. Now, while soybean and cotton farmers can switch to Xtend seeds to protect themselves from dicamba damage, does a peach farmer have that option?

A. He does not.

Q. Thank you.

MR. RANDLES: That's all the questions I have.

THE COURT: Mr. Miller.

MR. MILLER: Do you want me to start, or do we need a break? I'm fine either way.

THE COURT: Why don't we start, and then we'll take one more break and go to around 5:00 o'clock. Is that okay with you-all?

MR. MILLER: If it may please the Court.

CROSS-EXAMINATION

BY MR. MILLER:

Q. Good afternoon, Dr. Baldwin.

A. Good afternoon, sir.

Q. Dr. Baldwin, you said towards the end of your testimony that when you go out to investigate something, if you don't see herbicide symptomology, you pass it on to somebody else because it's not your area at that point; correct?

A. I have done that.

Q. Yeah. And the primary herbicide symptomology that we're talking about in this case, as you showed the ladies and gentlemen of the jury in the pictures, is the leaf curling that you're saying was happening up at the top of the peach trees; is that correct?

A. That's one primary -- yeah, that would be the primary symptomology on the peach trees, yes, sir.

Q. On the peach trees. And I'm just going to focus for now on the peach trees.

A. And there are other trees that I looked at for that matter as well, but go ahead.

Q. But other vegetation around --

A. Yes, sir.
Q. -- all around the plant and -- or, excuse me, the farm.
And you would look at that herbicide symptomology to make

your determination as to your conclusion, your opinion, your
scientific opinion, as to whether it was dicamba that caused
the damage there?
A. I had done that.
Q. I'm sorry?
A. I had done that, yes, sir.
Q. If you didn't see herbicide, symptomology, as you just
described with the curling of the leaves, you wouldn't form
an opinion, and you might hand it off to somebody else;
correct?
A. Well, I mean, you're going to have to ask me more --
something more specific than that.
Q. Sure. You formed your opinion in this case, Dr.
Baldwin, that it was dicamba that was hurting the peach trees
at Bader Farms before you ever laid eyes on the first

leaf at

Bader Farms; isn't that correct?

A. I didn't totally form my opinion. I had a lot of opportunities to look at it later, but, yes, go ahead.

Q. Sure. Do you recall signing an affidavit in April of 2017 that you submitted to the Court under the penalty of perjury?

A. Yes, sir, I do.

Q. And in that affidavit you stated unequivocally that your opinion, based on your inspections at that point, was that it was dicamba that was causing the problems at Bader Farms;

correct?

A. I did.

Q. Let's take a look at that, please. Could we have that exhibit. I believe it's Exhibit M-113. And, Dr. Baldwin, is this the affidavit you submitted to the Court?

A. It is.

(Defendant's Exhibit No. M-113, Affidavit, was

identified.)

MR. MILLER: Your Honor, I move for admission of 113, please.

MR. ANDERSON: No objection.

MR. RANDLES: No objection.

THE COURT: Admitted.

(Defendant's Exhibit No. M-113, Affidavit, was received.)

BY MR. MILLER:

Q. And your first visit to Bader Farms was on February 14th of 2017; is that correct, Dr. Baldwin?

A. That's correct.

Q. And you submitted this affidavit to the Court a few months later. May 1st is when it was filed, but if we go to the signature page, you signed it under penalties of perjury on 4/27 -- April 27, 2017; correct?

A. That is correct.

Q. So that was four months or -- well, three months before

you made your next visit to Bader Farms?

A. That is correct.

Q. So from your first visit on February 14th until you signed this affidavit you saw nothing else at Bader Farms?

A. I did not.

Q. Okay. Let's go to page 6, please. And if we could blow up 23. And this is --

MR. MILLER: By the way, Your Honor, this exhibit is introduced for demonstrative -- sections of it are introduced for demonstrative purposes. I didn't say that when I put it in, but we're not submitting the entire affidavit into evidence.

THE COURT: That's fine.

BY MR. MILLER:

Q. In Paragraph 23 you told the Court, quote, "Bader Farms is located in Dunklin County, Missouri. On February 14th, 2017, I visited Bader Farms and conducted an inspection of its peach trees, row crops and other vegetation." That's what you said; correct?

A. I did.

Q. But actually on February 14th there wasn't any peach

tree -- at least any peach tree leaves to look at; correct?

A. That's correct.

Q. There were no row crops to look at?

A. Where row crops had -- were planted, but no live crops

to look at in the middle of the winter, no.

Q. So you couldn't inspect them, right, for herbicide symptomology?

A. No.

Q. And there was no other vegetation that you inspected;

correct?

A. No.

Q. And then you say, "In my opinion Bader Farms has suffered extensive injury from dicamba exposure;" correct?

A. I did.

Q. And you stated under oath, "The peach trees and other

crops at Bader Farms show clear signs of dicamba damage;"

correct?

A. That's the way it came out, yes, sir.

Q. Well, that's the way you wrote it, is it not, Dr.

Baldwin?

A. That's what it says.

Q. And you read it before you signed it; is that correct?

A. I read it.

Q. And you did not say anything to the Court in this April 27, 2017, affidavit saying I I think it might be -- I'm going to have to go back and check later when I can see actually herbicide symptomology. Nothing like that. You just stated definitively you had come to your conclusion; correct?

A. That's what it states here.

Q. Let's go on to Paragraph 23. No, that was 23. I'm sorry. Paragraph 25. And you told the Court to back up your opinion about your 40 years of helping farmers investigate, document and identify herbicide drift incidents; correct?

A. I did.

Q. And then you went on to Paragraph 26. You told the

Court that in your investigations you were relying on your
experience as a weed scientist; correct?
A. I do.
Q. And like many scientists you have a methodology that
you've developed over the years to come to your conclusions
and your opinions about things; correct?
A. That's correct.
Q. That's a common scientific approach is to have a set
methodology so that you know what steps you need to go
through so that your opinion at the end is valid; correct?
A. I don't know that it's a set methodology, because it
kind of changes from case to case, but, yes, there is a
methodology.
Q. Certainly. So there's a methodology that you use as
you say to investigate herbicide drift incidents; correct?
A. That's correct.
Q. And then you explained your methodology to the Court

stating that your methodology begins with symptomology, examining the symptoms in the injured plant, nutrient status of the plant and signs of crop stress or insect damage in the plant; correct?

A. I did.

Q. And then you said next I investigate the visual appearance of the field and search for indicator plants and patterns in the drift damage in the environment within and surrounding the affected area; correct?

A. I did.

Q. Then you say, "Once I determine what the cause of the damage is and level of damage, I offer treatment solutions;" correct?

A. In a lot of investigations, yes, sir.

Q. And you did not follow this methodology when you came to your conclusion in April of 2017 that you submitted to the Court that the problems that Bader Farms were caused by dicamba; correct?

A. I followed it as extensively as I could at that time frame on, what was it, Valentine's day of 2017.

Q. Well, you didn't look at that kind of

symptomology.

You said your first thing it begins with symptomology. You didn't look at that kind of symptomology on February 14th; correct?

A. I looked at something that I related to symptomology.

I did.

Q. You did not look at that kind of symptomology that you were talking about there; correct?

A. I don't know what -- I don't know what you mean by what kind of symptomology I was talking about here. There's a lot of different kinds of symptomology.

Q. Okay. Can we play clip -- you've been deposed in this matter, haven't you, Dr. Baldwin?

A. I did.

MR. MILLER: Can we play clip 62. And I would ask the jury to see it, Your Honor.

MR. RANDLES: I have no objection.

