

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

- - - - -

SYNGENTA CROP PROTECTION	)	
AG,	)	
	)	Case No.
Petitioner,	)	PGR2023-00017
	)	
vs.	)	US Patent No.
	)	11,445,727
UPL LTD.,	)	
	)	
Patent Owner.	)	

VIDEO RECORDED DEPOSITION OF PHILLIP BRANNEN, PhD

Thursday, September 28, 2023, 9:17 a.m. 09:16:12

BakerHostetler LLP
1050 Connecticut Avenue, NW
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Washington, DC

Reported By: Marjorie Peters, FAPR, RMR, CRR, RSA
Job Number: Henderson 54392

1 VIDEO RECORDED DEPOSITION OF PHILLIP BRANNEN, PhD
2 a witness herein, called by the Patent Owner for
3 examination, taken pursuant to the 37 C.F.R. §
4 42.53(d), by and before Marjorie Peters, a
5 Registered Merit Reporter, Certified Realtime
6 Reporter and Notary Public in and for the District
7 of Columbia, at BakerHostetler LLP, 1050 Connecticut
8 Avenue, NW, Washington, DC, on Wednesday,
9 September 27, 2023, at 9:17 a.m.

09:16:12

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Henderson Legal Services

202-220-4158

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1

I N D E X

2

EXAMINATION

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PHILLIP BRANNEN, PhD

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1 P R O C E E D I N G S

2 THE VIDEOGRAPHER: Here begins video 09:15:37

3 number one in the video deposition of Dr. Phillip 09:15:38

4 Brannen, taken in the matter of Syngenta Crop 09:15:43

5 Protection AG versus UPL Ltd., in the United States 09:15:49

6 Patent and Trademark Office before the Patent Trial 09:15:55

7 and Appeal Board. Case Number PGR2023-00017. 09:15:59

8 Today's date is September 28, 2023. 09:16:06

9 The time is 9:17 a.m. This deposition is being held 09:16:11

10 at 1050 Connecticut Avenue, Northwest, Washington, 09:16:17

11 DC. 09:16:21

12 The court reporter is Marjorie 09:16:22

13 Peters and the videographer is Deshawn White. Both 09:16:24

14 are presenting on behalf of Henderson Legal 09:16:30

15 Services. 09:16:33

16 Will counsel please introduce 09:16:33

17 themselves and state whom they represent, followed 09:16:34

18 by the court reporter administering oath. 09:16:39

19 MR. FELDSTEIN: I'm Mark Feldstein 09:16:41

20 from Finnegan Henderson on behalf of the patent 09:16:43

21 owner. With me today is Max Giannelli, also from 09:16:46

22 Finnegan Henderson. 09:16:50

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8

1 MR. CARSON: I'm Charles Carson, 09:16:52

2 BakerHostetler, on behalf of the petitioner, 09:16:54

3 Syngenta, and the witness, Dr. Brannen. 09:16:57

4 With me is David Klecyngier, also -- 09:16:59

5 did I pronounce that right? 09:17:04

6 MR. KLECYNGIER: You got it right. 09:17:05

7 MR. CARSON: Okay. 09:17:06

8 Also an attorney with 09:17:07

9 BakerHostetler, representing Syngenta. 09:17:09

10 PHILLIP BRANNEN, PhD, 09:17:21

11 having first duly affirmed to tell the truth, was 09:17:21

12 examined and testified as follows: 09:17:22

13 EXAMINATION 09:17:22

14 BY MR. FELDSTEIN: 09:17:22

15 Q. Good morning, Doctor. Mark Feldstein 09:17:22

16 from Finnegan Henderson. 09:17:26

17 How are you? 09:17:28

18 A. I'm doing well. Thank you. 09:17:29

19 Q. Good. 09:17:30

20 Can you tell me what documents you 09:17:30

21 brought with you today? 09:17:32

22 A. I have my declaration and the claim 09:17:33

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1 charts. And then in here, we also have the -- my 09:17:35
2 CV, and the Appendix B, which is referencing these 09:17:39
3 exhibits which are in here. 09:17:49

4 So all the exhibits that are here 09:17:50
5 are listed here in that book. 09:17:52

6 Q. So you have your report, the appendices 09:17:53
7 to your report and all the exhibits listed in your 09:17:56
8 report? 09:17:58

9 A. Yes. 09:17:59

10 Q. Are they all unmarked copies? 09:17:59

11 A. These are unmarked copies, that is 09:18:01
12 correct. 09:18:03

13 Q. Okay. Thank you. 09:18:03

14 I'm going to mark as first 09:18:04
15 exhibit -- I have it, Max -- Exhibit 2015. 09:18:05
16 (Exhibit 2015, 2016 Southeast Regional Caneberries 09:18:05
17 Integrated Management Guide, was marked for 09:18:05
18 identification.) 09:18:18

19 Q. Can you identify what Exhibit 2015 is, 09:18:20
20 Doctor? 09:18:23

21 A. This is the 2016 Southeast Regional 09:18:24
22 Caneberries Integrated Management Guide. 09:18:30

10

1 Q. Your -- what's your role in this guide? 09:18:32

2 A. At this time, I was the commodity editor 09:18:35

3 as well as a senior editor. 09:18:38

4 Q. What was -- 09:18:40

5 MR. CARSON: Mr. Feldstein, if you 09:18:41

6 have an extra copy, could I have that an extra copy 09:18:42

7 of the exhibit? Is that -- 09:18:47

8 MR. FELDSTEIN: We're going to need 09:18:48

9 that one, but thanks. 09:18:49

10 MR. CARSON: Oh, you are? Okay. 09:18:52

11 MR. FELDSTEIN: Yeah. 09:18:54

12 MR. CARSON: Go ahead. 09:18:54

13 MR. FELDSTEIN: Just for the record, 09:18:54

14 I did hand you one copy; right? 09:18:55

15 MR. CARSON: You did. I thought you 09:18:56

16 had an extra I was going to give to Mr. Klecyngier, 09:18:57

17 but if you don't, that's fine. 09:19:00

18 MR. FELDSTEIN: Yeah, yeah. Okay. 09:19:00

19 BY MR. FELDSTEIN: 09:19:00

20 Q. What is the 2016 Integrated Management 09:19:05

21 Guide? 09:19:10

22 A. This is a publication that we developed 09:19:10

11

1 that's from the Southern Region Small Fruit 09:19:14
2 Consortium, and it's published for producers of, in 09:19:20
3 this case, caneberries. There are several other 09:19:23
4 different types of small fruits we have guides for 09:19:27
5 under the same category. 09:19:29

6 It's an integrated best management 09:19:31
7 guide which allows producers to go into this guide 09:19:33
8 and determine both in time what to apply as far as 09:19:36
9 fungicides, insecticides that we control. And also 09:19:40
10 vertebrate management also, such as deer and things 09:19:45
11 of that nature. 09:19:48

12 Q. Was this guide made available to those 09:19:49
13 producers in 2016? 09:19:51

14 A. Yes. 09:19:53

15 Q. Can you look through the guide, and just 09:19:54
16 tell me if this copy, Exhibit 2015, is a complete 09:19:56
17 and accurate copy. 09:19:59

18 A. It appears to be an accurate copy, as 09:21:03
19 far as I can recall, yes. 09:21:06

20 Q. Okay. 09:21:06

21 Can you turn to the page that's 09:21:07
22 numbered 4 at the bottom. There's a heading 09:21:08

12

1 Resistance Management. 09:21:20

2 Do you see that? 09:21:21

3 A. I do. 09:21:21

4 Q. Can you read in point number 4. 09:21:22

5 A. What number -- read number 4; is that 09:21:30

6 correct? 09:21:31

7 Q. Yes, please. 09:21:31

8 A. "If more than one treatment is needed 09:21:31

9 when the same pest is present, rotate pesticide mode 09:21:33

10 of action between treatments." 09:21:37

11 Q. What does it mean to "rotate pesticide 09:21:39

12 mode of action between treatments"? 09:21:42

13 A. It means that you would basically apply 09:21:44

14 one mode of action one time, and then another mode 09:21:46

15 of action another time, and these would be limited 09:21:50

16 based on the label as far as how many times you 09:21:53

17 could apply this. 09:21:57

18 Q. So when you rotate, you have to 09:21:58

19 necessarily have separate compositions; is that 09:21:59

20 correct? 09:22:03

21 A. Explain what you mean by "composition." 09:22:03

22 Q. How do you apply the first mode of 09:22:06

13

1 action -- well, let me just back up. 09:22:12

2 "Rotating" means you're applying two 09:22:15

3 different treatments at two different times; is that 09:22:17

4 correct? 09:22:19

5 **A. That is correct, and --** 09:22:19

6 **Q. Okay.** 09:22:20

7 **A. -- if you're rotating, that is correct.** 09:22:21

8 **Q. You said that the use would be limited** 09:22:23

9 **based on the label as far as how many times you can** 09:22:33

10 **apply each treatment; is that correct?** 09:22:37

11 **A. The labels will generally specify how** 09:22:38

12 **many times a particular mode of action should be** 09:22:42

13 **applied within a year.** 09:22:44

14 **Q. What's the rationale, if any, for why** 09:22:45

15 **there would be a limit on the number of times you** 09:22:47

16 **can apply a given mode of action per year?** 09:22:50

17 **MR. CARSON: Objection to form.** 09:22:52

18 **THE WITNESS: Please repeat the** 09:22:53

19 **question.** 09:22:54

20 **MR. FELDSTEIN: Can you read back** 09:22:55

21 **the question.** 09:22:55

22 **(The record was read back by the Court Reporter.)** 09:23:06

14

1 THE WITNESS: This is largely a 09:23:08
2 resistance management issue. That's why you're 09:23:10
3 limited. It's a means of providing for resistance 09:23:13
4 management among different classes of chemistries, 09:23:16
5 whether that be fungicides or insecticides or weed 09:23:20
6 control in this case. 09:23:25

7 Q. How does limiting the number of times 09:23:25
8 you can apply a given mode of action affect 09:23:27
9 resistance management? 09:23:30

10 A. In theory, you're less likely to select 09:23:33
11 for a population of whatever it is you're trying to 09:23:37
12 control that would be resistant to that mode of 09:23:41
13 action. 09:23:44

14 Q. You said that the rotating different 09:23:45
15 modes of action for resistance management applies 09:23:53
16 also to fungicides; is that correct? 09:23:56

17 A. That is correct. It is one of the 09:23:58
18 methods that can be utilized for resistance 09:24:01
19 management. 09:24:04

20 Q. Can you turn to the next page, page 5 of 09:24:04
21 Exhibit 2015. There's a heading General Fungicide 09:24:08
22 Resistance Management Recommendations. 09:24:15

15

1 Do you see that? 09:24:18

2 A. I do see that. 09:24:18

3 Q. Can you read in the third bullet. 09:24:19

4 A. The third bullet. Okay. 09:24:21

5 "Apply fungicides of the same class 09:24:23

6 in a block of sprays (1-2 sprays), then alternate to 09:24:26

7 a fungicide of a different class in the next block 09:24:33

8 of sprays." 09:24:36

9 Q. Can you explain what you mean there by 09:24:36

10 "same class"? 09:24:39

11 A. The same class of fungicides would be a 09:24:45

12 category of fungicides that act on the fungus in the 09:24:51

13 same manner, and usually, in which there may be 09:24:55

14 cross-resistance. 09:24:59

15 Q. What do you mean "in a block of sprays"? 09:24:59

16 A. Well, in this case, one or two sprays. 09:25:02

17 So like two sprays together. 09:25:05

18 So if I put out the same class of 09:25:06

19 chemistry as a fungicide, what I'm saying here is I 09:25:13

20 would not want to go beyond another one in the next 09:25:15

21 application in that same class before I switch to a 09:25:19

22 different class. 09:25:23

16

1 Q. So block of sprays is the sequential 09:25:24
2 applications? 09:25:28

3 A. Yes. 09:25:29

4 MR. CARSON: Objection to form. 09:25:29

5 A. In this case, it is sequential 09:25:33
6 applications, that is correct, in that particular 09:25:36
7 bullet point. 09:25:39

8 Q. Then you -- the bullet continues, you 09:25:39
9 refer to alternating to a fungicide of a different 09:25:45
10 class in the next block of sprays. 09:25:47

11 Is "alternating" here have the same 09:25:50
12 or different meaning as compared to the rotating 09:25:52
13 that was referred to on the previous page? 09:25:56