(Clip 62 was played for the jury from the

videotaped deposition of Dr. Ford Baldwin as follows:)

Q. "Let me know how you were able to look at the symptomology on February the 14th of 2017."

A. "Well, I didn't look at that kind of symptomology on February 14th of 2017."

Q. And the next thing you say in your affidavit is that you look at nutrient status. You did not look at the nutrient status of the plant; is that correct?

A. I did not.

Q. In fact, you haven't done that to this day. You haven't looked at the nutrient status of any of the peach trees at Bader Farms; correct?

A. I've reviewed the soil tests. I have done that, yes, sir.

Q. And you said that you would look again -- the next thing you would look for signs of crop stress or insect damage; correct? That's your normal methodology; is that right?

A. Okay.

Q. And you did not do that before you came to your opinion that you submitted to the Court; correct?

A. Not that exact thing. That was not what I used, no, sir.

Q. Now, you were at Bader Farms for about three or four hours on February 14th, 2017; is that correct?

A. On that particular day.

Q. I'm sorry?

A. On that particular day, yes, sir.

Q. And you observed more fields by driving than by walking through them on that visit; correct?

A. Yeah. We walked fields, but we also drove a lot. I would say, yes, that's a fair statement.

Q. About how many acres did you cover in those three or four hours, do you recall, Dr. Baldwin?

A. I don't know. We went in a lot of different orchards I can tell you that. The exact how many acres we covered I don't know that.

Q. And you didn't take any measurements on any quantitative

data of any sort that day, correct?

A. I didn't take my measurements, but I took some very definite observations. I did.

Q. Not of any foliar leaf symptomology; correct?

A. Not foliar leaf symptomology, no.

Q. What observations did you make?

A. Basically looking at comparisons of fruity wood or maybe this bud wood, whatever they've called it, but actually I was just getting an overview. I went up there not expecting to see a lot of anything.

And I just -- and Mr. Bader started pointing out fruity wood differences, very short fruity wood with few nodes on it compared to longer fruity wood with a lot more nodes on it. And I started picking up a pattern in that between protected and unprotected areas.

Q. And so it looked like a drift pattern to you?

A. If I used that as a metric, it looked like it could be a drift pattern, because it was -- it was in the protected

areas that anything that would have been protected from the south, the fruity wood was much longer and what he described as much more normal.

When I got into open areas, all of a sudden the fruity wood became very short, and that was consistent a lot across several different orchards we looked at.

Q. And you did not know before you set foot on Bader Farms

what normal fruity wood growth would be; correct?

A. That's correct.

Q. And you took all the information you got from Mr. Bader on that; is that right?

A. I did. On that particular day. I did.

Q. And you know that a variety of things can cause a difference in the fruity wood like, say, a lack of water from one year to the next?

A. I've been told that, but, again, I was picking up a very definite pattern between protected areas and open areas within the same orchard and almost side by side, and -- and

that made an impact on me. I also had a lot of information before I ever went up there as well that I did take into consideration.

Q. Well, that was what you say you saw in the other areas; correct?

A. Well, part of it was what I saw from Kevin Bradley's presentation to start with, but then the other thing, yes, is what I observed in the areas very close to Bader Farms that I felt like there was a high percentage chance that his farm had been exposed to dicamba when I went up there.

Q. And you told the ladies and gentlemen of the jury as you were driving there you came to the conclusion basically that this was going to be dicamba; correct?

A. No, I did not do that at all.

Q. Now, the fruity wood, are you saying that that's a symptom -- you're not saying that the fruity wood is of the tree of the -- or nothing -- anything on the wood of the

trees was a symptom that you attribute as a direct effect to an auxin type herbicide; correct? You're not saying that?

A. No. It was just a metric. The differences that I was observing was just a metric that said if I consider that to be herbicide injury, I'm picking up a very definite pattern like I would pick up in a lot of other patterns in things that I've looked at.

Q. Now, the other thing you said close to that time in your testimony today is that one of the things you do is eliminate other potential causes; correct?

A. To the extent that I can, yeah. Okay. Go ahead.

Q. And you didn't do that on February 14th prior or at all before you submitted the affidavit to the Court stating your definitive opinion; correct?

A. Oh, basically I took into account the things we've talked about when I came to that conclusion.

Q. What I'm asking you, Dr. Baldwin, is you stated in your testimony in direct that what you normally do is rule out other causes, you didn't do that here before you swore

that

this was dicamba damage; correct?

A. On that particular day there wasn't a lot of causes that

I could rule out, no.

1390

Q. So you didn't investigate whether herbicides were being

used in the orchard; correct?

A. I pretty much knew -- I knew what herbicides he was

using in the orchard, yes. I mean, we talked about his weed

control program. We talked about a lot of things.

Q. On that day?

A. On that day.

Q. And you weren't aware that at that time that they had

already been hit previous years with damage from 2,4-D on the

peach orchard? You weren't aware of that in February of

2017, were you, sir?

A. I do not recall whether we had that discussion or not.

You're talking about the 2015?

Q. Yes, sir.

A. I do not recall whether we had that discussion on that particular day or not.

Q. So when you made your conclusion, you were not aware that there had been previous 2,4-D damage on that orchard; correct?

A. I can't say for sure that I was, that's correct.

Q. And 2,4-D is an auxin herbicide as well; right?

A. It is an auxin herbicide.

Q. And if you have enough 2,4-D, it can cause the same symptomology that you observed with the fruity wood in February of 2017; correct?

A. I don't know that.

MR. MILLER: Could we play clip 85, please.

And can we show that to the jury, Your Honor?

THE COURT: Yes.

(Clip 85 of the videotaped deposition of Dr. Ford Baldwin was played for the jury at this time as follows:)

Q. "It caused the same symptoms you allege that you observed in February of 2017?"

A. "If you put enough."

Q. I will submit to you that we missed the first line of that, but it was being asked about 2,4-D?

A. That's a little different answer, though, because, I mean, we do know that peach is much more tolerant to 2,4-D than it is to dicamba, so that would -- that was the reason I answered "If you put enough," and I guess if you put enough, you could see that symptom.

Q. And I believe that was the question I asked you, Dr. Baldwin, but if I left off the "if you use enough" I apologize.

And the 2,4-D damage can look fairly similar to dicamba damage in trees; correct?

A. It can look -- the symptomology itself can look similar.

Q. You also know that glyphosate will hurt peach trees if it has enough on its leaves; corrects?

A. It can.

Q. And you could not rule out glyphosate or glufosinate

damage in February of 2017 before you wrote up your affidavit; correct?

A. At that particular day I would say no.

Q. There were a variety of other potential causes that you could not rule out before you came to your opinion that you submitted to the Court; correct?

A. Repeat the question, sir.

Q. Sure. You didn't consider other pathogens as a possibility for what you saw in February of 2017 before you signed your affidavit; correct?

A. There was only so much I could consider on that day.

Q. You didn't rule out heat as a possible cause of what you saw --

A. Ruling out heat?

Q. -- in February? Yes.

A. I mean, I don't know whether I ruled it in or out. I mean, it gets hot every summer. I mean, it -- heat is not something that would have been very high on my radar screen to rule out one way or the other.

Q. And, as you said a number of times here, you couldn't do

any of those things, but you didn't list any of that that you couldn't do what you normally do in your affidavit; correct?

A. That's correct.

MR. MILLER: Do you want me to move on to another

topic, Your Honor, or should we keep going?

THE COURT: Why don't we take another quick recess. And I'd really like to try and finish this witness today. So I may go a little after 5:00 unless someone has some urgent problem otherwise.

So let's take a 10-minute recess, and we'll call you back shortly.

Remember the admonition.

(Proceedings stood in temporary recess.)

(Proceedings resumed in open court.)

THE COURT: Please be seated.

Mr. Miller.

MR. MILLER: Thank you, Your Honor.

BY MR. MILLER:

Q. Dr. Baldwin, I want to go over one topic very

quickly I

think just to make sure, as you said, you're not a peach

expert; correct?

A. I'm not a peach expert in the true sense of the word.

Q. And your education and training did not include peaches

at all; correct?

A. Training wise. I mean, other than just some of the

basic college courses you would take that would deal with

some of that, but --

Q. And your career with the extension service did not

involve peaches; correct?

A. Only to the extent of keeping the herbicide

recommendations for using peaches up to date, I did have that

responsibility.

Q. Well, in fact, you never made recommendations to anyone

about proper weed control in peach orchards, have you?

A. I've been doing this 45 years, and I can't remember

every phone call that I've ever received, but the second half

of -- well, more than the second half of my career we had another weed scientist that handled that area, but in the first part of my career, I mean, basically they're all the same herbicides that we use in other crops. I would have been totally comfortable to do that.

Q. I'm asking you, sir, if it's true that you never made a recommendation to anyone on proper weed control in peach orchards?

A. I'm not going to say it's true. I can't remember.

Q. Okay.

MR. MILLER: Let's play clip 113, please. Can we show that to the jury?

(Clip 113 of the videotaped deposition of Dr. Ford Baldwin was played for the jury at this time as follows:

Q. "Have you ever made recommendations to anyone on proper weed control in peach orchards?"

A. "Not that I recall."

Q. And prior to going to Bader Farms in February of 2017,

you had never worked with peaches; correct?
A. That is true.
Q. And, Dr. Baldwin, you can have -- well you talked a little bit about species. I think Mr. Randles has asked you about species. And just so we get our terminology right, a species at the bottom is sort of the ranking of things is what the individual object is. A peach tree is a particular species. A soybean is a particular species; correct?
A. That would be true.
Q. And then the next level up is called a genus; right?
A. That would be true.
Q. And so those are things that are not the same plant, but they're very closely related; correct?
A. That would be reasonable.
Q. Did I get that right? And it's true that even in the same genus you can have different effects of the same herbicide?
A. That's absolutely true.
Q. And, in fact, whether dicamba damage looks similar

to

2,4-D damage or not depends on a particular species. You'd agree with that?

A. That would be a reasonable statement.

Q. Now, you talked about testing for dicamba, and you explained why you didn't test for dicamba here, and you said you didn't want to get false negatives; is that correct?

A. That would be one way to put it.

Q. But I thought that was what your testimony was?

A. I did testify to that.

Q. So you were concerned that you would get a negative result, so you decided not to take the tests; is that right?

A. No. I was pretty confident I would get a negative result, and then I would be up here trying to defend negative results instead of not pulling the samples.

Q. So now you did not take any samples from the orchard; correct?

A. I did not.

Q. And you know that people do test for leaf residue; is
that right?
A. It can be tested for.
Q. And you're aware that samples were taken from Bader
Farms in both 2015 and 2016; correct?
A. I heard that.
Q. And you're aware that the State -- now, the jury has
heard that when the State took samples in 2015 they found
dicamba in the leaves along with 2,4-D and Flumioxazin?
A. I heard that.
Q. Now, you've worked in other cases as an expert, where,
in fact, tests have been taken for dicamba, and they found
dicamba in the plants; correct?
A. Refresh my memory.

Q. Sure. You worked in a case called Keller Farms v.
McGarity Flying Service?
A. Oh, I did.
Q. And that was an alleged dicamba drift case; correct?

A. That was one of the -- yeah, it was a mixture of herbicides, but dicamba was one of them.

Q. They found dicamba in the tree leaves there, didn't they?

A. They did.

Q. And in fact, when you made your opinion in that case, you found that the fact that they found dicamba in the tree leaves was very significant; correct?

A. It is significant if you find it.

Q. And you said in that case that the issue the people were having with not getting positive dicamba results is that they were waiting two to three weeks to sample because the dicamba leaves the plant very quickly, and they were waiting too long to take the sample; correct?

A. That's typically the case, yes.

Q. And here you would agree in this case because the allegation is the dicamba is coming in all the time if you were to have taken a sample every day in the orchard for a few weeks, you would have had samples that would prove dicamba is coming into the orchard; isn't that correct?

A. If you sampled every day, knowing, yeah, when it

happening, if possible, you could find dicamba.

Q. Well, actually you would have -- I think your testimony was you would have samples that would prove it; right?

A. That's possible.

Q. But you didn't try that, and you didn't suggest that Mr. Bader do that?

A. I did not.

Q. Now, you know that the FDA came in and tested the peaches in 2016; correct?

A. I heard testimony of that, yes, sir.

Q. You're aware that they found no dicamba in the peaches themselves; is that correct?

A. I'm aware of it.

Q. And dicamba is an auxin herbicide. We've already heard that; right?

A. Yes, sir.

Q. And it goes to where the tree is basically growing, the new growth of the tree. It's primarily how it works. Is

that how -- I know I'm simplifying it, but is that fair?

A. Repeat.

Q. Sure. An auxin herbicide like dicamba -- because of the reason you see the new growth is it will -- once it gets into the tree, it goes to the newest growth, it goes to where the tree is growing?

A. It -- it does that. I mean, it moves -- it can move

upward and downward, but it typically is going to go to the new growth.

Q. And you're familiar with the term sink and source; correct?

A. I am.

Q. And a sink in a tree or plant is something where the earth's chemicals in a plant are going like a sink collecting things; correct?

A. That's true.

Q. And in a tree like a peach tree the sink during the different times of the year will change?

A. That's true.

Q. For example, when the trees -- I'm sorry, I didn't mean to interrupt you.

A. I'm sorry.

Q. Quite all right. When the tree is dormant over the winter, the sink is going to be down to the roots, everything goes down to the roots; correct?

A. That's correct.

Q. And when the buds start coming up, the sink is the buds, everything starts going to the buds; right?

A. Starts moving up that's for sure into the plant.

Q. And when the leaves start coming up, those are the sink, that's what starts collecting everything?

A. That would be -- it depends on when it gets on there,

but, yes, that would be -- that would be a sink.

Q. And when the peaches start to grow, they become a sink to start collecting everything in the tree; correct?

A. They would become a sink.

Q. And when they tested the peaches at Bader Farms, they found nothing; correct?

A. If they found nothing, that's what they found.

Q. And are you aware that the Baders have taken samples from their trees and kept them in the freezer and not had them tested?

A. I'm not aware of that.

Q. By the way, another way of testing for the presence of dicamba is through air sampling; is that correct, sir?

A. I mean, you can test for it that way. I mean --

Q. And, in fact, all these tests that we've talked about, the GLP tests, the academic tests, and all that, they're not taking -- in a lot of cases they're not taking leaf samples they're taking air samples and then determining if there's dicamba; correct?

A. Well, they're doing a lot of both. I mean, yes, they are taking air samples. They're using foliage samples. They're using a lot of different things.

Q. Now, I believe you said that your theory is -- one of the parts of your theory here is atmospheric loading, which

25 I'll get to a little later; correct?

1 A. Yes, sir.
2 Q. And what essentially, if I understand it correctly, what
3 you're saying is there's so much dicamba being sprayed that
4 it's just building up in the atmosphere; is that fair?
5 A. Well, it's not building up in the atmosphere over time
6 as much as it would just be accumulating in particular
7 temperature inversions and moving laterally in the atmosphere
8 until that inversion dissipates, yes, sir.
9 Q. And we'll get to the temperature inversions. I
10 appreciate you bringing that up. I'm not sure if I'll get to
11 it next, but I'll get to it. But there was no attempt that
12 you're aware of at all either by you or anybody else working
13 with Plaintiffs to do any air sampling out of Bader Farms to
14 see if there's dicamba in the air at any point; correct?
15 A. I think that was beyond the scope of what we would be
16 able to do.