14 A. I'm sorry. What page was that that we 09:25:58
15 were on where you had the rotating? 09:26:03

16 Q. Just the immediate previous page before. 09:26:04

17 A. Oh, the immediate previous page. I'm 09:26:06
18 sorry. 09:26:09

19 Q. I'll just ask the question again while 09:26:19
20 you're looking. 09:26:21

21 A. I found it. 09:26:22

22 Q. Is alternating different classes of 09:26:23

17

1 treatment the same or different from rotating 09:26:25

2 between different treatments? 09:26:28

3 **A. The alternation and rotation would be 09:26:31**

4 **synonymous. 09:26:33**

5 **Q. Okay. 09:26:34**

6 Why for fungicides would you 09:26:37

7 alternate to a fungicide of a different class after 09:26:41

8 a block of one to two sprays? 09:26:45

9 **A. This would be for resistance management, 09:26:48**

10 **but alternation is not the only way that you can get 09:26:53**

11 **at resistance management, though. You could also 09:26:55**

12 **take mix in order to get to resistance management. 09:27:00**

13 **Q. You're not recommending here on page 5 09:27:02**

14 **tank mixing for disease management or -- is that 09:27:04**

15 **correct? 09:27:06**

16 **MR. CARSON: Objection to form. 09:27:06**

17 **A. Actually, if you look at page 5 in the 09:27:07**

18 **second bullet point, there is -- there are 09:27:09**

19 **recommendations for tank mixing materials as well, 09:27:12**

20 **in fact, one says always tank mix benzimidazoles, 09:27:16**

21 **hydroxy-anilides or dicarboximides with a 09:27:23**

22 **broad-spectrum fungicide such as Captan to control 09:27:29**

18

1 resistance strength. So it is, in fact, there also 09:27:32

2 as a method. 09:27:34

3 The reason, if you want to know the 09:27:35

4 reason, why we would generally also put down the 09:27:37

5 alternation is when you mix materials together, 09:27:40

6 there can be a higher cost. They're both resistance 09:27:44

7 management schemes. 09:27:47

8 Q. In Exhibit 2015, page 5, the only tank 09:27:49

9 mixing that you're recommending here are the ones 09:27:59

10 listed in bullet point 2; is that correct? 09:28:01

11 A. In this particular case, these are the 09:28:02

12 ones that we are specifying. It does not exclude 09:28:05

13 other tank mixes that could occur. We are saying 09:28:09

14 this particularly because of these materials and how 09:28:11

15 prone they are to resistance development, we would 09:28:14

16 recommend tank mixing. 09:28:17

17 Q. Can we turn to page 13 in Exhibit 2015? 09:28:19

18 Can you tell me just generally, 09:28:28

19 what's conveyed on page 13? 09:28:30

20 MR. CARSON: Objection to form. 09:28:32

21 A. Well, you have several columns, and 09:28:43

22 within those columns are different information. 09:28:45

1 So if you'd look at the very top of 09:28:49
2 the page, we're telling the -- anybody that this is 09:28:52
3 a blackberry and raspberry guide, and we're giving a 09:28:56
4 phenology or a growth stage in which these materials 09:29:00
5 below could be applied. 09:29:04

6 So we're saying shoots six inches 09:29:05
7 long and before blooms are open, so that tells you 09:29:09
8 when these are going to be applied. 09:29:12

9 The first column has both an 09:29:13
10 insecticide recommendation, but then we go into the 09:29:16
11 strawberry clipper, and weevil, but in there we go 09:29:20
12 into cane leaf rust, orange rust, and yellow rust, 09:29:24
13 which are diseases. And then for the management 09:29:27
14 options, we give the various fungicides on that 09:29:29
15 page, and it may be continued to the next. I don't 09:29:34
16 think it is, but we have the fungicides, they can 09:29:36
17 legally be applied by label, and that actually do 09:29:40
18 have activity against these -- these diseases that 09:29:45
19 are listed on left side. 09:29:50

20 We then give the amount of the 09:29:52
21 formulated product per acre that you would apply for 09:29:54
22 those diseases, and then we give a -- an efficacy 09:29:58

20

1 chart, which basically allows the producer to 09:30:04
2 understand to what degree these fungicides are going 09:30:08
3 to be active as a comparison when they're selecting 09:30:10
4 fungicides. 09:30:13

5 And then we give them the REI, which 09:30:13
6 is the re-entry interval, which basically tells 09:30:15
7 them, if they spray this, this is how many hours or 09:30:18
8 days or whatever amount of time it is before you can 09:30:21
9 enter back into the actual field without protective 09:30:25
10 equipment. 09:30:31

11 And then the pre-harvest interval is 09:30:32
12 relative to when the PHI is relative to when you can 09:30:36
13 spray the materials, and then you can harvest the 09:30:41
14 material, and then you can eat, in this case, a 09:30:43
15 Blackberry for example, and safely do that, after a 09:30:45
16 chemical has been applied. 09:30:47

17 And then in the comment column, we 09:30:49
18 have comments which a producer would need to know 09:30:54
19 that would be helpful if he's applying that 09:30:59
20 fungicide. It's not -- obviously not the label, but 09:31:01
21 it gives some of the key factors that they would 09:31:03
22 need to look at if they're applying that particular 09:31:05

21

1 fungicide or insecticide. And then with that, we 09:31:09

2 also have what is termed the FRAC or IRAC codes. 09:31:11

3 FRAC stands for Fungicide Resistance 09:31:17

4 Action Committee. And that gives the various 09:31:21

5 classes of the fungicides so that you can select 09:31:22

6 among those relative to resistance management when 09:31:25

7 you're developing a spray program. The IRAC code 09:31:27

8 does the same thing for insects. 09:31:31

9 Q. You have a entry for azoxystrobin; 09:31:34
10 correct? 09:31:39

11 A. I do. 09:31:39

12 Q. The recommendation is -- in the 09:31:40
13 comments, is no more than two sequential 09:31:42
14 applications of azoxystrobin should be made for 09:31:45
15 alternating with fungicides of a different mode of 09:31:49
16 action. 09:31:51

17 Do you see that? 09:31:52

18 A. I do see that. 09:31:52

19 Q. Why is that the recommendation? 09:31:53

20 A. It is a recommendation that in this 09:31:56

21 case, what we are providing is information that says 09:32:02

22 that this is a good resistance management scheme. 09:32:05

22

1 **You can -- you can do that. It doesn't preclude you** 09:32:09
2 **from also tank mixing azoxystrobin with another mode** 09:32:14
3 **of action also for resistance management. But this** 09:32:20
4 **would be a method you could utilize, and the** 09:32:22
5 **economics of it may be more favorable than tank** 09:32:24
6 **mixing at that point, but it depends.** 09:32:27

7 Q. You don't recommend anywhere in this 09:32:29
8 section of Exhibit 2015 tank mixing; correct? 09:32:33

9 MR. CARSON: Objection to form. 09:32:39

10 A. **In this particular document, we do** 09:32:40
11 **not -- in this particular document on this page, I** 09:32:43
12 **should say, I don't see a reference to tank mixing** 09:32:47
13 **for that particular material.** 09:32:51

14 **It does not preclude doing that as a** 09:32:53
15 **resistance management scheme, however.** 09:32:56

16 Q. Sir, and just to be clear, the section 09:32:58
17 seems to start on page 12, and go through page 16. 09:33:00

18 Do you agree? 09:33:03

19 A. **Sorry. I'm looking at these on both** 09:33:06
20 **sides.** 09:33:09

21 **What was the final page, you said?** 09:33:28

22 Q. 16. 09:33:30

23

A. I think that is accurate. 09:33:32

2 Q. Just let me ask the question again, so 09:34:13
3 it's clear. 09:34:22

4	In this section from pages 12 to 16	09:34:23
5	of Exhibit 2015, you don't recommend anywhere tank	09:34:25
6	mixing; correct?	09:34:29

7 A. I do not see a recommendation for tank 09:35:40
8 mixing in that section of the document. 09:35:43

9 Q. Can you turn to page 15 of Exhibit 2015? 09:35:44

10 You have an entry for copper based products. 09:35:52

11 Do you see that at the bottom? 09:35:55

A. At the bottom of the page. 09:35:57

13 Q. Do you see that? 09:35:58

A. I do see that. 09:35:58

15 Q. What are copper-based products? 09:35:59

16 A. These are materials that contain copper 09:36:02
17 as the active ingredient. 09:36:07

18	Q. On the comment, you say, copper can	09:36:09
19	cause phytotoxicity on Blackberry -- or excuse me,	09:36:11
20	copper can cause phytotoxicity on black raspberry	09:36:17
21	cultivars if used with formulated phosphor acid	09:36:24
22	based (e.g. Aliette), A-L-I-E-T-T-E.	09:36:28

24

1 Can you explain what that means? 09:36:32

2 MR. CARSON: Objection to form. 09:36:34

3 A. That means that in some cases, and 09:36:36

4 because of research trials that have been conducted 09:36:42

5 over time, we do know that when you specifically mix 09:36:47

6 copper with Aliette that it -- or any of the -- the 09:36:50

7 phosphorous acid products, which is a category of 09:36:57

8 fungicides that you can have phytotoxicity. That's 09:37:02

9 the type of information we also try to provide for 09:37:05

10 our producers because they do, in fact, mix 09:37:08

11 products, and we want to make sure if they are 09:37:10

12 mixing products, they understand that some do cause 09:37:13

13 problems, but we -- and we specify that, if we can. 09:37:16

14 Q. What is phytotoxicity? 09:37:18

15 A. Phytotoxicity is damage to the plant, or 09:37:21

16 the plant products that would be caused by -- can be 09:37:24

17 caused by fungicides, herbicides, insecticides, 09:37:29

18 combinations of those materials. 09:37:33

19 Q. How would one know if one product used 09:37:34

20 with another product would cause phytotoxicity? 09:37:38

21 A. Generally, you would have to test that. 09:37:46

22 Q. Can you turn in your binder of exhibits 09:38:13

25

1 to Exhibit 1009? 09:38:16

2 (Previously marked Exhibit 1009, EPA Notice of 09:38:19

3 Pesticide Registration, 8.28.2015, was presented.) 09:38:20

4 A. I want to make sure this is the correct 09:38:52

5 exhibit. This is the Elatus fungicide. 09:38:55

6 Is that what you have? 09:38:58

7 Q. That's what I think it is. 09:38:58

8 A. Okay. That's why I'm just making sure. 09:39:00

9 I am just making sure. 09:39:02

10 Q. I would just ask, as long as we're 09:39:03

11 talking about, can you identify what Exhibit 1009 09:39:05

12 is? 09:39:09

13 A. This is the registration document and 09:39:10

14 the label for the product Elatus fungicide, and it 09:39:53

15 appears to be complete. 09:40:01

16 Q. Okay. This is something you relied on? 09:40:02

17 A. Yes. It's one of the documents I relied 09:40:04

18 on. 09:40:07

19 Q. What does it mean to be a registration 09:40:07

20 document in this context? 09:40:09

21 A. Well, it is the label which is approved 09:40:10

22 by the EPA, as far as I can tell from this. It says 09:40:15

26

1 here on the first page "On the basis of the 09:40:19
2 information furnished by the registrant, the above 09:40:24
3 named pesticide is hereby registered under the 09:40:27
4 Federal Insecticide, Fungicide and Rodenticide Act." 09:40:30
5 (As read.) 09:40:36

6 So this is the -- it appears to be 09:40:36
7 the EPA saying that this product -- or this label 09:40:37
8 is -- can be registered. It gives some additional 09:40:42
9 stipulations and things throughout the document 09:40:48
10 here, too, but that's what it -- you're asking me 09:40:49
11 what it means relative to that. 09:40:52

12 Q. I was trying to just understand in 09:40:55
13 general, what a registration document was in the 09:40:58
14 fungicide area. Do you have an understanding? 09:41:02

15 MR. CARSON: Objection to form. 09:41:04

16 A. I do. 09:41:05

17 Q. What is a registration document 09:41:07
18 generally in the fungicide area? 09:41:09

19 A. A registration document is the legally 09:41:12
20 binding document that explains how a product, such 09:41:16
21 as a fungicide, is to be applied, how it's to be 09:41:22
22 utilized. It specifies the rates. It specifies 09:41:25

27

1 which plants it can be applied to. It specifies the 09:41:29
2 use pattern for the material that is applied, and 09:41:34
3 gives other things. 09:41:42

4 Depending on the label, it can be 09:41:42
5 much more detailed or less detailed. It also gives 09:41:44
6 the reentry intervals, the pre- harvest intervals, 09:41:47
7 the types of things you have to wear for safety, 09:41:50
8 personal safety-type information is also included. 09:41:55

9 So it's a relatively comprehensive 09:41:59
10 document concerning any specific fungicide, and how 09:42:02
11 it's to be utilized. 09:42:06

12 Q. As I think we already discussed, this 09:42:08
13 registration document, Exhibit 1009, is for the 09:42:11
14 product Elatus; correct? 09:42:14

15 A. That is correct. 09:42:19

16 Q. Can you turn to the page that has page 09:42:23
17 number 1 in the top right corner. It's probably the 09:42:26
18 fifth page of the physical document. 09:42:31