Q. You as a weed scientist wouldn't be able to do that?

A. I mean, I don't have the equipment. I didn't have the time to spend up there. No. That's something that went beyond the scope of what I would be comfortable doing.

Q. I see. But so that would be something that you would refer off potentially to another weed scientist or another researcher who could be able to come up with the equipment and do the air sampling; is that right?

A. If there were air sampling going to be done, it could be

done by somebody better than me. It could have been done by the companies.

Q. And I want to move on to a different topic here, Dr. Baldwin, and that is the sale of the Xtend seeds. And we saw the maps that counsel put up for you with the little balloons I think you called them all over it?

A. Yes, sir.

Q. All right. And I just want to make clear, and I know you testified to this, but I just want to make sure that it's clear, you're not testifying, you're not stating that those balloons show where the seed was planted; correct?

A. Not the individual field, no.

Q. And you heard -- you're aware of the testimony from Mr. Starling in this case that the shipping address can be in a different state or several -- even in some cases several states away from where the seed actually ends up; correct?

A. I heard that testimony, but I believe that that would be exceptions.

Q. And you haven't done anything to try to find out where the seed here was particularly placed; correct?

A. Where any individual bag -- any individual bag into any individual field, but it's common knowledge that whole area was being planted to dicamba. Those seeds were going somewhere.

Q. Well, I understand you're saying it's common knowledge,

Dr. Baldwin, but I want to talk about specific evidence.

A. Yes, sir.

Q. Okay.

A. Yes, sir.

Q. So the specific evidence you have is you do not have any evidence of where any of those seeds were actually planted; correct?

A. That would be a fair statement.

Q. And you did not take into account the other possibilities for where the seed went like any of the seed being stored for the next year, for example; correct?

A. I did not.

Q. Now, I believe you said in your examination when Mr. Randles showed you the maps with the little balloons on it for the sale addresses -- and I think I got it down right -- that what you really would have liked to have seen is records showing where dicamba was sprayed; correct?

A. That would have been ideal.

Q. And farmers do keep spray records of what herbicides they spray; correct?

A. They're supposed to.

Q. In fact, the jury has seen some of those from Bader Farms in this case. You're aware of that?

A. Yes, sir.

Q. And you haven't seen any spray records here, so you

can't say any specific field where a farmer has sprayed dicamba anywhere around Bader Farms; correct?

A. As far as a spray record for a specific field, no, sir, I have not.

Q. And, in fact, you haven't looked at any spray records for fields planted around Bader Farms, and as far as you know nobody else has either; right?

A. I didn't have access to those.

Q. And you didn't try to talk with any farmers or confirm what anybody is applying in that area; correct?

A. I didn't really feel like I needed to, but, no, sir, I did not.

Q. Now, you're aware you said I believe that in 2015 and

2016 when the first Xtend cotton was sold and the first Xtend soy was sold that it was inevitable that people were going to spray old dicamba over the top I believe you testified to?

A. It sure wasn't a surprise to me.

Q. Now, you know that people have purchased Xtend seed even during that period of time and did not spray dicamba over the top of it; correct?

A. I'm aware of that. I made some of those recommendations in the past years.

Q. In fact, in your testimony earlier you made a differentiation between Xtend cotton and Xtend soy as far as the attributes that those seeds have; correct?

1405

A. I did.

Q. And you said with Xtend cotton there was another trait, there was glyphosate resistance; right?

A. Yes, sir.

Q. And then there was glufosinate resistance; correct?

A. Yes, sir.

Q. And that was the first time that appeared on a Monsanto product --

A. On a Monsanto product, yes, sir.

Q. And you also said that it had -- it was -- those were linked with the better germplasm for the Monsanto seed; correct?

A. Yes. They did have very good germplasm.

Q. And so I believe the indication from you was well somebody could use glufosinate over cotton; correct?

A. Yes. Over --

Q. Xtend cotton?

A. Yes, sir, they could have. I mean, I would have loved to have seen it marketed that way.

Q. So they had a reasonable opportunity -- any of the farmers who had purchased Xtend cotton in 2015 and 2016, they had a legal alternative that they could use; right?

A. They did.

Q. Now, your indication with soy is the only resistant trait was glyphosate; correct?

A. Well, in addition to the dicamba.

Q. Correct. But the only legal trait in 2016 was glyphosate resistance; correct?

A. I'm not sure I'm following your question.

Q. I apologize. Let me try it again. In 2016 Xtend soy came out; correct?

A. Yes, sir.

Q. And it was tolerant to both glyphosate and dicamba; correct?

A. Yes, sir.

Q. But it was illegal to spray any dicamba over the top of it in 2016; correct?

A. It was.

Q. Now, you note, and you indicated therefore I think you were implying that, well, anybody who bought Xtend soy must have been spraying dicamba if they wanted to get rid of pigweed. Is that what you were trying to get across?

A. That would in my opinion have been the primary reason if they had -- if they had a serious Palmer amaranth problem, and they wanted an alternative to the LibertyLink technology, and they planted Xtend seed, yes, in my opinion it would have

been to spray it with dicamba.
Q. But, in fact, you know quite a few people who had dicamba-tolerant soybeans and did not spray them with dicamba; correct?

1407

A. If you got out of the Palmer amaranth country, that was very typical, and I made a lot of those recommendations where people liked the genetics.
Q. Well, I understand you made recommendations, but you know a lot of people who actually had the dicamba-tolerant seeds and did not use dicamba over the top; correct?
A. Outside of the heavy Palmer amaranth areas, yes, sir.
Q. Now, you have been involved in other cases where you have done further investigation to look into spray records to see if there's evidence to show that somebody nearby used dicamba; correct?
A. Refresh my memory.
Q. You were an expert in the Burge v. Dawson case; correct.

A. Yes, sir.
Q. And Mr. Dawson claimed that he did not spray dicamba;
correct?
A. I don't remember a lot about that case, but --
Q. Well, do you recall that you looked at the herbicide
purchase records in that case?
A. If they were there, I'm sure I looked at them, but I
don't recall that specifically.
Q. Okay. Could we take a look at -- and this is not video
recorded, because this is from a previous deposition in
another case that I don't think they videoed it.
A. They did not.

1408

MR. MILLER: Can we see Burge Number 7, please.
Burge. B-u-r-g-e. I have no idea if I'm pronouncing that
correctly.
THE WITNESS: It's Fred Burge, B-u-r-g-e.
BY MR. MILLER:
Q. Is it Burge?
A. Burge, yeah.

Q. Number seven, please. And can we zoom out a little bit so we can see Dr. Baldwin's testimony. I apologize.

It's a rather long answer, but I'm just going to go with line 16 to 21. And you say, "They bought very little dicamba -- straight goods dicamba in 2015. And then when I looked at their records in 2016, they bought like 1,056 gallons of straight goods dicamba on like maybe the 9th of April;" correct?

A. It is.

Q. And that -- you went to that evidence in that case to help support your opinion; is that right?

A. I did.

Q. You did not do any such thing in this case; correct?

A. I didn't have access to those records in this case -- I mean, to any records in this case.

Q. Well, you're aware that -- that in any litigation the attorneys can send subpoenas and get records from any potentially relevant person in the case, you're aware of

that, aren't you?

A. I don't know all the ins and out of that. I didn't ask for those records in that case. They were just produced to me as part of the evidence.

Q. Now, you would agree that it's legal to use dicamba over the top of other crops besides soybean and cotton even before its density; correct?

A. If it's registered in that crop, yes, sir.

Q. You can use it over corn?

A. Yes, sir, at certain times.

Q. You can use it over Milo?

A. Yes, sir, at certain times.

Q. You can use it over wheat?

A. Yes, sir.

Q. You can use it as a burndown?

A. Yes, sir.

Q. You can use it in pre-planting; correct?

A. I mean, excuse me, are you making a distinction between pre-planting and burndown? I mean, I would --

Q. My apologies. You can use it, for example, as burndown pre-plant over a soybean field?

A. Pre-plant in soybeans, yes.
Q. Okay.
A. Are we making a distinction now between non dicamba soybean and dicamba soybean?

1410

Q. No. I'm saying for any soybean pre-plant.
A. You can. Legally you can use it. The labels read differently, but it can be used.
Q. And your testimony before was in the area we're talking about, Dunklin County, they can plant soybeans all the way up to July; correct? You testified to that earlier?
A. It depends on the year. I mean, that's not typical, but that would be a range of planting.
Q. So it was legal even before Xtend seed came out to, for example, in a soybean field that's being prepared in Dunklin County if they're going to be planting late that year, they could have sprayed dicamba over the field as a burndown all the way into July; right?
A. It would have been legal, but that would have been

a

huge mistake.

Q. Now, you don't know how many acres of corn are planted within 10 miles of Bader Farms; correct?

A. Not exactly. I do know there's corn planted.

Q. And you don't know how much is even within one mile of Bader Farms; correct?

A. Not to the exact acre, no, sir.

Q. And you can't distinguish -- you cannot distinguish dicamba -- when you look at the symptomology, you can't distinguish whether the dicamba that you believe is there came from a spray over soybean or cotton or corn or some

other application; correct?

A. Not by just looking at symptomology.

Q. And you didn't do anything to determine whether the damage to the peach fields that you say came from dicamba came from a cornfield or some other source other than Xtend seed; correct?

A. That would be correct.

Q. And we've talked about trying to figure out where the Xtend seed was planted. You actually could have figured that out, you could have figured out what fields were planted with Xtend seed in 2016, '17 and '18 with a little effort; correct, Dr. Baldwin?

A. It would have been a hell of a lot of effort if that was possible. It wouldn't be with a little effort.

MR. MILLER: Could we have clip 140, please.

(Clip 140 from the videotaped deposition of Dr. Ford Baldwin was played for the jury at this time as follows:)

Q. "If I give you a map for 2016, 2017 or 2018, would you be able to show me a field that was planted with Xtend traited soybeans or cotton?"

A. "With a little bit of effort, yes. Probably not sitting right here, no. But with a little bit of effort and a little bit of homework, yes, I could."

Q. And you didn't do that little bit of effort and little

bit of homework, correct, Dr. Baldwin?

A. Well, in the context he put that in he asked me about a single field, and the way I answered that question from when I looked at those soybean fields in 2016 that we discussed for those four farmers up there, if I had to have taken a map and spent enough time looking at where I looked at a soybean field and the cotton right across from it that I know was sprayed, yes, on one or two fields I could have probably done that.

Q. And then we would have as opposed to the balloons and differences between shipping addresses and planting addresses we'd have solid clear proof that this particular field was planted as Xtend; right?

A. Maybe one or two fields.

Q. So with the data you've collected you cannot name a farm or a grower or an applicator -- an applicator where dicamba moved from that source off target to Bader Farms; correct?

A. From that particular source, no. I just simply considered it on a much more holistic approach.

Q. Now, I want to talk a little bits about the difference between drift and volatility.

A. Okay.

Q. The jury has heard this, so I'm going to try to not to belabor any points here. But off-target movement is characterized basically in two different ways, primary versus

secondary; correct?

A. That would be fair.

Q. And a primary movement is also known as physical drift; right?

A. That's the primary -- that's a play on words. That's the main way of primary movement would be physical drift.

Q. And physical drift is when the herbicide never really hits the target. It's sprayed out because of wind or whatever it gets blown off essentially?

A. Well, part of it does. I mean, you know, it doesn't

get all blown off, but, yes, physical drift is mostly wind movement of spray particles from where the application was made to somewhere downwind.

Q. And secondary movement comes after the herbicide gets on the target plant and then something else causes it to move off; correct?

A. Secondary movement is something that in laymen's terms I would say happens after the sprayer leaves the fields, yes.

Q. And that can happen in a variety of ways; correct?

A. It can happen in a variety of ways.

Q. You talked about water runoff; correct?

A. That would be a very minor one, but, yes, it can happen.

Q. Now, here the concern that you're raising is not from physical drift with dicamba, but from dicamba's volatility; correct?

A. Well, I mean, it all makes a contribution. In my opinion it's more volatility than physical drift, but all of

it can make a contribution.

Q. Well, but here your concern is dicamba's volatility?

A. Well, my concern is just dicamba off-target movement and all of the things that make that up.

Q. Well, any herbicide can drift; isn't that right?

A. Yes, sir. Any herbicide can drift.

Q. I'm sorry, go ahead.

A. I just had a farmer tell me one time that buckshot could drift if the wind was blowing hard enough.

Q. I was just about to ask that if you've testified before that buckshot can drift.

And any herbicide label provides warnings about drift; right?

A. It does.

Q. And you're not aware of a herbicide label that does not warn about drift; correct?

A. No. That would be true. They all do.

Q. And you believe that the uniform landscape damage that you say that you saw at Bader Farms was due to volatility; correct?

A. I believe that the landscape damage I've seen throughout

Eastern Arkansas and which would -- and the Bootheel of Missouri, which would include Bader Farms, yes, has -- that

there's much more of a volatility component to that than a physical drift component to that.

Q. I appreciate that. But we're just talking about Bader Farms here. And I just want to solidify that you believe, based on your report, according to what you said in your report, you believe that the uniform landscape damage that you saw in Bader Farms was due to volatility; correct?

A. The uniform landscape damage in my opinion was.

Q. Now, the difference between a volatility landscape effect that you say you saw and a drift is that with drift, as you mentioned before, you could have an identifiable drift pattern; correct?

A. You can.

Q. And it changes with a degree of injury radiant I think is one of the terms that's used; is that right?

A. That's one of the ways it can change. It can also

change due to protected areas or other kinds of things that would cause it to leave a pattern, but there's normally a gradient.

Q. And that's called a herbicide drift pattern? That's what you look for when you're looking for a physical drift case?

A. That would be the case. That would be true.

Q. You would agree that it's primarily the responsibility of the applicator not to allow drift to occur; is that right?

A. As far as physical drift goes, yes, I agree that's -- that part is the responsibility of the applicator.

Q. And sometimes unfortunately we're all human, or fortunately we're all human, sometimes applicators mess up and drift occurs; correct?

A. I've walked a lot of fields where that's happened.

Q. Now, although you say that the landscape injury at Bader Farms was due to volatilization when you actually visited

Bader Farms in February 2017 when you came to your conclusion
you saw a herbicide drift pattern --
A. I did.
Q. -- right?
A. I saw a -- that drift could have also been drift of volatiles, but I did see an indication, yes, of a drift pattern.
Q. A herbicide drift pattern?
A. Yes, sir.
Q. And now you're saying that a drift pattern also could be due to volatility?
A. Yeah, you can get a drift pattern. You can get a pattern due to volatility, sure.
Q. So you can have volatility -- now, your testimony is you can have volatility it can either result in a pattern, or it could result in a landscape effect? Is that your testimony?
A. Yes, sir.