19 A. Is that the one where it has "Group 11, 09:42:32
20 7 Fungicides" immediately below the page? 09:42:35

21 Q. Right. 09:42:37

22 Just can you read into the record or 09:42:38

28

1 your understanding of what the composition of 09:42:40

2 Elatus? 09:42:46

3 A. The active ingredients in Elatus are 09:42:46

4 azoxystrobin, 30 percent, benzovindiflupyr, 09:42:49

5 15 percent, other ingredients, 55 percent, for a 09:42:58

6 total of 100 percent. 09:43:00

7 And then below, it says, it 09:43:01

8 "Contains 30 percent of azoxystrobin active 09:43:04

9 ingredient (.30 pounds) and 15 percent pounds of 09:43:09

10 benzovindiflupyr active ingredient (0.15 pounds) per 09:43:18

11 pound." 09:43:26

12 Q. What does "15 percent pounds" mean? 09:43:26

13 (Clarification requested by the Court Reporter.) 09:43:35

14 Q. What does "15 percent pounds" mean? 09:43:38

15 A. I am not sure that that is supposed to 09:43:38

16 be there, because it says, "Contains 30 percent of 09:43:42

17 azoxystrobin active ingredient," 30 percent means 09:43:48

18 .30 pounds. 15 percent pounds of 09:43:48

19 benzovindiflupyr -- 09:44:05

20 (Clarification requested by the Court Reporter.) 09:44:09

21 A. I am not sure that that "pound" is 09:44:09

22 supposed to be there. I'm not -- I don't know. I 09:44:14

29

1 **don't know, and in that case, what it -- why it is** 09:44:15

2 **there.** 09:44:17

3 Q. To your understanding, is there a 09:44:18

4 difference between the metric that's used for the 09:44:20

5 fraction containing azoxystrobin versus the metric 09:44:26

6 that's used to contain the fraction of 09:44:31

7 benzovindiflupyr? 09:44:35

8 A. **Restate that question, please.** 09:44:38

9 Q. Sure. 09:44:40

10 The document, Exhibit 1009, refers 09:44:41

11 to 30 percent of azoxystrobin and 15 percent pound 09:44:46

12 of benzovindiflupyr; right? 09:44:56

13 A. **Correct.** 09:45:00

14 Q. Are those measurements, to your 09:45:00

15 understanding, the same or different? 09:45:02

16 MR. CARSON: Objection to form. 09:45:03

17 A. **I don't know why the "pound" part is** 09:45:04

18 **there. I don't know if that is a typographical** 09:45:09

19 **error or if it has meaning.** 09:45:13

20 **But the actual percentages are** 09:45:16

21 **there. It says, it contains 30 percent of** 09:45:18

22 **azoxystrobin active ingredients (.30 pounds), and** 09:45:22

30

1 **then it contains 15 percent of benzovindiflupyr** 09:45:26

2 **active ingredient (.15 pounds) per pound of active** 09:45:33

3 **ingredient.** 09:45:38

4 **And that -- I don't know beyond that** 09:45:39

5 **how to respond.** 09:45:46

6 Q. Does it appear that -- to you that 09:45:47

7 they're referring to the relative amount of each 09:45:48

8 component on the same basis as each other? 09:45:54

9 MR. CARSON: Objection to form. 09:45:57

10 A. **I think they are, but the "lb" or** 09:45:58

11 **"pound" designation is odd to me, but I don't know** 09:46:36

12 **how to define that. If that has any meaning at all.** 09:46:39

13 Q. What are the other ingredients in 09:46:44

14 Elatus, to your understanding? 09:46:48

15 A. **I don't know what those ingredients are.** 09:46:52

16 Q. Is there any -- 09:46:58

17 A. **You're asking me specifically, do I know** 09:46:59

18 **what those ingredients are. I don't know what those** 09:47:00

19 **ingredient are.** 09:47:03

20 Q. Is there any indication in Exhibit 1009 09:47:04

21 of what the other ingredients that comprise 09:47:07

22 55 percent of Elatus are? 09:47:11

1 **A. If you will repeat the question one more** 09:49:35

2 **time, I think I'm prepared to answer that.** 09:49:37

3 **Q. Is there any indication in Exhibit 1009** 09:49:39

4 **of what other ingredients comprise the 55 percent of** 09:49:43

5 **Elatus?** 09:49:47

6 **A. I do not see those disclosed.** 09:49:48

7 **Q. Is this the type of document,** 09:49:50

8 **Exhibit 1009, that a person of ordinary skill in the** 09:49:52

9 **art would have relied upon?** 09:49:55

10 **MR. CARSON: Objection to form.** 09:49:57

11 **A. Yes.** 09:49:58

12 **Q. It's one that you relied on in your** 09:50:00

13 **declaration; correct?** 09:50:05

14 **A. Yes.** 09:50:06

15 **Q. Where did you get Exhibit 1009?** 09:50:06

16 **A. At this point, I don't remember whether** 09:50:13

17 **it was provided to me by counsel, but I've also seen** 09:50:15

18 **it. It's on -- you can find it on the internet, is** 09:50:18

19 **what I'm saying. The basic label is readily** 09:50:22

20 **available.** 09:50:24

21 **Q. Okay.** 09:50:25

22 **Can you turn to the page that's** 09:50:27

32

1 labeled page 7 at the top. 09:50:30

A. Page 7. I see that now. 09:50:40

3 Q. The page has Attention at the top. 09:50:43

4 Do you see that? 09:50:45

5 **A.** **Correct. I see that.** 09:50:45

6 Q. Halfway down, there's Use Information. 09:50:47

7 Do you see that? 09:50:51

8 A. I do. 09:50:53

9 Q. Then the third bolded line says, "Use of 09:50:54

10 Adjuvants." 09:50:59

```
11 Do you see that? 09:51:01
```

A. I do.

13 Q. Then the -- the second paragraph under 09:51:02

14 that says, "A tank mixture with Dimethoate may cause 09:51:04

15 crop injury." 09:51:11

16 Do you see that? 09:51:12

17 **A.** I do see that. 09:51:13

18 Q. What is your understanding why a tank 09:51:13

19 mix of dimethoate with Elatus may cause crop injury? 09:51:17

20 MR. CARSON: Objection to form. 09:51:24

21 A. I do not have an understanding of why 09:51:25

22 that would be. I don't know why, but it's on the 09:51:27

33

1 label; therefore, it's a warning to not tank mix 09:51:30

2 that particular material with this. 09:51:34

3 The other tank mix instructions are 09:51:36

4 given in the label for Elatus. It doesn't preclude 09:51:39

5 tank mixing in any way, but that particular 09:51:44

6 chemical, dimethoate, must cause some type of 09:51:47

7 phytotoxicity when applied with Elatus. 09:51:50

8 Q. Can you turn to page -- the page that's 09:52:18

9 marked page 11 of Exhibit 1009. 09:52:19

10 I think you were referring to tank 09:52:29

11 mixtures, is this further information on Elatus 09:52:34

12 fungicide plus tank mixtures? 09:52:39

13 Are you on the page that says "Page 09:53:13

14 11" on the top right? 09:53:15

15 A. I am. On page 11, there's additional 09:53:16

16 information on Elatus fungicide and tank mixtures, 09:53:18

17 yes. 09:53:22

18 Q. Can you read in that first sentence 09:53:22

19 under those -- that additional information. 09:53:24

20 A. You're referencing the Elatus Fungicide 09:53:25

21 plus Tank Mixtures section in particular; correct? 09:53:30

22 Q. Correct. 09:53:32

34

A. Okay. 09:53:32

2 "Elatus fungicide is usually 09:53:33

3 compatible with all tank-mix partners listed on this 09:53:35

```
4    label."
```

5 Q. What do you understand "compatible" to 09:53:40

6 mean in that context? 09:53:42

7 A. In this case, it's actually referencing 09:53:43

8 the compatibility for application. And my -- and it 09:54:06

9 would also -- I would read that to say that you can 09:54:13

10 mix it with other materials, and they should be safe 09:54:16

```
11      to apply together.                                09:54:19
```

12 So it's a dual type of a 09:54:20

13 compatibility. 09:54:28

14 One is there is safety to the crop, 09:54:28

15 if you apply it with these materials, but then 09:54:30

16 **secondly, it actually does suggest that you do a** 09:54:32

17 physical compatibility-type test, a jar test, and 09:54:36

18 apply whatever materials you are going to put in the 09:54:40

19 tank mix together, and then try those to see if they 09:54:42

20 would, in fact, spray out, if you're putting them in 09:54:45

21 a spray, so they don't form a block in the bottom of 09:54:49

22 the tank. 09:54:53

35

1 And then the other aspect of that, 09:54:53
2 for me personally, I always recommend that producers 09:54:55
3 try a little bit of whatever tank mix they have on 09:54:58
4 the actual crop to see that there is not going to be 09:55:02
5 phytotoxicity, without regard to the label. 09:55:10

6 Q. So you understand "compatibility" in the 09:55:11
7 context of page 11 of Exhibit 1009 to cover both 09:55:13
8 compatibility as a fungicide applied to a plant and 09:55:17
9 physical compatibility for application from a tank? 09:55:21

10 MR. CARSON: Objection to form. 09:55:27

11 A. Define what you're saying about the 09:55:28
12 first part of that question. 09:55:36

13 Q. Well, maybe I'll just go back a little 09:55:37
14 bit. 09:55:39

15 You had -- I understood you had said 09:55:40
16 that it was a dual type of compatibility in your 09:55:44
17 understanding; is that correct? 09:55:47

18 A. Yes. 09:55:48

19 Q. The first one is -- the first type of 09:55:48
20 compatibility is safety to the crop; correct? 09:55:53

21 A. That is, and also compatibility with the 09:55:55
22 other products, so that the material is active, I 09:55:59

36

1 would add that as well. 09:56:02

2 Q. Okay. 09:56:04

3 So "compatibility" maybe has three 09:56:05
4 means in this context: One, safety to the crop, 09:56:14
5 two, chemical compatibility, and three, tank mix 09:56:24
6 compatibility? 09:56:30

7 A. I would look at compatibility as being 09:56:37
8 continued efficacy in a mix, as well as the 09:56:40
9 compatibility in the tank itself, meaning that the 09:56:44
10 chemicals don't lock up or form something that you 09:56:51
11 can't spray, and then crop safety. 09:56:54

12 Q. Okay. 09:56:56

13 A. There's nothing here that precludes you 09:57:00
14 from mixing the chemicals, that -- is what -- is how 09:57:02
15 I would interpret that, but you also need to be 09:57:06
16 aware that when you're mixing chemicals, certain 09:57:08
17 things do happen. 09:57:13

18 Q. The second sentence, can you read that 09:57:14
19 into the record. 09:57:16

20 A. "To determine the physical compatibility 09:57:17
21 of Elatus fungicide with other products, use a jar 09:57:23
22 test." 09:57:26

37

1 Q. That physical compatibility, that's 09:57:27
2 essentially what you were talking about as to 09:57:29
3 whether they can be mixed together in a tank? 09:57:32

4 A. That is correct. 09:57:35

5 Q. What is a jar test? 09:57:36

6 A. You basically literally take a jar, 09:57:40
7 usually what we would term a Mason jar, a glass jar, 09:57:48
8 and you put the materials that you're going to apply 09:57:52
9 in the tank mix, the same ratio with the same amount 09:57:55
10 of water that you would use as the carrier. And 09:58:02
11 then you shake that up in a jar, and you leave it 09:58:04
12 sitting for a while, and you see what happens to the 09:58:08
13 material. 09:58:10

14 In some cases, will you get a 09:58:11
15 precipitant that will come out, and -- that doesn't 09:58:13
16 necessarily preclude you from applying the material, 09:58:18
17 just means you really have to use agitation. 09:58:21

18 But if the products just lock up in 09:58:24
19 the jar, that's not a good thing. 09:58:27

20 Q. The jar test doesn't provide information 09:58:32
21 about plant safety; is that correct? 09:58:34

22 A. No. 09:58:36

38

1 Q. Is that correct? 09:58:36

2 A. That is correct, it does not apply -- 09:58:38

3 no. There's -- the jar test is for physical 09:58:40

4 compatibility. 09:58:43

5 Q. The jar test doesn't tell you anything 09:58:43

6 about continued efficacy; correct? 09:58:45

7 A. No. 09:58:49

8 Q. I am correct, right? 09:58:50

9 A. You are correct. 09:58:53

10 Q. Thanks. 09:58:53

11 A. That's correct. 09:58:54

12 Q. Sorry. My fault, probably, for the way 09:58:55

13 I asked the question. 09:58:58

14 So on page 11, that first sentence 09:58:59

15 we read, "Elatus fungicide is usually compatible 09:59:02

16 with all tank mix partners listed on the label." 09:59:05

17 Do you recall that? 09:59:10

18 A. Yes. 09:59:12

19 Q. Which tank mix partners are those 09:59:12

20 specifically to your understanding? 09:59:15

21 A. Can you go back and direct me to the 10:02:08

22 specific sentence you are referencing again? 10:02:58

39

1 Q. Top of page 11. 10:03:00

2 A. Top of page 11. 10:03:02

3 Q. Of Exhibit 1009, it says, "Elatus 10:03:03

4 fungicide is usually compatible with all tank mix 10:03:07

5 partners listed on this label." 10:03:10

6 A. In reviewing the document, I don't see a 10:03:16

7 specific list of tank mix partners. It does 10:03:18

8 reference, under use information, some of the 10:03:22

9 materials that you -- how you should address 10:03:29

10 adjuvants, and things of that nature. 10:03:34

11 It does -- on page 17, it says, "For 10:03:37

12 best performance, the addition of a 10:03:43

13 spreading/penetrating-type adjuvant such as 10:03:47

14 organo-silicon blends with either non-ionic 10:03:47

15 surfactants or vegetable-based crop oil" -- 10:03:58

16 (Clarification requested by the Court Reporter.) 10:03:58

17 MR. CARSON: Dr. Brannen, just slow 10:03:58

18 down when you read. 10:03:59

19 A. I'm sorry. 10:03:59

20 "For best performance, the addition 10:03:59

21 of a spreading/penetrating-type adjuvant such as 10:04:02

22 organo-silicon blends with either non-ionic 10:04:02

40

1 **surfactants or a vegetable-based crop oil** 10:04:02
2 **concentrate; or vegetable-based COC (not mineral);** 10:04:08
3 **or NIS with at least 90 percent concentration is** 10:04:27
4 **recommended unless otherwise stated in the specific** 10:04:34
5 **crop section.** 10:04:38

6 **For resistance management, make no** 10:04:40
7 **more than two sequential applications of a Group 7** 10:04:42
8 **fungicide unless otherwise specified in the** 10:04:47
9 **Directions of Use."** 10:04:51

10 **Within each of the individual crop** 10:05:24
11 **uses, there are references that are very similar to** 10:05:26
12 **the crop oil concentrate statements, and also** 10:05:31
13 **telling you not to -- or the specific language on** 10:05:36
14 **how many applications to make before switching to a** 10:05:41
15 **non-Group 7 or a Group 11 fungicide.** 10:05:44