Q. Now, volatility is a conversion from a liquid to the gas

that we're talking about; right?

A. Either from a liquid or a solid to a gas, but it is a conversion to a gas, yes, sir.

Q. Now, it's converted from a liquid to a gas with herbicides -- with these herbicides; correct?

A. Not necessarily. Because if the -- if it's volatizing from the spray droplet itself, it would be volatilizing from a liquid, but if it's volatilizing after the spray droplet is dried on the plant, then it would be volatilizing from a dry form.

Q. And we've talked about DGA dicamba, Banvel you agree is more volatile than XtendiMax or Engenia; correct?

A. The initial volatility certainly is, yes.

Q. I'm just asking straight volatility, Doctor.

A. I would say it's more volatile than the others.

Q. Okay. Thank you. Volatility is based on vapor pressure; is that right?

A. Yes. All -- everything has a -- most things have a vapor pressure rate number, and, yes, it's based on vapor pressure.

Q. And it was said before on the volatile part, and I think

somebody else has testified the volatile part of dicamba is actually the acid parts of the dicamba; is that right?

A. It is the parent acid form, yes, sir, or the acid form.

Q. And the salt part of the dicamba is not volatile; correct?

A. That's correct.

Q. And so what happens is if something volatilizes, if dicamba volatilizes, basically the salt boils away, leaves the acid, and the acid can volatilize; correct?

A. Well, it doesn't boil away. I mean, it -- the salt disassociates. The salt portion of that molecule disassociates off. It leaves an anaheim. And then when that anaheim hydrogen, the salt -- the parent -- or the acid is formed, and that is the part that's volatile.

Q. And are you aware that volatility is going to be linked to the boiling point of the salt, or do you know?

A. No. That would not be what I would associate it with.

It would -- I mean, it would be associated with -- I mean, it would occur because of disassociation of the salt from the parent molecule. I would not characterize that personally as boiling off, but --

Q. Now, I want to talk with you about -- we talked about temperature inversions, or you talked about temperature inversions, and it came up a little bit in your cross-examination while we're talking about volatility. First of all, volatility itself does not cause off-target movement. It's not exactly the same thing; is that right?

A. Well, it depends on where it goes after it volatilizes.

Q. Exactly. Something could volatilize up off the plant in very stable air, stay right there and then precipitate back down onto the same area; correct?

A. That would not be likely in my opinion for it to pick up and sit there and sit back down. I think that would be highly unlikely.

Q. It could move a little bit, but still not have off-target movement to another field; correct?

A. I mean I guess anything is possible if you want to do the hypothetical thing, but -- and, again, volatility off of one area or one small plot or one small field is that within itself may not cause a lot of issues. It's when you put a huge acreage of that together, it's where volatility really starts to become a huge issue.

Q. What I'm asking you, Dr. Baldwin, is you're not testifying that once something volatilizes, it's immediately going to be an off-target movement effect?

A. No, it's not. I mean, if it happens to volatilize in stable -- in unstable air where you have normal thermal mixing, I mean, it can go up like smoke goes up and exhaust out the atmosphere.

Q. And that's why you start talking about temperature inversions when there's not a temperature inversion around even if it's volatilized if it's a normal air rising and it's going to go up and dissipate into the atmosphere; is that

correct?

A. It can. I mean, but it can also move A to B in the wind in some of those scenarios, too. In other words, when it's sprayed and the wind continues to blow toward a susceptible crop, you can get volatiles moving in the wind, or they may exhaust out the atmosphere.

Q. And the reason you were talking about temperature inversion is you said it acted as a cap to keep the volatiles from whatever there might be from dissipating up into the atmosphere; correct?

A. Yeah. Any time -- any time I would have observed landscape damage from a herbicide and there have been others it is always associated with stable air or temperature inversions.

Q. Now, your theory here is that dicamba volatilizes over several days and is collected in nighttime inversions to create a landscape effect; correct?

A. Well, there's no doubt in my mind that the volatility

collecting in inversions is what is causing the landscape effect.

Q. Well, let me repeat, your theory here is that dicamba volatilizes over several days and is collected at nighttime inversions to create a landscape effect; right?

A. I mean, it can collect in more than one inversion. I mean, if it's volatilizing over 96 hours, it has more than

one opportunity for -- to be trapped in an inversion.

Q. Well, and let's talk through the inversion cycle. The inversion usually will start late in the day when the sun is going down; correct?

A. That's correct.

Q. And it can stay there through most of the night; correct?

A. Sure.

Q. Or the entire night; right?

A. It can.

Q. And then the sun comes out and warms up the air, and the

inversion dissipates I think you said?

A. That's correct.

Q. So you've got a cycle. And when the inversion dissipates the next morning, you don't have any cap holding anything there anymore, do you?

A. No. That part of the volatility that's trapped in that inversion when the inversion goes away then it's going to go somewhere it's either going to move with the wind or it's going to exhaust out the atmosphere.

Q. So we don't have a situation where the inversion goes away every day, and it just sits there and waits for another inversion to come in. That's not what you're suggesting?

A. No, not at all.

Q. Okay. So we have a 24-hour cycle essentially if you've

got an inversion every night; is that right?

A. Yes, sir. That would be reasonably accurate.

Q. And you said you believe that volatility tends to settle

down in low places; correct?

A. It can. I mean, it tends to be in that area, but where I've seen volatility patterns like you would normally associate with a drift pattern then normally it does tend to follow the low areas or settle into the low places. A lot of times that's the reason you can tell you're looking at volatiles as opposed to physical drift to spray particles.

Q. And the inversions we're talking about, I mean, they're only a few feet off the ground, the ground fog can be very low to the ground; correct?

A. They can be very low to the ground, but if you look at -- I mean, they can be at a lot of different heights. I mean, you can look at a lot of smoke that goes a long way up in the air before it flat tops. And when it flat tops, that's where the inversion layer is, so you could have inversions of all different depths.

Q. And your theory is that it gets caught in the inversion, and then somehow moves over to damage the off target -- the other fields; is that correct?

A. Well, where there's spray particles trapped in

inversions or volatiles trapped in inversions, they are going to move laterally, because they can't move any other

direction, because there's a cap over them.

Q. Well, if they're going to move at all. In a temperature inversion one of the aspects of a temperature inversion is it tends to be very stable air?

A. It is stable air, but there's also laminar flow taking place in that.

Q. And you said a few moments ago that volatility tends to settle in low places. In fact, dicamba vapor is heavier than air; correct?

A. It is heavier than air, but go ahead.

Q. And you testified and you know that Crowley's Ridge where Bader Farms is is about 150 to 200 feet above the surrounding countryside, correct?

A. It is.

Q. I want to talk just a little bit about leaf curl. You would agree that because you you're not a peach expert

you

don't know all the reasons that a peach leaf can curl;

correct?

A. I don't know all the reasons why a peach leaf can curl.

Q. And, in fact, I think I said that peach leaf curling you

understand part of it is just normal? I think you said that

in your direct.

A. I was looking at it in the top of the trees, but, yes,

some curling in peach leaves is normal.

Q. Now, you agree that Armillaria is present in Bader

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Farms, correct, Dr. Baldwin?

A. Yeah, I don't deny that.

Q. And you testified, I believe, on Direct Examination

about what Armillaria -- how it affects the peach tree and

how it gets linked up with the peach tree and secondary

versus primary; correct?

A. I don't remember secondary -- well, ask the question

again.

Q. Well, in fact, you've never been trained in what

happens

to peach trees infected by Armillaria; correct?