16 **So, therefore, it would indicate** 10:05:47
17 **that you should switch to other fungicides with** 10:05:49
18 **different classes.** 10:05:53

19 Q. Beyond the information you read on 10:05:55
20 adjuvants, and noted comes up again later for 10:05:57
21 specific crops, Exhibit 1009 doesn't list any 10:06:03
22 fungicide tank mix partners for use with Elatus; 10:06:07

41

1 correct? 10:06:09

2 A. It does not specifically, as far as I 10:06:10
3 can tell, in the document, mention a fungicide, but 10:06:13
4 it does, within the remarks, tell you to switch to 10:06:18
5 other fungicides with different classes. 10:06:22

6 Q. You had been reading from the page -- 10:06:25
7 numbered page 17; correct? 10:06:28

8 A. That I read into the record? 10:06:35

9 Q. Correct? 10:06:37

10 A. That is correct. 10:06:38

11 Q. And if we could turn back there, I just 10:06:38
12 want to ask you another question about what you 10:06:40
13 read. 10:06:42

14 A. Okay. 10:06:42

15 Q. What are crop oil concentrates? 10:06:44

16 A. This is a -- in this case, they're 10:06:58
17 referencing a vegetable based crop oil concentrate. 10:07:01

18 So these are materials that will 10:07:05
19 have vegetable oils, for lack of a better way of 10:07:07
20 explaining that, that would have some benefit 10:07:16
21 relative to efficacy, because it does say "for best 10:07:19
22 performance," these are things that you can 10:07:24

42

1 **basically add to improve the efficacy.** 10:07:26

2 Q. How would a vegetable based crop oil 10:07:29

3 concentrate, to your understanding, improve 10:07:33

4 performance? 10:07:36

5 A. It could -- and again, I would speculate 10:07:46

6 to some degree on this, but the way these would work 10:07:49

7 is they can actually serve to spread the material on 10:07:52

8 the leaf more effectively, to bind the material to 10:07:55

9 the leaf more effectively, and potentially could 10:07:58

10 provide for penetration of the product more 10:08:03

11 effectively. 10:08:05

12 Q. Do you have an understanding of what 10:08:06

13 "not mineral" means, in parentheses, in the portion 10:08:08

14 you read on page 17? 10:08:11

15 A. "Not mineral" would mean that it's not a 10:08:13

16 mineral crop oil concentrate, is how I would 10:08:41

17 interpret that. 10:08:44

18 Q. What is a mineral crop oil concentrate? 10:08:45

19 A. I don't know that I can define for you 10:08:48

20 what the specific minerals would be in a mineral 10:09:00

21 crop oil concentrate. 10:09:04

22 Q. Just generally, without defining the 10:09:05

43

1 specific minerals, what's your understanding of a 10:09:07

2 mineral oil concentrate? 10:09:10

3 MR. CARSON: Objection to form. 10:09:13

4 A. My understanding is no more than beyond 10:09:18

5 what you just said. It's a mineral oil concentrate. 10:09:21

6 I don't know beyond that what it is. 10:09:25

7 Q. What difference is there, if any, 10:09:27

8 between a crop oil concentrate and -- well, let me 10:09:32

9 back up. 10:09:39

10 Is vegetable oil a crop oil 10:09:39

11 concentrate? 10:09:47

12 MR. CARSON: Objection to form. 10:09:54

13 A. I am not aware of vegetable oil itself 10:09:55

14 being utilized as a crop oil concentrate. 10:10:00

15 Q. Can you -- 10:10:04

16 A. This says specifically a vegetable-based 10:10:05

17 crop oil concentrate, but admittedly, you're getting 10:10:10

18 into an area that I don't -- I don't deal in very 10:10:12

19 much at all, other than to add these materials at 10:10:15

20 certain points. 10:10:18

21 Q. I apologize for asking if this isn't an 10:10:19

22 area that you've studied, but can you give me a 10:10:46

44

1 specific example of a crop oil concentrate? 10:10:48

2 A. My memory does not serve me well in 10:10:50
3 that. I've utilized products that fall in that 10:11:27
4 category, or at least in the mineral oil category 10:11:31
5 before. 10:11:34

6 I cannot remember the name, for 10:11:35
7 sure, of the product. I have one in mind, but I'm 10:11:40
8 afraid it won't be a crop oil -- I think it's a 10:11:43
9 mineral oil. I have used some mineral oils -- I 10:11:47
10 have done testing on mineral oils before, but a 10:11:50
11 specific name, I cannot give you. 10:11:53

12 Q. Do you have an understanding of why the 10:11:54
13 Elatus label is recommending against use of mineral 10:11:58
14 oil with Elatus? 10:12:03

15 MR. CARSON: Objection to form. 10:12:07

16 A. There is a reference under Use of 10:12:55
17 Adjuvants, and it says, "Under certain weather 10:12:58
18 conditions" -- 10:13:03

19 Q. I apologize. Do you mind telling me 10:13:04
20 where you are reading? 10:13:06

21 A. Yes. Page 7. Page 7, under Use of 10:13:07
22 Adjuvants. 10:13:11

1 **"Use of Adjuvants. Under certain** 10:13:14
2 **weather conditions (particularly high temperatures),** 10:13:19
3 **Elatus Fungicide in combination with high rates of** 10:13:23
4 **silicone-based or oil-containing (petroleum or crop)** 10:13:26
5 **additives or adjuvants may cause injury. Do not** 10:13:35
6 **exceed 0.125 percent adjuvant, (v/v)," which is** 10:13:39
7 **volume to volume. "Consult a Syngenta** 10:13:46
8 **representative for more information concerning** 10:13:52
9 **additives or adjuvants."** 10:13:54

10 Q. So page 7 is giving a volume-based 10:13:59
11 limitation on the use of oils; correct? 10:14:02

12 A. **Yes. That appears to be correct.** 10:14:06

13 Q. And that volume-based limitation would 10:14:08
14 apply to the vegetable oils referred to on page 17; 10:14:11
15 correct? 10:14:19

16 MR. CARSON: Objection to form. 10:14:20

17 A. **I think that is the case, based on what** 10:16:10
18 **I am reading.** 10:16:13

19 Q. So on page 17, the recommendation 10:16:15
20 against using mineral oil is different. It's not a 10:16:18
21 percent of mineral oil. It's just recommending 10:16:24
22 against mineral oil, per se; correct? 10:16:26

46

1 MR. CARSON: Objection to form. 10:16:28

2 A. I don't know that it precludes 10:17:23

3 specifically the use of a mineral oil. It says, 10:17:27

4 "for best performance, the addition of these 10:17:33

5 materials..." 10:17:38

6 So I'm not sure in the reading of 10:17:40

7 that, that it would preclude that you could not use 10:17:42

8 a mineral oil, but it appears to be saying that a 10:17:46

9 mineral oil, as compared to a vegetable oil, may not 10:17:48

10 provide the best performance. 10:17:51

11 That's how I would have to -- if you 10:17:54

12 read through that carefully. 10:17:55

13 Q. And do you have an understanding of why 10:17:57

14 mineral oil would be different -- different in terms 10:18:01

15 of performance than the other oils? 10:18:03

16 A. I do not. 10:18:06

17 Q. You had said that you have done testing 10:18:07

18 on mineral oils before; do you recall that? 10:18:11

19 A. I have utilized, by memory, what I 10:18:14

20 think -- I think it was mineral oils that were used 10:18:21

21 in some peach trials that we did, but I'm going by 10:18:24

22 memory. 10:18:27

47

1 Q. I'm sorry. Some what trials? 10:18:28

2 A. Peach trials. 10:18:29

3 Q. What you said earlier was that you've 10:18:30

4 done testing on mineral oils, is that what you are 10:18:32

5 referring to, the peach trials? 10:18:35

6 A. Utilizing mineral oil in addition to 10:18:37

7 other fungicides for control of a certain disease. 10:18:40

8 Q. What effects did you see, if any, based 10:18:42

9 on the use of mineral oil? 10:18:45

10 MR. CARSON: Objection to form. 10:18:47

11 A. The use of the mineral oil actually 10:18:47

12 increased the performance of the fungicide in the 10:18:55

13 case of the trials we were conducting. 10:18:58

14 Q. Did you test -- can you explain a little 10:19:00

15 bit more of what test arms -- what arms there were 10:19:04

16 to that test? What comparisons you did in that 10:19:07

17 test? 10:19:11

18 A. Yes. 10:19:13

19 In that particular case, again, 10:19:13

20 these were peach trials, and we're looking at the 10:19:16

21 addition of oil in either -- well, we did tests by 10:19:18

22 itself -- we did have tests with the oil by itself, 10:19:25

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1 and we also had tests with the oil, particularly 10:19:27

2 with chlorothalonil fungicide. 10:19:30

3 And the tests were conducted in the 10:19:39

4 winter time frame, and we were applying the 10:19:41

5 materials with the goal of reducing fungal 10:19:45

6 populations for peach scab. 10:19:48

7 Q. For peach scab? 10:19:52

8 A. For peach scab. 10:19:53

9 Q. Presumably, you had a control where you 10:19:54
10 applied nothing; is that true? 10:19:56

11 A. That is true. 10:19:57

12 Q. So you had a control where you applied 10:19:58
13 nothing, you had oil by itself, and you had oil plus 10:20:00
14 the active fungicide you referred to; correct? 10:20:04

15 A. That's correct, in various combinations 10:20:07
16 over time with different trials, yes. 10:20:10

17 Q. What effect, if any, did you see for the 10:20:12
18 oil relative to the control? 10:20:14

19 A. The oil, relative to control, did not 10:20:19
20 provide particularly good efficacy by comparison to 10:20:21
21 oil with a fungicide. 10:20:25

22 Q. What do you mean by not particularly 10:20:28

1 good efficacy? 10:20:30

2 A. Well, as my memory is serving me, I 10:20:31

3 don't think we had any statistical difference at all 10:20:34

4 between the oil itself and the untreated control. 10:20:36

5 Q. Why did you test the oil by itself? 10:20:38

6 A. We would test the components that we're 10:20:40

7 putting in the mix to see how they perform 10:20:45

8 separately. 10:20:48

9 Q. Did you have an expectation that the oil 10:20:48

10 could have some effect on the fungus, oil by itself? 10:20:51

11 A. It is possible that an oil by itself can 10:20:56

12 have an effect on a fungus, but it can be a negative 10:21:08

13 effect as well. In a sense, you can actually 10:21:16

14 increase disease sometimes by applying oils. 10:21:19

15 Q. Can you turn to Exhibit 1011, and 10:21:22

16 identify what this is. 10:21:38

17 (Previously marked Exhibit 1011, A World Compendium, 10:21:39

18 The Pesticide Manual, Seventeenth Edition, was 10:21:39

19 presented.) 10:21:40

20 A. Again, to make sure, this is The 10:21:40

21 Pesticide Manual that you're referencing; correct? 10:21:47

22 Q. I think so, yes. 10:21:50

50

A. **Okay. Yes.**

2 Q. Can you identify what The Pesticide 10:21:52

3 Manual is? 10:21:54

4 A. It is a -- it's a resource that will 10:21:55

```
5 list pesticides and give some pertinent information 10:22:03
```

6 that would be of value to those who work with 10:22:08

7 pesticides in particular. 10:22:13

8 It has nomenclature, physical 10:22:16

9 chemistry, water solubility, commercialization 10:22:20

```
10 history, applications, compatibility information, 10:22:25
```

11 analysis, toxicological and environmental reviews, 10:22:28

12 various types of toxicity, environmental fate. 10:22:38

13 So that's -- it contains those 10:22:45

14 materials. So it's a general overview document that 10:22:47

15 contains a lot of information on specific materials. 10:22:50

16 Q. It includes fungicides, not just 10:22:53

17 pesticides, per se; is that correct? 10:22:56

18 A. That is correct. 10:22:58

19 Q. Does it include information on known 10:22:59

```
20 fungicide incompatibilities? 10:23:02
```

21 A. How are you defining "incompatibility"? 10:23:04

22 Q. Does it include any information on any 10:24:11

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1 type of incompatibility for fungicides? 10:24:13

2 MR. CARSON: Objection to form. 10:24:16

3 A. Again, how are you defining 10:24:21

4 "incompatibility" in your definition? 10:24:24

5 Q. How would a person of ordinary skill in 10:24:26

6 the art understand "incompatibility" for fungicides? 10:24:29

7 A. So we're going back to -- so we can go 10:24:32

8 back to my original comments as far as that. I just 10:24:34

9 want to make sure I'm on the same page with you. 10:24:38

10 There is a -- there are references 10:24:40

11 to phytotoxicity in here, for sure, so you do see 10:24:43

12 that within these documents. 10:24:47

13 There are references to selected 10:24:49

14 mixtures, in some cases, as far as production. 10:24:52

15 So in that respect, yes. 10:25:00

16 Q. So, yes, Exhibit 1011 includes some 10:25:04

17 information on incompatibilities, such as 10:25:08

18 phytotoxicity? 10:25:13

19 A. It does. 10:25:13

20 For example, I'm looking at 10:25:16

21 azoxystrobin. I just randomly pulled that from the 10:25:19

22 top of page 67. It has phytotoxicity. It says, 10:25:22

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1 "Good crop safety, except on some varieties of 10:25:26

2 apple," for example, e.g., McIntosh or Cox. 10:25:30

3 Q. Conversely, does Exhibit 1011 provide 10:25:40

4 affirmative information on compatibilities -- 10:25:47

5 MR. CARSON: Objection to form. 10:25:51

6 Q. -- of fungicides? 10:25:52

7 MR. CARSON: Objection to form. 10:25:54

8 A. You are referencing which other 10:27:03

9 chemicals or fungicides that a material that's 10:27:05

10 listed in here can be applied with when you're 10:27:07

11 asking that question; correct? 10:27:09

12 Q. Correct. 10:27:12

13 A. As far as I can see, it does not 10:27:13

14 specifically address compatibilities in this 10:27:14

15 document. 10:27:21

16 Q. Can you turn to -- well, is -- I -- 10:27:22

17 sorry. I'm going to start again. 10:27:34

18 Again, you relied on Exhibit 1011; 10:27:36

19 correct? 10:27:39

20 A. I did. 10:27:39

21 Q. Is this, in your opinion, the type of 10:27:39

22 reference that a person of ordinary skill in the art 10:27:41

53

1 would rely on? 10:27:43

2 A. Yes. 10:27:44

3 Q. Can you turn to the page numbered 93 for 10:27:45
4 the entry for benzovindiflupyr. 10:27:50

5 A. I'm already there. 10:27:54

6 Q. Fantastic. 10:27:56

7 It indicates -- there's a section on 10:27:57
8 commercialization. 10:28:04

9 Do you see that? 10:28:05

10 A. Yes. 10:28:05

11 Q. It says, "First sold in Paraguay in 10:28:06
12 2012." 10:28:12

13 Do you see that? 10:28:12

14 A. I do see that. 10:28:13

15 Q. Are you familiar with benzovindiflupyr? 10:28:14

16 MR. CARSON: Objection to form. 10:28:19

17 A. In what aspect are you asking me if I'm 10:28:19
18 familiar with it? 10:28:25

19 Q. Other than your work on this case, do 10:28:26
20 you have background knowledge of benzovindiflupyr? 10:28:30

21 A. I do. 10:28:32

22 Q. Do you have an understanding of when 10:28:33

54

1 benzovindiflupyr was first developed prior to when 10:28:36

2 it was sold? 10:28:42

3 **A. Not from my knowledge, directly, no.** 10:28:43

4 Q. Is there a fungicide referred to as 10:28:48

5 Bordeaux mixture that you're familiar with? 10:29:06

6 **A. Yes.** 10:29:09

7 Q. What is Bordeaux mixture? 10:29:10

8 **A. It's an old fungicide that's** 10:29:12

9 **basically -- I don't have the chemical formula in my** 10:29:15

10 **head at the moment, but it's a copper sulfate and** 10:29:19

11 **lime product, historically used as a fungicide.** 10:29:21

12 Q. Does Exhibit 1011 provide any 10:29:25

13 information on the compatibility of benzovindiflupyr 10:29:30

14 with Bordeaux mixture? 10:29:34

15 **A. I do not see any reference to** 10:29:37

16 **compatibility with Bordeaux mixture on that page.** 10:30:08

17 Q. Just to be clear, it looks like the 10:30:12

18 entry for benzovindiflupyr continues onto page 94; 10:30:14

19 is that correct? 10:30:19

20 **A. Yes.** 10:30:21

21 Q. Are you considering the full entry for 10:30:21

22 benzovindiflupyr in your answer? 10:30:23

55

A. Yes. 10:30:24

2 Q. Is chlorine a fungicide? 10:30:25

3 A. I think it would be correct to say that 10:30:48

4 at certain concentrations, it can have fungicidal 10:30:51

```
5  activity.                                     10:30:55
```

6 Q. How is it applied as a fungicide? 10:30:55

7 MR. CARSON: Objection to form. 10:30:59

8 A. It's not really applied as a fungicide, 10:30:59

9 per se, and generally at the rates that are 10:31:08

10 utilized, say, in a packing shed, and that's where 10:31:13

11 I'm referencing, something like that. The rates are 10:31:21

12 too low for it to have fungicidal activity, but if 10:31:22

13 you were to increase the rate sufficiently, you can 10:31:25

14 have some activity against fungi. 10:31:28

15 It's not -- I don't think it's 10:31:32

16 generally registered as a fungicide or utilized as a 10:31:33

17 fungicide, but if you apply it at rates that are 10:31:37

18 higher than are normally utilized, I think you can 10:31:39

```
19      have some activity.                                     10:31:42
```

20 Q. What physical form is it applied in; for 10:31:43

21 example, is it applied as an aqueous solution? 10:31:46

22 MR. CARSON: Objection to form. 10:31:53

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1 **A. I do not know. I have never worked with** 10:31:53

2 **it in that context, so I do not know.** 10:31:55

3 **Q. So it might be applied as a gas?** 10:31:56

4 **A. I do not know.** 10:31:58

5 **Q. The entry for benzovindiflupyr in** 10:31:59

6 **Exhibit 1011, does it provide any information on** 10:32:06

7 **compatibility of benzovindiflupyr with chlorine?** 10:32:09

8 **A. I do not see any reference to chlorine** 10:32:14

9 **in the document that I can readily observe, anyway.** 10:33:28

10 **Q. Are you familiar with the material** 10:33:37

11 **dichloropropene?** 10:33:40

12 **A. Is there another name that it's known** 10:33:52

13 **by? I'm --** 10:33:56

14 **Q. Not that I know of.** 10:33:56

15 **A. Okay. I'm not sure.** 10:33:57

16 **Q. Okay.** 10:34:02

17 Can you turn in Exhibit 1011 to the 10:34:13

18 **entry for mancozeb. It begins on the page numbered** 10:34:19

19 **689.** 10:34:24

20 **A. So we're still on 1011?** 10:34:34

21 **Q. Correct.** 10:34:38

22 **A. And what page did you say?** 10:34:38

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1 Q. It's the page numbered 689, entry 501 10:34:39

2 for mancozeb. 10:34:45

3 A. I am there. 10:34:52

4 Q. Okay. 10:34:53

5 I trust you are familiar with 10:34:53

6 mancozeb, Doctor? 10:34:55

7 A. I am. 10:34:58

8 Q. Does the entry for mancozeb in 10:34:58

9 Exhibit 1011 provide any information on 10:35:02

10 compatibility of mancozeb with Bordeaux mixture? 10:35:04

11 A. I don't see any reference to Bordeaux 10:36:45

12 mixture in this mancozeb section. Let me go to -- 10:36:47

13 I'm going to go to the next page as well, though. 10:36:57

14 Right. There's another page here. 10:36:59

15 I do not see any reference to 10:37:21

16 Bordeaux mixture. 10:37:22

17 Q. The mancozeb entry in Exhibit 1011 does 10:37:22

18 have a section on compatibility on page 690; 10:37:25

19 correct? 10:37:33

20 A. It does. 10:37:33

21 Q. It says, "Not compatible with oxidizing 10:37:35

22 agents or acids." 10:37:39

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1 Do you see that? 10:37:41

2 A. I do see that. 10:37:41

3 Q. What is an oxidizing agent? 10:37:42

4 A. You know, I don't have a good definition 10:37:45
5 for an oxidizing agent. 10:38:01

6 Q. Do you know what fungicides are or are 10:38:03
7 not oxidizing agents? 10:38:06

8 MR. CARSON: Objection to form. 10:38:08

9 A. Again, I'm going by memory, but -- I 10:38:15
10 probably shouldn't do that. Actually, I don't want 10:38:21
11 to make a definite statement on that because I could 10:38:24
12 be incorrect when I assess that. 10:38:26

13 Q. Well, just to -- if the answer is no, 10:38:29
14 it's fine, but do you know of any fungicides that 10:38:31
15 are oxidizing agents? 10:38:33

16 A. I don't know of ones that I can 10:38:35
17 definitely say to you, this is an oxidizing agent. 10:38:38

18 Q. Are you aware of fungicides that you can 10:38:42
19 definitely say they are not oxidizing agents? 10:38:46

20 A. No. I really -- I would prefer not to 10:38:50
21 answer beyond what I know, and I don't have a direct 10:38:53
22 knowledge of oxidizing agents relative to 10:38:56

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1 **fungicides.** 10:38:59

2 Q. Do you know why mancozeb is not 10:38:59

3 compatible with oxidizing agents? 10:39:01

4 A. **I do not.** 10:39:03

5 Q. Then the compatibility also says 10:39:04

6 mancozeb is not compatible with acids. 10:39:08

7 Do you see that? 10:39:10

8 A. **I do see that.** 10:39:10

9 Q. Do you know why mancozeb is not 10:39:11

10 compatible with acids? 10:39:13

11 A. **I do not.** 10:39:14

12 Q. Do you know -- are you aware of 10:39:15

13 fungicides that are acidic? 10:39:18

14 A. **Yes.** 10:39:21

15 Q. Can you -- do you have some examples in 10:39:22

16 mind? 10:39:23

17 A. **Phosphorous acid-type products are the** 10:39:25

18 **ones that come to mind most immediately.** 10:39:28

19 Q. Anything else? 10:39:30

20 A. **No. That doesn't mean they're not** 10:39:31

21 **there, but I don't have them in my brain as** 10:39:40

22 **fungicides that are acidic.** 10:39:44

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1 Q. Can you turn to Exhibit 1008. 10:39:47

2 (Previously marked Exhibit 1008, APS Southern 10:39:47

3 Division, 2015 Southern Division Meeting Abstracts, 10:39:47

4 was presented.) 10:40:08

5 A. Again, to confirm, this is the physical 10:40:08

6 characteristics of insecticide, spraying liquids 10:40:10

7 with mineral oil? 10:40:15

8 Q. It's good that you are checking because 10:40:16

9 I don't think so. 10:40:18

10 Exhibit 1008 in my copy is APS 10:40:18

11 Southern Division, 2015 Southern Division Meeting 10:40:23

12 Abstracts. 10:40:24

13 A. Let's go back. 10:40:26

14 Q. It is 1008. And I have a copy for you, 10:40:30

15 if you need it. 10:40:37

16 MR. CARSON: Dr. Brannen, it was 10:40:39

17 1008, not 1 -- 10:40:42

18 A. Oh, oh, oh. I'm sorry. 10:40:44

19 Q. We have copies of all the premarked 10:40:49

20 ones, too, if you want more copies, counsel. 10:40:53

21 A. Okay. 1008, 2015 Southern Division 10:41:01

22 Meeting Abstracts. 10:41:05

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1 Q. Just to make the record super clear, 10:41:05
2 what is Exhibit 1008? 10:41:08

3 A. These are the -- it's probably a partial 10:41:10
4 listing, I would think, of the abstracts -- well, it 10:41:16
5 could be -- from the Southern Division, it could be 10:41:19
6 the whole listing. 10:41:21

7 But this is the Southern Division 10:41:22
8 Meeting Abstracts. These are the abstracts from 10:41:24
9 presentations at the 2015 Southern Division of APS 10:41:26
10 meetings. 10:41:31

11 Q. Do you know how you obtained a copy of 10:41:35
12 Exhibit 1008? 10:41:37

13 A. This was provided to me by counsel. 10:41:38

14 Q. To your understanding, are the abstracts 10:41:47
15 in Exhibit 1008 peer reviewed? 10:41:49

16 A. They're not peer reviewed in the 10:41:52
17 classical sense. They would have -- in other words, 10:42:10
18 when you turn in an abstract like this, there would 10:42:12
19 be somebody who would review it before it's 10:42:15
20 published, but it's not blind reviewed. 10:42:17

21 Q. You understand that the abstracts in 10:42:23
22 Exhibit 1008 were reviewed for what purpose, what 10:42:30

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1 type of review? 10:42:33

2 A. The -- normally, when these abstracts 10:42:34

3 are turned in for this type of meeting, somebody 10:42:36

4 will be in charge of the meeting, and there would be 10:42:38

5 somebody who would be charged with making sure that 10:42:40

6 the submission makes sense academically. 10:42:46

7 Again, it's not done at the same 10:42:49

8 level as you would for a peer-reviewed paper, and 10:42:51

9 also that it reads well enough that you can put it 10:42:54

10 in the abstracts. 10:42:57

11 So at least somebody would have 10:42:58

12 looked at it. It would not go in directly without 10:42:59

13 somebody at least reviewing it to that degree. 10:43:02

14 Q. You rely on an entry by Wiglesworth that 10:43:04

15 is on page 11, I believe; is that correct? 10:43:10

16 A. S2.11, is that what you are looking at? 10:43:16

17 Q. It is. 10:43:21

18 Do you understand that the 10:43:23

19 Wiglesworth abstract is something presented from 10:43:25

20 Syngenta? 10:43:30

21 A. It -- Yes. 10:43:36

22 Q. Is it effectively a notice of commercial 10:43:36

1 availability of multiple products? 10:43:40

2 MR. CARSON: Objection to form. 10:43:58

3 A. Can you define "commercial 10:44:04

4 availability," please? 10:44:07

5 Q. Well, do you see four or five lines 10:44:11

6 down, it says, "Four products will be launched"; do 10:44:15

7 you see that? 10:44:26

8 A. I do. I'm going to the next page first 10:44:26

9 to quickly review what is on the next page. 10:44:29

10 Okay. I'm back with you. 10:44:44

11 Q. Do you understand the reference to "four 10:44:46

12 products will be launched" as a reference to 10:44:48

13 commercial availability of Syngenta products? 10:44:51

14 A. From my reading of this, it was 10:45:00

15 registered in Brazil and Paraguay, as currently 10:45:05

16 registered at that time. 10:45:11

17 As far as US registrations, based on 10:45:12

18 my reading, it says, "Four products will be 10:45:15

19 launched: Aprovia (solo), Aprovia Top (plus 10:45:16

20 difenoconazole), Elatus (plus azoxystrobin), and 10:45:24

21 Trivapro (a copack with azoxystrobin and 10:45:28

22 propiconazole)." (As read.) 10:45:34

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1	So those materials were to be	10:45:39
2	launched.	10:45:40