A. That is correct.

Q. And you have no education and no interaction between

Armillaria and peach trees; correct?

A. That is correct. Just only what I've read.

Q. In fact, before this case you had no knowledge based at

all about Armillaria and peaches?

A. That's fair.

Q. You had never seen Armillaria on a peach tree; correct?

A. That's fair.

Q. And Armillaria is a pathogen? Would that be the right

word for it?

A. It is.

Q. It's a disease that affects trees?

A. Well, apparently, yes, it's a disease that affects

trees.

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Q. And when you're talking about diseases in plants, the

proper expertise for that area is a plant pathologist;

correct?

A. If you're only considering the disease, that would be correct.

Q. And you're not a plant pathologist?

A. I'm not a plant pathologist.

Q. Now, you don't know what kind of pattern of tree death Armillaria can cause; correct?

A. Only what I read.

Q. Could we have just for Dr. Baldwin and the Court and counsel please Exhibit M-168.

Do you recognize this, Dr. Baldwin, as a picture from 2010 of one of the tracts of Bader peach orchard?

A. That's what it says.

(Defendant's Exhibit No. M-168, Photo, was identified.)

MR. MILLER: Move for the admission of M-168, Your Honor.

THE COURT: Admitted.

(Defendant's Exhibit No. M-168, Photo, was received.)

MR. MILLER: Can we have that up for the jury, please?

THE COURT: Yes.

BY MR. MILLER:

Q. And now this is a particular farming tract of the orchard in 2010; correct?

A. That's what it says.

Q. And that would be five years before the first Xtend seed was sold; correct?

A. Yes, sir.

Q. And do you see this area right here that I'm circling in red, which is a large circular area with no trees in it at all; correct?

A. It would appear to be.

Q. And you have no idea what caused that circular dead spot there, do you, Dr. Baldwin?

A. I have no opinion on -- no, I have no idea what caused that or have no opinion on the photograph.

Q. We'll move on to another topic, Dr. Baldwin. You talked about soybeans. And you would agree that soybeans are the most sensitive plant to dicamba; correct?

A. I would -- I would still consider soybeans as the

most

sensitive, but one thing I've learned is there are a lot of

other sensitive plants that we really had not considered.

Q. And you didn't walk any of Mr. Bader's soybean fields,

did you?

A. I looked at his soybean fields. Whether I ever walked

out in one I don't recall walking out in one. You really

didn't have to walk out in one to see it.

Q. You just drove by them?

A. Yeah.

Q. And do you believe that driving by them was sufficient

for you to make -- for you to offer an opinion that it was

dicamba symptomology that you saw?

A. As many soybeans fields that I had looked at, walked in,

driven by in 2016 and 2017, absolutely.

Q. Now, you said in your report -- well, you talked about

the Weed Science Society of America; correct?

A. I mean, I know what that is.

Q. And you're a fellow of Weed Science Society of America?

A. I am a fellow of the Weed Science Society of America.

Q. And in your report you noted that the Weed Science Society of America says that peaches only have a moderate sensitivity to dicamba; correct?

A. That would be -- I don't know which reference you're talking to. I mean, I have seen one reference where they rated it in the moderate category. I've seen another set of reference where they rated it in a highly sensitive category.

Q. So there's disagreement among the scientific community as to just how sensitive peaches are to dicamba; correct?

A. Well, I don't think anybody denies that they're sensitive, but the one I'm talking about -- the one that I'm referring to that rated it as highly sensitive actually

sprayed peaches. I don't know whether the other reference references dicamba that was physically sprayed on peaches or

whether that was somebody's opinion.

Q. I'm simply talking about the WSSA that you're a fellow

of.

A. I understand that.

Q. Yes. And that they rated it as moderately sensitive?

A. I don't know -- they didn't do anything. And the Weed

Science Society of America -- it would have been somebody in

the Weed Science Society of America that did that.

Q. Now, is it your opinion that all of the problems and all

of the yield loss, any issues that Bader Farms since 2015

have been caused by dicamba? Is that your opinion?

A. I really -- no. I mean, I -- I don't -- I mean, I

didn't see anything there in 2015. All I can do is relate

back to what I've seen later.

Q. And you would agree that there's no research that can

tie any first amount of exposure of dicamba in peach trees to

any particular yield loss; correct?

A. At this point that is correct.

Q. Now, Dr. Baldwin, you did not take any quantitative data

at all in any of your visits to Bader Farms; correct?

A. Any -- I strictly based my opinions on symptomology just like I have for 45 years.

Q. You didn't review any of Bader Farms' records; correct?

A. I didn't see a need to review the records, no.

Q. You did not do any testing; correct?

A. I did not.

Q. You could have conducted an experiment, but you decided not to do that; correct?

A. I only would go so far to say that I could have conducted any experiment. I mean, that would be very difficult to do over a period of time to try to duplicate what's going on on his farm. I mean, that -- I couldn't have done that in a short period of time, no.

MR. MILLER: Could we see clip Number 133, please. And could we show that to the jury, Your Honor?

THE COURT: Yes.

(Clip 133 of the videotaped deposition of Dr. Ford Baldwin was played for the jury at this time as follows:

Q. "Well, just because you say it, Dr. Baldwin, doesn't make it so. You had an opportunity to conduct an experiment, didn't you?"

A. "Maybe I did. Maybe I didn't. I guess I could have if I'd have felt like it was necessary. I simply did not feel like it was necessary."

Q. So you could have conducted an experiment, but you decided it wasn't necessary for your purposes; correct?

A. It would have been very difficult to do.

Q. And you do not have any direct evidence of the kind of

exposure of dicamba that you're talking about; correct?

A. I don't understand the question, sir.

Q. I'll repeat it. You do not have any direct evidence of the kind of dicamba exposure that you have been testifying about today at Bader Farms; correct?

A. Strictly using symptomology is what I based my determination on.

MR. MILLER: Can we have clip 134, please.

(Clip 134 of the videotaped deposition of Dr. Ford Baldwin was played for the jury at this time as follows:)

Q. "You don't have any direct evidence of that, do you?"

A. "I'm 100 percent confident in that."

Q. "I appreciate your level of confidence, but I'm asking about evidence. You don't have any evidence of direct exposure; correct?"

A. "I don't know what kind of evidence it would take. No, I guess I don't, but I'm 100 percent confident that it was."

Q. And you're confident in your opinion; correct, Dr. Baldwin?

A. I'm very confident in my opinion.

Q. Your opinion in March of 2019 when you wrote your first report was that the Bader peach orchard would be out of business as of 2019; correct?

A. I thought there was a good chance, yes, sir.

Q. And you were confident of that opinion; correct?

A. That is correct.

Q. And you were wrong; right?

A. Well, I mean, we'll see, but right now he's still in business.

Q. In fact, when you went there in July of 2019, you said that his peach operation was like a bee hive, and they almost needed a deputy sheriff out front to direct the traffic?

A. I did. I was very pleasantly surprised with what I saw in his early peach crop in 2019 when there was no doubt in my mind that it did not get the exposure as early -- nearly as early as it had been in the past, yes, sir.

Q. Well, that's my point, Dr. Baldwin, when you wrote your first report in March of 2019, you stated that your opinion was the peach business was over at Bader Farms as of 2019, and that turned out to be wrong; correct?

A. As of 2019 for that part of the crop it was wrong. I still -- I still believe he cannot successfully grow peaches long term in the scenario that he's sitting in right now the way that dicamba is being used.

Q. And you also said in a different setting that you

believed based on the reports of dicamba, the investigations,

the reports of dicamba complaints and the number of acres

that were estimated, that the soybean harvest in 2017,

particularly in Arkansas, was going to be terrible. You had

that opinion; correct?