3	I don't know if you are talking	10:45:40
4	about commercial availability or EPA registration at	10:45:42
5	that time, but your question -- can you repeat your	10:45:46
6	question one more time?	10:45:50

7 Q. I'm going to break it down a little bit. 10:45:52

A. Okay. 10:45:53

9 Q. We're looking at this sentence that 10:45:54
10 says, "Four products will be launched." 10:45:56

A. **Okay.**

12 Q. What is your understanding of "launched" 10:45:58
13 in the context of this Wiglesworth abstract? 10:46:01

A. That they will be commercially available, and that they will be marketed.

10:46:05

10:46:11

16	Q. So the Wiglesworth abstract is	10:46:15
17	disclosing the commercial availability -- or the	10:46:18
18	future commercial availability and marketing of four	10:46:22
19	products; correct?	10:46:27

20 A. Again, as far as I can tell from this 10:46:28
21 reference, but I don't know whether these were 10:46:35
22 already EPA labeled or not. 10:46:38

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1 So it depends on your definition 10:46:41

2 of -- well, here, they're talking about launched. 10:46:42

3 So again, we're talking about marketing and sales, 10:46:47

4 but I don't know when they were actually available 10:46:51

5 through an EPA registration. 10:46:54

6 Q. Is this type of launch notice something 10:46:56

7 that you would rely on in your own scientific 10:47:02

8 publications as support? 10:47:07

9 MR. CARSON: Objection to form. 10:47:09

10 A. It is sufficient for the information it 10:47:10

11 provides in that it basically gives a background on 10:47:18

12 the materials that will be sold. It gives you some 10:47:23

13 information on activity. It tells you some of the 10:47:30

14 materials that are -- where the key strengths of the 10:47:35

15 fungicide would be, such as Asian soybean rust, 10:47:40

16 Phakopsora pachyrhizi, and then it lists other 10:47:50

17 diseases as well. 10:47:52

18 It gives generally some idea of the 10:47:53

19 use rates, and tells where it will be positioned in 10:47:55

20 different markets as well. 10:47:58

21 So it's a good overview of what the 10:48:00

22 plans were for the product at that time with some 10:48:09

1 **additional information thrown in there, but it is an** 10:48:13

2 **abstract.** 10:48:16

3 Q. Do you have an understanding of why 10:48:25

4 there are four different benzovindiflupyr products, 10:48:26

5 according to the Wiglesworth abstract? 10:48:28

6 MR. CARSON: Objection to form. 10:48:31

7 A. That's a company decision as to how they 10:48:47

8 launch their products, and how they differentiate 10:48:50

9 the markets that they have, but I'm not privileged 10:48:53

10 or have any information as to why they made those 10:48:54

11 **decisions.** 10:48:57

12 Q. In terms of applications, do you have an 10:48:57

13 understanding of the different uses of the four 10:48:59

14 benzovindiflupyr products that are identified? 10:49:03

15 A. Do you mean specifically now as to what 10:49:09

16 different crops they're applied to, or things of 10:49:12

17 that nature, or what are you asking? 10:49:15

18 Q. Well, I mean, just do it in the --in 10:49:30

19 this context: In your opinion, what would a person 10:49:31

20 of ordinary skill in the art reading Wiglesworth 10:49:36

21 understand about the different applications, if any, 10:49:39

22 for the different benzovindiflupyr products 10:49:42

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1 identified in Wiglesworth? 10:49:43

2 A. Like, in -- look at -- you have within 10:49:47

3 this, you have the solo product, which is Aprovia. 10:49:51

4 And then you have Aprovia plus 10:49:57

5 another mode of action, difenoconazole. 10:49:59

6 And then you have Elatus, which is 10:50:05

7 the Aprovia basically plus azoxystrobin. 10:50:07

8 And then you have the Trivapro, 10:50:09

9 which is the copack with azoxystrobin and 10:50:14

10 propiconazole. 10:50:18

11 So as a person of ordinary skill in 10:50:18

12 the art, I would look at that and say that those are 10:50:26

13 products that will be developed that will broaden 10:50:28

14 the efficacy of the total product, the marketed 10:50:30

15 product, as well as providing resistance management 10:50:33

16 through the combinations that are shown there. 10:50:37

17 Q. So I apologize, maybe I'm not asking my 10:50:41

18 question clearly enough, but would a person of 10:50:44

19 ordinary skill reading the Wiglesworth abstract 10:50:48

20 understand that the four benzovindiflupyr products 10:50:51

21 are all for the same applications, or that some are 10:50:56

22 for different applications? 10:51:00

1 A. I may not understand what you mean by 10:51:38
2 "applications," but to read further in the document, 10:51:40
3 if you are talking about application being the type 10:51:41
4 of plants to which these products will be applied, 10:51:44
5 specifically, there are references in the document 10:51:47
6 to peanut, with Elatus. 10:51:52

7 It says, "Elatus will be positioned 10:51:55
8 in peanut where it has shown excellent residual 10:51:59
9 activity of early leafspot (Cercospora 10:52:04
10 arachidicola), late leafspot (Cercosporidium 10:52:04
11 personatum), peanut rust (Puccinia arachidis), and 10:52:04
12 Southern Blight (Sclerotium rolfsii)." 10:52:04

13 So that's one reference to a 10:52:21
14 specific use for Elatus. 10:52:22

15 May not be the only use for Elatus, 10:52:24
16 but they are at least referencing a use for Elatus. 10:52:27

17 And then below, it says, "Aprovia 10:52:31
18 Top," as another example, "provided excellent 10:52:35
19 powdery mildew and gummy stem blight control in 10:52:38
20 cucurbits." 10:52:45

21 But that's the only references that 10:52:47
22 I see here to specific use patterns or uses for 10:52:48

```
1 commodities. 10:52:51
```

2 Q. Elatus is a combination of 10:52:51

3 benzovindiflupyr with azoxystrobin; correct? 10:52:52

A. Yes. That is correct. 10:52:54

5 Q. Aprovia Top is benzovindiflupyr plus 10:52:56

```
6 difenoconazole; correct? 10:53:02
```

7 A. Correct. 10:53:04

8 Q. Do you have an understanding or -- let 10:53:05

9 me back up. 10:53:07

10 What understanding would a person of 10:53:08

11 ordinary skill in the art have on why Elatus, that 10:53:11

```
12 includes benzovindiflupyr is positioned for peanuts 10:53:14
```

13 while Aprovia top with difenoconazole is described 10:53:23

14 for use in cucurbits? 10:53:30

A. Cucurbits.

16	Q.	Cucurbits.	10:53:42
----	----	------------	----------

17 A. There, again, I would speculate based on 10:53:46

18 what the company -- because I don't -- I'm not 10:53:48

19 privileged to know what the company actually was 10:53:51

20 thinking at that time. But if you're trying to 10:53:53

21 expand your activity against specific pathogens that 10:53:59

22 are present in those commodities, then you would 10:54:01

1 **select materials that would make the most sense for** 10:54:06

2 **those markets.** 10:54:07

3 Q. Okay. 10:54:12

4 MR. CARSON: Mr. Feldstein, we have 10:54:15

5 been going for, I think a little over an 10:54:16

6 hour-and-a-half, can we take a break? 10:54:19

7 MR. FELDSTEIN: That's fine. 10:54:20

8 How long would you like? 10:54:21

9 Why don't we go off the record. 10:54:25

10 THE VIDEOGRAPHER: Time is 10:54:27

11 10:55 a.m. We are now off the record. 10:54:29

12 (RECESS, 10:55 a.m. - 11:09 a.m.) 10:54:31

13 THE VIDEOGRAPHER: Time is 11:08:36

14 11:09 a.m. We are now on the record. 11:08:37

15 BY MR. FELDSTEIN: 11:08:39

16 Q. Doctor, you said you were familiar with 11:08:41

17 the fungicide mancozeb; right? 11:08:42

18 A. Yes. 11:08:45

19 Q. Does mancozeb have any application 11:08:45

20 requirements that are different from other 11:08:49

21 fungicides? 11:08:52

22 MR. CARSON: Objection to form. 11:08:54

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1 **A. In what respect are you referencing** 11:09:01
2 **application requirements?** 11:09:03

3 **Q. Are there any unique requirements for** 11:09:04
4 **how mancozeb is used compared to other fungicides?** 11:09:06

5 MR. CARSON: Objection to form. 11:09:12

6 **A. Mancozeb is generally applied at higher** 11:09:13
7 **rates than some of the more modern fungicides, some** 11:09:23
8 **of the more recent fungicides. It generally does** 11:09:29
9 **not cause any issues, though, but as far as** 11:09:32
10 **application methods, I'm not aware of anything** 11:09:35
11 **that's particularly different about mancozeb than** 11:09:40
12 **other fungicides.** 11:09:42

13 **Q. What about timing? Does the timing of** 11:09:43
14 **mancozeb application differ from other fungicides?** 11:09:44

15 **A. Timing in what respect?** 11:09:50

16 MR. CARSON: Objection to form. 11:09:52

17 **Q. When you apply it to a plant.** 11:09:53

18 **A. Mancozeb is generally a protectant-type** 11:10:00
19 **material; therefore, relative to the fungus, it** 11:10:08
20 **should be applied before the fungal infection.** 11:10:16

21 Relative to the plant, there's not a 11:10:19
22 **timing issue, as far as -- any different than any** 11:10:21

1 other fungicide. When you can tank mix, mancozeb 11:10:26
2 with a systemic material at the same time, and in 11:10:33
3 that case, the mancozeb is providing a 11:10:40
4 protective-type response towards the fungus. And 11:10:43
5 then the other materials, if they are systemic, if 11:10:48
6 they are systemic, then they would go inside the 11:10:53
7 plant, and provide oftentimes curative-type response 11:10:55
8 or some kickback, but also protectant as well. 11:11:01

9 Q. So once a fungus has already -- I'm not 11:11:05
10 sure of the proper term, but become resident in or 11:11:10
11 on the plant, mancozeb is not an effective 11:11:14
12 fungicide? 11:11:17

13 A. Once the -- if, in fact, you've had an 11:11:18
14 infection event, in which the fungus is already 11:11:21
15 inside the leaf, for example, or the fruit, mancozeb 11:11:27
16 is not generally effective in that case because it 11:11:33
17 is not a systemic material. 11:11:37

18 Q. I'm sure this is not the right term in 11:11:40
19 the fungicide art, but is what you were saying that 11:11:48
20 mancozeb basically is a topical, or surface -- I'm 11:11:54
21 going to start again. 11:11:59

22 Is mancozeb applied to stay on the 11:11:59

1 outer surface of the plant; is that the use of it? 11:12:08

2 MR. CARSON: Objection to form. 11:12:13

3 A. When you apply mancozeb, it is 11:12:13

4 considered to be a contact protectant-type material. 11:12:19

5 So it does not penetrate the plant and, it does stay 11:12:25

6 on the surface of the plant part, whatever that 11:12:28

7 might be. 11:12:31

8 Q. Mancozeb provides its effect by being on 11:12:33

9 the surface of the plant; correct? 11:12:37

10 MR. CARSON: Objection to form. 11:12:39

11 A. Mancozeb is on the surface of the plant. 11:12:39

12 I don't know that you'd say it applies -- repeat the 11:12:46

13 question, please. I'm sorry. 11:12:49

14 Q. Mancozeb provides anti-fungal effect by 11:12:50

15 being on the surface of the plant; is that correct? 11:12:54

16 MR. CARSON: Objection to form. 11:12:56

17 A. It doesn't specifically -- it is the 11:12:57

18 location where it acts is on the surface of the 11:13:03

19 plant, if that makes sense to you. 11:13:08

20 Q. Yep. 11:13:10

21 Mancozeb is a multi-site fungicide; 11:13:11

22 is that accurate? 11:13:16

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A. That is correct. 11:13:16

2 Q. What does that mean to be a multi-site? 11:13:17

3 A. Well, it means it does not specifically 11:13:21

4 act on one pathway at one point. It's a very 11:13:25

5 generalized fungicide, which reacts with multiple 11:13:30

6 pathways at multiple points within the fungus. 11:13:36

7 Q. Is the alternative to a multi-site a 11:13:42

8 single-site; is that the other type of fungicide? 11:13:45

9 A. Generally, we refer to multi-sites or 11:13:49

10 single-sites. It's possible that you could have 11:13:52

11 something, I suppose, that would have more than one 11:13:54

12 site, but not be multi, but I'm not familiar with 11:13:56

13 that right now. I can't think of one. 11:14:00

14 Q. Are all of the pathways that mancozeb 11:14:03

15 affects known? 11:14:06

16 MR. CARSON: Objection to form. 11:14:11

17 **A. It would generally be accurate to say** 11:14:11

18 that not all of the pathways are known. I think 11:14:30

19 that there's some evidence of some of the things 11:14:33

20 that are impacted by mancozeb, but as far as the 11:14:36

21 total sum of that, I think that's -- that would be a 11:14:40

22 **good statement. It's very broad.** 11:14:44

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1 Q. How many pathways is mancozeb known to 11:14:46

2 affect, for -- as a fungicide? 11:14:50

3 Is there something I can help you 11:15:16

4 find, Doctor? 11:15:17

5 A. I was going to go back specifically to 11:15:18

6 the exhibit we had a while ago with the pesticide 11:15:20

7 book itself. 11:15:24

8 Q. That's Exhibit 1011. 11:15:25

9 A. 1011, yes. I'll see if that helps me a 11:15:26

10 little bit with the answer to your question. 11:15:34

11 Do you remember specifically where 11:15:44

12 mancozeb is? 11:15:45

13 Q. It's all alphabetical, I believe. 11:15:45

14 A. Okay. So it's just there. 11:15:48

15 Specifically here in this reference, 11:16:12

16 it says, "Reacts with and inactivates the sulfhydryl 11:16:15

17 groups of amino acids and enzymes of fungal cells, 11:16:25

18 resulting in disruption of lipid metabolism, 11:16:25

19 respiration and production of ATP." 11:16:29

20 Q. Where are you reading, sir? 11:16:34

21 A. This is reading on page 690, and it's 11:16:36

22 under the site of action under applications. 11:16:40

1 So what's listed on page 690 of 11:16:48
2 Exhibit 1011 those sites of actions are the same as 11:16:59
3 pathways that you were referring to in your earlier 11:17:04
4 question -- earlier answer? 11:17:07

5 MR. CARSON: Objection to form. 11:17:08

6 A. In the sense that this is a very 11:17:16
7 broad-acting fungicide, and it does inactivate 11:17:19
8 sulfhydryl groups of amino acids and enzymes. Amino 11:17:24
9 acids and enzymes are involved in multiple aspects 11:17:28
10 of life, so therefore, it's hitting a lot of 11:17:34
11 pathways. 11:17:39

12 And I think your original question 11:17:40
13 about are there pathways that we don't know, I mean, 11:17:43
14 I think there's so many pathways. It's broad to say 11:17:47
15 that we have a comprehensive knowledge of all of the 11:17:51
16 pathways that are being impacted. I don't think we 11:17:56
17 could say that. 11:17:58

18 But it's very broad, very 11:18:00
19 generalized. 11:18:01

20 Q. Do the sites of action of mancozeb 11:18:02
21 overlap with those -- the sites of actions of any 11:18:06
22 single-site fungicides? 11:18:13

1 **A.** **I'm not specifically aware of any direct** 11:18:26
2 **overlap. I'm not saying there could not be, because** 11:18:28
3 **again, it's such a broad-acting material that's** 11:18:31
4 **hitting so many different enzymes.** 11:18:35

5 **And specifically, it does mention** 11:18:38
6 **respiration, for example, and there are** 11:18:44
7 **site-specific respiration-inhibiting fungicides.** 11:18:49
8 **It's possible that it would actually hit one of** 11:18:53
9 **those at the same time, but I don't have any prior** 11:18:56
10 **knowledge of that happening.** 11:19:01

11 **Q.** **Well --** 11:19:01

12 **A.** **I mean, at that point, it's just more or** 11:19:06
13 **less, could it happen? Maybe.** 11:19:07

14 **Q.** **Also in Exhibit 1011, on page 93, I** 11:19:10
15 **think we had looked at the entry for** 11:19:13
16 **benzovindiflupyr. Can you turn there?** 11:19:15

17 **A.** **Yes, I see that.** 11:19:29

18 **Q.** **Somewhere -- oh, under Application, the** 11:19:30
19 **site of action for benzovindiflupyr is succinate** 11:19:34
20 **dehydrogenase inhibitor; correct?** 11:19:40

21 **A.** **I see that, yes.** 11:19:44

22 **Q.** **Is that your understanding of** 11:19:45

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1 benzovindiflupyr's site of action? 11:19:46

2 A. That is correct. 11:19:48

3 Q. Is that an enzyme, succinate 11:19:49

4 dehydrogenase? 11:19:54

5 A. It is one of the -- based on my memory, 11:20:07

6 it's one of the enzymes in the pathway within the 11:20:10

7 mitochondria for energy production. 11:20:12

8 So that's -- I think that is 11:20:16

9 correct. That's my -- going by my memory as well. 11:20:17

10 Q. If we turn back to page 690 of 11:20:20

11 Exhibit 1011, the site of action of mancozeb was the 11:20:23

12 sulfhydryl groups of amino acids and enzymes of 11:20:32

13 fungal cells; correct? 11:20:37

14 A. Correct. 11:20:44

15 Q. Succinate dehydrogenase would be one of 11:20:44

16 those enzymes in a fungal cell; correct? 11:20:50

17 A. It is an enzyme within the fungal cell, 11:20:52

18 that is correct. 11:20:55

19 Q. So is there common activity or at least 11:20:56

20 some common activity between benzovindiflupyr and 11:20:58

21 mancozeb? 11:21:01

22 A. Again, I don't know that for sure. 11:21:04

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1 **Theoretically, based on this, the fact that mancozeb** 11:21:09
2 **is as broad as it is, it may possibly hit that** 11:21:12
3 **enzymatic pathway as well. It's possible, in** 11:21:17
4 **theory, but I don't know that for a fact.** 11:21:20

5 Q. Okay. 11:21:22

6 Can you turn to page 66 in 11:21:23
7 Exhibit 1011. Has the entry for azoxystrobin that 11:21:26
8 we've discussed. 11:21:33

9 A. **Page 66, azoxystrobin. I have it.** 11:21:45

10 Q. What is the site of action for 11:21:47
11 azoxystrobin? 11:21:49

12 A. **The site of action for azoxystrobin is** 11:21:51
13 **it is a quinone outside inhibitor, specifically, it** 11:21:54
14 **inhibits mitochondrial respiration by blocking** 11:21:59
15 **electron transfer between cytochrome b and** 11:22:04
16 **cytochrome c1 at the ubiquinol oxidizing site.** 11:22:10

17 Q. If we could turn back to page of 690 for 11:22:20
18 mancozeb. 11:22:25

19 The site of action indicates that 11:22:29
20 the effect is disruption in lipid metabolism, 11:22:31
21 respiration and production of ATP, correct, for 11:22:37
22 mancozeb? 11:22:40

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A. Correct.

2 Q. So is there some overlap between the 11:22:40

```
3  site of action for -- the site of action or pathway 11:22:43
```

4 for mancozeb and azoxystrobin? 11:22:47

5 A. Again, I would be speculating, but based 11:22:50

6 on the fact that mancozeb is such a broad-acting 11:22:57

7 fungicide, and it does hit multiple pathways, it's 11:23:01

8 possible that there could be some overlap, but 11:23:05

9 again, I don't know that for a fact. 11:23:08

10 Q. Okay. 11:23:09

11 Does mancozeb have any effect with 11:23:10

12 respect to delayed senescence? 11:23:18

A. I'm going to ask you a follow-on

14 question. 11:23:48

15 **Are you referencing delayed** 11:23:48

16 senescence directly or indirectly? 11:23:50

17 Q. Well, let me back up just a little bit. 11:23:53

18 What is your understanding of 11:23:55

19 delayed senescence? 11:23:56

20 **A. Delayed senescence would be when a plant** 11:23:58

21 or plant parts do not normally progress in the same 11:24:04

22 way towards overwintering capability or something of 11:24:10

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1 **that nature.** 11:24:14

2 Q. What is -- what would be an indirect 11:24:15
3 effect on delayed senescence? 11:24:19

4 A. **An indirect effect would be, for** 11:24:23
5 **example, if you utilize mancozeb, and you control** 11:24:29
6 **disease on leaves, and therefore, the plant** 11:24:35
7 **maintains its leaves longer, it's healthier, it does** 11:24:40
8 **not go into senescence as quickly as if it had lost** 11:24:44
9 **its leaves.** 11:24:48

10 Q. Okay. 11:24:49

11 Can we turn in your report -- your 11:24:53
12 declaration. 11:24:55

13 (Previously marked Exhibit 1003, Declaration of 11:24:55
14 Phillip M. Brannen, PhD, PGR2023-00017, was 11:24:55
15 presented.) 11:25:01

16 A. **Yes.** 11:25:01

17 Q. As long as you wrote it, we may as well 11:25:01
18 talk about it. 11:25:03

19 If it's okay with you, I will 11:25:04
20 primarily go by paragraph numbers. 11:25:06

21 A. **Okay.** 11:25:13

22 Q. Can you turn to Paragraph 76 in your 11:25:13

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1 declaration, Exhibit 1003. 11:25:16

2 A. It's page 28, Paragraph 76; correct? 11:25:22

3 Q. Correct. Yeah. 11:25:24

4 Can you read the second to last 11:25:28

5 sentence into the record. 11:25:29

6 A. Second to last sentence of that 11:25:31

7 paragraph? 11:25:33

8 Q. Correct. 11:25:34

9 A. "Further, the '727 Patent appears to use 11:25:35

10 the term 'composition' interchanged with 11:25:42

11 'combination' when disclosing that '...the addition 11:25:46

12 of a dithiocarbamate fungicide to a combination...' 11:25:48

13 and 'the mancozeb when added to the compositions of 11:25:53

14 the present invention." And then it has the 11:25:57

15 reference to Exhibit 1001, column 20, lines 4 11:26:00

16 through 13. 11:26:04

17 Q. What do you understand that 11:26:04

18 interchangeable meaning to be? 11:26:06

19 A. As based on the last line of the 11:26:14

20 paragraph? 11:26:16

21 Q. Just in general, what do you understand 11:26:16

22 the interchangeable meaning of "composition" and 11:26:18

1 "combination," according to the '727 Patent? 11:26:21

2 A. "Thus, I understand the terms 11:26:24

3 'combination' and 'composition' are used 11:26:31

4 interchangeably." 11:26:32

5 Q. And are used interchangeably to mean 11:26:33

6 what? 11:26:35

7 A. To mean that they -- 11:26:36

8 MR. CARSON: Objection to form. 11:26:36

9 A. Sorry. 11:26:37

10 MR. CARSON: Go ahead. 11:26:38

11 A. To mean they are interchangeable, 11:26:39

12 synonymous, have basically the same end meaning. 11:26:42

13 Q. What is that same end meaning? 11:26:44

14 A. That materials are combined or added 11:26:47

15 together. 11:26:50

16 Q. They're physically mixed or combined 11:26:51

17 together; is that your understanding? 11:26:54

18 A. What do you mean by "physically mixed"? 11:27:12

19 Q. They're actually mixed together in a 11:27:13

20 common vessel. 11:27:18

21 A. They would be together in a common 11:27:22

22 product or a common mix. 11:27:26

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1 **So, in that respect, I guess -- I** 11:27:29
2 **think we're thinking about the same thing, but I'm** 11:27:31
3 **not 100 percent sure.** 11:27:33

4 Q. Okay. 11:27:34

5 So the common meaning of 11:27:35
6 "composition" or "combination," according to the 11:27:37
7 '727 Patent, would be a common product or a common 11:27:40
8 mix; correct? 11:27:46

9 MR. CARSON: Objection to form. 11:27:47

10 **A. State that one more time.** 11:27:51

11 MR. FELDSTEIN: Could you read that 11:27:52
12 back. 11:27:53

13 (The record was read back by the Court Reporter.) 11:28:09

14 MR. CARSON: Same objection. 11:28:09

15 **A. I'm not sure from memory that's fully** 11:28:10
16 **disclosed in the '727 Patent, that that's defined in** 11:28:15
17 **that way.** 11:28:19

18 Q. Well, I was trying to just rephrase what 11:28:19
19 you had told me in what I thought was a response to 11:28:24
20 my earlier question. Maybe I just need to clarify 11:28:28
21 the record. 11:28:31

22 What is the common meaning of 11:28:31

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1 "combination" and "composition," to your 11:28:35

2 understanding, according to the '727 Patent? 11:28:38

3 MR. CARSON: Objection to form. 11:28:42

4 A. It is basically a mixture of 11:28:42

5 materials -- or a combination of chemicals that are 11:28:49

6 referenced in the '727 Patent. 11:28:55

7 Q. So a composition or combination, 11:29:00

8 according to the '727 Patent, is a mixture of the 11:29:06

9 multiple chemicals; is that right? 11:29:10

10 MR. CARSON: Objection to form. 11:29:13

11 A. In some form or fashion, these chemicals 11:29:13

12 are together. 11:29:18

13 Q. What do you mean "some form or fashion"? 11:29:19

14 A. Well, it could be the different -- 11:29:23

15 different types of formulations could be utilized. 11:29:27

16 They could be added with other things like water 11:29:31

17 together as well, but the chemicals are actually in 11:29:34

18 a product or a tank mix or something, together. 11:29:38

19 Q. Okay. 11:29:42

20 A. So it is a -- and so from my reading, 11:29:46

21 understanding of how I have interpreted this, 11:29:50

22 "combination" and "composition" can be used 11:29:54

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1 interchangeably, as I read the document and 11:29:55

2 responded to it with this declaration. 11:29:57

3 Q. The understanding of "combination" and 11:29:59

4 "composition," according to the '727 Patent that 11:30:01

5 you've described, is that consistent with, in your 11:30:04

6 view, the ordinary meaning in the art, the fungicide 11:30:07

7 art, of those two terms? 11:30:12

8 MR. CARSON: Objection to form. 11:30:18

9 A. Again, as I would read those, I would 11:30:19

10 give them those meanings, and I would say that 11:30:23

11 they're very, very similar, if not exactly 11:30:25

12 similar, the way I would read that. 11:30:29

13 And so I guess as one that is a 11:30:31

14 POSA, that is how I would say that most POSAs would 11:30:36

15 respond to that. 11:30:39

16 Q. Now, we had talked at the very beginning 11:30:40

17 about rotating different fungicides, alternating 11:30:42

18 different fungicides; correct? 11:30:50

19 A. Yes, we did mention that. 11:30:51

20 Q. So an alternative to a composition of 11:30:54

21 two fungicides would be the sequential application 11:30:59

22 of two fungicides; is that correct? 11:31:02

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1 MR. CARSON: Objection to form. 11:31:05