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A. I did have that opinion the 1st of July, I sure did.

Q. And you were confident in that opinion too, weren't you,

Dr. Baldwin?

A. I was.

Q. And you were wrong, weren't you, sir?

A. In 2017 it was better than I expected, because we had an

ideal July and August. So, yes, sir, it made more recovery

than I thought it would in 2017. Had we had a different year

it would not have.

Q. In fact, there were record yields in some areas in

Arkansas of soybeans in 2017, weren't there, Dr. Baldwin?

A. There were record yields, especially on the Xtend crops.

Q. And you were confident when you wrote your affidavit on April 27th of 2017 before you saw any herbicide symptomology on any leaves at Bader Farms that the damage there was caused by dicamba; correct?

A. I was confident in that.

MR. MILLER: Your Honor, I have one area to go over with Dr. Baldwin.

THE COURT: Well, let's do it.

MR. MILLER: I don't know if it will be short or long. I'll try to make it short.

THE COURT: Good.

BY MR. MILLER:

Q. Dr. Baldwin, you talked a lot about -- well, you talked

something about all the investigations that were done by the State agencies --

A. Yes, sir.

Q. -- in 2017?

A. Yes, sir.

Q. You were here for my opening statement; correct?

A. I was.

Q. And you saw the big stack of reports. This is just a little piece of it.

A. It seemed like I remember it went whop, whop, whop, whop.

Q. It did indeed. I was afraid at one point it was going to fall over. Do you recall that?

A. I do.

Q. You -- and I could go over these if you like. Would you agree with me, sir, when I said that the reports showed at least that sampling, no dicamba, no dicamba, no dicamba, no dicamba, et cetera, you would agree that just because somebody makes an allegation and an inspection goes out, doesn't mean that it will actually turn out to be dicamba; correct?

A. I don't know anything about those reports. I don't necessarily want to get in a situation where you got to read them all. Are you talking about dicamba symptomology, or are you talking about tests that were run or --

Q. Let's take a look at one for an example.
A. Okay. Let's do.
Q. Let's take a look at M-857. And if we could go to the second page.
COURT CLERK: I'm sorry, it's already admitted?
MR. MILLER: No, it's not. I'm sorry. I meant just for the Court and the witness and counsel. I apologize. If you go to the third page so Dr. Baldwin can see this.
BY MR. MILLER:
Q. Do you recognize this as an investigative file? And I'm happy to show you the whole thing, Dr. Baldwin.
A. I do. I'm familiar with it.
Q. You would agree that the Arkansas Plant Board is one of the -- you believe it's one of the best in the country; right?
A. I do.
Q. And you believe that their investigators that do these

investigations are very competent; correct?

A. Like anything some are better than others, but, yes,

those overall I believe they're very competent.

Q. And if we go to the second page of this document, you

see that the suspected dicamba or the suspected pesticide

here was dicamba; correct?

A. That's correct.

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Q. And then if we go to page 18, we have the narrative

report from the investigator; correct?

A. That's correct.

Q. And they actually found that it was symptoms of

glyphosate throughout the field; correct?

A. That would be -- that would appear to be the

determination in that particular case file, yes, sir.

Q. Do you want to take a look at another one?

A. We can.

Q. Let's take a look at M-858. This is another file from

an investigation carried out by the Arkansas State Plant

Board?

A. Yes, sir.

Q. And the second page of this one shows, again, suspected pesticide dicamba?

A. Yes, sir.

Q. And if we go to page 20 of this one, again, they found out after the investigation it was actually glyphosate; correct?

A. Yeah. I mean, that would seem -- those would appear to be related just looking at part of it, but, yes, sir, that's what it says there.

Q. Let's go to 859, M-859. This is another inspection filed from the Arkansas State Plant Board?

A. Yes, sir.

Q. If we go to page 4, this is another one where they suspected dicamba; correct?

A. That's correct.

Q. And if we go to page 7, this is the inspector narrative report saying this time they found out -- and I'm probably to going to butcher this name -- it was Triclopyr.

Triclopyr?

A. Triclopyr, yes, sir.

Q. Instead of dicamba; correct?

A. That's what it says there.

Q. I don't want to take everybody else's time here, Dr. Baldwin. Would you be surprised to know that in Missouri the same thing happened where case after case after case they investigated and found out it wasn't dicamba, it was actually another herbicide?

A. I have no opinion on -- on the Missouri, but I can tell you in Arkansas it wasn't case after case after case. It was not case after case after case.

Q. Okay. And when they found out it was dicamba in many of those cases, it turned out to be Banvel or some other older illegal form of dicamba; correct?

A. They found some of that.

Q. And they found people not following the labels; correct?

A. They found some of that.

Q. And basically the bottom line here, Dr. Baldwin, is where there's an accusation of damage from an off-target

movement of a herbicide, be it dicamba or anything else, you don't just take somebody's word for it, you go out and do a full inspection, you do the testing that you can do, you gather all the information and evidence you can, and then you come to a conclusion as to what caused the alleged damage.

Isn't that what you're supposed to do, Dr. Baldwin?

A. That's what you're supposed to do, yes, sir.

Q. Thank you.

MR. MILLER: No further questions.

THE COURT: Okay. Why don't we break then for the evening. Then we'll start with BASF tomorrow then.

So, ladies and gentlemen, please remember the admonition I've given you repeatedly. And thanks for your patience and attentiveness, and we'll reconvene at 9:00 o'clock tomorrow, and you're excused for the day. Thanks.

(Jury out.)

(Proceedings resumed in open court outside the

presence of the jury.)

THE COURT: And you may step down too.

THE WITNESS: Yes, sir.

THE COURT: Any issues you want to discuss otherwise?

MS. GEORGE: I would like to read some exhibits into the record.

THE COURT: Sure. That's fine.

MS. GEORGE: I know that it's not the most exciting thing, but I did e-mail Michelle a list so that she could have something to cross check it with, and I e-mailed you a list as well.

THE COURT: That's fine. You can be seated.

MS. GEORGE: Are you ready?

Plaintiff offers into evidence Plaintiff's Exhibit 22, 104, 87, 95, 116, 130, 546, 188, 193, 202, 493, 607, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1083, 1087, 1088, 1091,

1092, 1094, 1160, 1161, 1163, 1164, 1169, 1170, 1171, 1131,
1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141,
1142, 1143, 1144. 1145, 1146, 1147, 1149, 1150, 1152, 1157,
1158, 1159, 1102, 1103, 1104, 1106, 1107, 1108, 1109, 1110,
1122, 1123, 1124 and 1130.

THE COURT: No more?

MS. GEORGE: That's all. The filibuster is over.

THE COURT: All those will be admitted subject to the objections that were stated.

MR. MILLER: Thank you, Your Honor.

THE COURT: Anything else?

Okay. We'll reconvene at 9:00 o'clock then.

C E R T I F I C A T E

I, Alison M. Garagnani, Registered Merit Reporter and Certified Realtime Reporter, hereby certify that I am a

duly appointed Official Court Reporter of the United States District Court for the Eastern District of Missouri.

I further certify that the foregoing is a true and accurate transcript of the proceedings held in the above-entitled case and that said transcript is a true and correct transcription of my stenographic notes.

I further certify that this transcript contains pages 1278 through 1439 inclusive and that this reporter takes no responsibility for missing or damaged pages of this transcript when same transcript is copied by any party other than this reporter.

Dated Cape Girardeau, Missouri, this 7th day of February, 2020.

_____

/s/Alison M. Garagnani
Alison M. Garagnani, CCR, CSR, RMR, CRR
Official Court Reporter