2 A. Let me think about that, but please 11:31:06

3 restate the question. Let me make sure I get this 11:31:21

4 right. 11:31:23

5 MR. FELDSTEIN: Can you read that 11:31:24

6 back, please? 11:31:24

7 (The record was read back by the Court Reporter.) 11:31:25

8 MR. CARSON: Same objection. 11:31:38

9 THE WITNESS: In my reading, a 11:31:39

10 combination and a composition, are generally going 11:31:44

11 to be when the materials are applied together. So 11:31:49

12 if it's sequential, they are not necessarily applied 11:31:54

13 together, in the same way as it would be if it was a 11:31:58

14 mixture. 11:32:03

15 Q. Right. 11:32:03

16 So if you have two fungicides, you 11:32:04

17 could apply them as a combination, or in theory, you 11:32:06

18 could apply them sequentially; correct? 11:32:14

19 MR. CARSON: Objection to form. 11:32:16

20 A. You could do that, yes. Obviously, you 11:32:17

21 could do that. 11:32:20

22 Q. Okay. 11:32:21

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1 If you have two fungicides, there 11:32:21
2 are probably three options for what you could do; 11:32:26
3 you could apply the two fungicides together; you 11:32:30
4 could apply the first fungicide sequentially 11:32:34
5 followed by the second fungicide, or you could apply 11:32:36
6 the second fungicide followed by the first 11:32:39
7 fungicide; is that fair? 11:32:44

8 **A. You could set up those fungicides and 11:32:46**
9 **their utility in those ways, yes. 11:32:49**

10 Q. If you have three fungicides what are 11:32:51
11 all of the possibilities for how they could be 11:32:56
12 applied to a plant? 11:32:58

13 MR. CARSON: Objection to form. 11:33:00

14 **A. They could be applied together. Or they 11:33:01**
15 **could be applied in the various permutations of the 11:33:06**
16 **ways you would set up the three in order. 11:33:10**

17 **So however many that would be. 11:33:13**

18 Q. I'm going to mark as Exhibit 1 -- excuse 11:33:15
19 me, Exhibit 2016 a demonstrative. 11:33:20
20 (Exhibit 2016, permutation demonstrative, was marked 11:33:20
21 for identification.) 11:33:44

22 Q. Take a look at, Doctor, at Exhibit 2016, 11:33:44

1 please, are these -- do you agree these are the 11:33:49
2 permutations of the way three fungicides could be 11:33:51
3 applied? 11:33:53

4 MR. CARSON: Objection to form. 11:33:55

5 A. I think based on what you have provided, 11:34:30
6 that looks like it would be accurate to me, yes. At 11:34:31
7 least it provides quite a few options as far as how 11:34:34
8 they can be applied. 11:34:37

9 Q. Having reviewed it, did we miss any of 11:34:38
10 the possible permutations? 11:34:41

11 MR. CARSON: Same objection. 11:34:45

12 A. I think you've covered it. 11:34:46

13 Q. Okay. 11:35:45

14 Can you turn to Exhibit 1006, the 11:35:45
15 Tobler reference? 11:35:54

16 (Previously marked Exhibit 1006, Tobler Patent, was 11:36:23
17 presented.) 11:36:23

18 A. I'm there. 11:36:23

19 Q. I'm going to go by column numbers, are 11:36:24
20 you familiar with that? 11:36:26

21 A. Yes, sir. 11:36:29

22 Q. Can you go to column 28 of Tobler 11:36:29

1 Exhibit 1006. 11:36:32

2 A. I am at column 28. 11:36:42

3 Q. At line 6, it says, "Further examples of 11:36:44

4 compositions according to the present invention 11:36:46

5 which comprise three active ingredients are defined 11:36:49

6 as embodiments E1 and E2." (As read.) 11:36:52

7 Do you see that? 11:36:55

8 A. I do. 11:36:56

9 Q. That's something you've relied on in 11:36:56

10 your declaration in this case; correct? 11:36:58

11 A. Correct. 11:37:00

12 Q. And in particular, you rely on 11:37:01

13 embodiment E1; am I correct? 11:37:05

14 A. That is correct. 11:37:09

15 Q. Tobler refers to compositions, according 11:37:11

16 to the present invention; do you see that? 11:37:14

17 A. You're talking about the same sentence 11:37:23

18 you just read? 11:37:25

19 Q. Correct. 11:37:25

20 A. Further examples for composition 11:37:26

21 according to the present invention. 11:37:28

22 I see that. 11:37:29

1 Q. To your understanding is Tobler using 11:37:30
2 the term compositions the same way consistent as the 11:37:35
3 '727 Patent? 11:37:37

4 MR. CARSON: Objection to form. 11:37:41

5 A. I am not sure that Tobler would be using 11:37:46
6 it the same way. I'm not sure if he defined it in 11:37:48
7 that way or not. 11:37:51

8 Q. So you don't know whether -- excuse me. 11:37:52
9 Start again. 11:37:56

10 You don't know whether Tobler 11:37:56
11 Exhibit 1006 uses the term compositions consistent 11:37:59
12 with the ordinary meaning in the art of 11:38:02
13 compositions; is that correct? 11:38:05

14 MR. CARSON: Objection to form. 11:38:07

15 A. I -- I do not know. 11:38:08

16 Q. Okay. 11:38:09

17 In column 28 at line 10 to 11, it 11:38:27
18 says that, "The term 'TX1' means: 'The compound 11:38:33
19 A-1.1+a compound selected from the Group P.'" 11:38:44

20 Do you see that? 11:38:47

21 A. I do see that. 11:38:47

22 Q. Group P is something you've relied on, 11:38:48

1 too, in your declaration; correct? 11:38:50

2 A. That is correct. 11:38:52

3 Q. Would you agree with me that Group P, 11:38:54

4 your definition of that begins in column 22, line 11:39:02

5 61? 11:39:06

6 A. I do see that. 11:39:21

7 Q. Can you tell me where the definition of 11:39:22

8 Group P in Tobler Exhibit 1006 ends? 11:39:24

9 A. If I'm not mistaken, it goes through the 11:41:22

10 end of page -- or the end of column 24, because on 11:41:24

11 the -- wait a second. I'm sorry. That's -- that 11:41:27

12 may not be the case. Let's look. 11:41:31

13 Q starts at the top column of 26 11:41:32

14 column, so therefore, I'm assuming all of the 11:41:44

15 references to P go through that to the end of those 11:41:49

16 columns. So to the end of column 25. 11:41:55

17 Q. Do you have an understanding on whether 11:42:06

18 there's a limit on the number of Group P compounds 11:42:08

19 that can be included in Tobler embodiment E1? 11:42:10

20 MR. CARSON: Objection to form. 11:42:17

21 A. Where is Tobler embodiment E1? 11:42:26

22 Q. That was in column 28, where we started. 11:42:30

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1 A. Okay.

2 Oh, column 28. I'm sorry. 11:42:47

3 Just to make sure I'm following your 11:42:49

4 question and your logic. You're looking at E1 11:43:42

5 embodiment, E1 in column 28, and it says, "The term 11:43:45

6 'TX1' means: 'The compound A-1.1+a compound 11:43:49

7 selected from the Group P, " which the Group P we 11:43:55

```
8 went back to, and it has that long list that goes 11:44:00
```

9 through for basically a full page. But then on this 11:44:06

10 column, we're selecting from Group P, with the TX1, 11:44:12

11 and that goes down to -- I think it's 57 -- line 57 11:44:18

12 on 28. 11:44:24

13 So that is what encompasses 11:44:26

14 **embodiment E1.** 11:44:33

15 **That's what we're referencing;** 11:44:35

16 **right?** 11:44:38

17 Q. I'm referencing embodiment E1, and my 11:44:38

18 question was: Do you have an understanding on 11:44:41

```
19  whether there's a limit -- well, maybe step -- break 11:44:44
```

```
20    it up a little bit.                                     11:44:51
```

21 Embodiment E1 references Group P; 11:44:52

22 correct? 11:44:56

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A. It does. 11:44:56

2 Q. My question is: Do you have an 11:44:57

3 understanding on whether there's a limit on the 11:44:59

4 number of Group P compounds that can be included in 11:45:01

5 Tobler embodiment E1? 11:45:06

6 A. It appears to me on the surface of it, 11:45:16

7 that this is the list of materials that are in the 11:45:19

8 embodiment of E1. Starting at line 10, and then 11:45:21

9 going through to 56 or 57. 11:45:26

10 Q. Of column 28? 11:45:33

A. Of column 28. 11:45:34

12 Q. And that list is the Group P list in 11:45:36

```
13      column 28 through 57?                                     11:45:40
```

14 MR. CARSON: Objection to form. 11:45:43

15 Asked and answered. 11:45:45

16 A. It says, "A compound selected from the 11:45:48

17 **Group P."** So it's not comprehensive for the 11:45:52

18 **Group P.** These are compounds selected from the 11:45:57

19 **Group P, as I read it.** 11:46:00

20 Q. Can you give me an example of an 11:46:02

21 embodiment E1, and name all of the components 11:46:05

22 thereof? 11:46:08

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1 You're consulting your report to 11:46:28

2 answer that, Doctor? 11:46:29

A. I am. 11:46:30

4 Q. Without consulting your report, but just 11:46:36

5 reading Tobler Exhibit 1006, can you identify a 11:46:38

```
6    specific composition E1?                                     11:46:44
```

7 MR. CARSON: You know, if he wants 11:46:47

8 to refer to another document, I think he's entitled 11:46:48

9 to do that. 11:46:51

10 MR. FELDSTEIN: I'm not saying he's 11:46:52

11 not. I'm just asking him the question, if he's able 11:46:53

```
12    to do it without doing that.                                     11:46:55
```

13 So my question right now on the 11:46:57

14 table, Doctor, is without consulting your report, 11:46:59

15 are you able to identify a specific composition, and 11:47:01

```
16     its components, for E1 in Tobler? 11:47:05
```

17 THE WITNESS: I think it would be 11:47:09

18 possible, but I prefer to actually pick from the 11:47:10

19 claim chart to actually find that particular one 11:47:13

20 that I want to reference. 11:47:16

21 BY MR. FELDSTEIN: 11:47:18

22 Q. Did you actually prepare that claim 11:47:18

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1 chart or did counsel prepare that claim chart? 11:47:20

2 A. We cooperated on this declaration. 11:47:23

3 Q. Okay. So you're consulting material 11:47:26

4 that was prepared in collaboration with counsel to 11:47:28

5 answer the question; is that correct? 11:47:32

6 A. That's correct. 11:47:33

7 MR. CARSON: Objection to form. 11:47:33

8 A. Sorry. We are -- we worked together on 11:47:34

9 the claim chart as well. I went through the claim 11:47:37

10 chart. 11:47:42

11 So in my claim chart, this is on -- 11:49:05

12 what page is that -- page 8, the term TX1 means the 11:49:09

13 compound A-1.1, which should be benzovindiflupyr. 11:49:17

14 Then a compound selected from the 11:49:25

15 Group P. E1 has mancozeb+TX1, or the embodiment 11:49:27

16 includes disclosure of mancozeb+TX1; so therefore, 11:49:37

17 mancozeb plus benzovindiflupyr. 11:49:43

18 And then Group P, other compounds 11:49:47

19 with the -- among the strobilurin would 11:49:50

20 be azoxystrobin. 11:49:57

21 And then an azole fungicide could be 11:49:58

22 any of those that are in green, but let's say 11:50:01

1 **cyproconazole.** 11:50:06

2 Q. So you're reading from page 8 of 11:50:06

3 Appendix B, I think, as in boy, to your declaration, 11:50:09

4 Exhibit 1003; correct? 11:50:12

5 A. **Page 8 of the claim chart.** 11:50:14

6 Q. Which is Appendix B to your report; is 11:50:19

7 that correct? 11:50:21

8 A. **Oh, I'm sorry. Yes. Yes.** 11:50:21

9 Q. How many of those group -- let me start 11:50:29

10 again. 11:50:30

11 Can multiple Group P components be 11:50:31

12 included in embodiment E1 in Tobler, to your 11:50:35

13 understanding? 11:50:45

14 MR. CARSON: Objection to form. 11:50:45

15 A. **There are multiple fungicides which** 11:50:45

16 **match the embodiment. So my -- I guess they could** 11:50:57

17 **be included, as far as different types of** 11:51:03

18 **combinations of the materials that would be required** 11:51:07

19 **for that particular section, yes.** 11:51:10

20 **I mean, obviously, there's multiple** 11:51:13

21 **red and multiple green that are on that page, as far** 11:51:15

22 **as those that are highlighted.** 11:51:20

1 Q. So an embodiment E1, according to 11:51:21
2 Tobler, could have two of what you have identified 11:51:26
3 in red on page 8 of Appendix B (sic) of your 11:51:31
4 declaration? 11:51:35

5 MR. CARSON: Objection to form. 11:51:35

6 A. Are you asking about two together, or 11:51:35
7 two -- or different alternatives to the azoxystrobin 11:51:39
8 or to the DMI categories? 11:51:42

9 Q. Two together, two at the same time? 11:51:45

10 A. Two of the same, like two strobilurins. 11:51:47

11 Q. Let me ask the question again. 11:51:53

12 To your understanding, in 11:51:54
13 embodiment E1, according to Tobler, can it have two 11:51:57
14 strobilurin fungicides? 11:52:04

15 MR. CARSON: Objection to form. 11:52:16

16 A. As I read this and I -- as going through 11:55:37
17 the list, the TX1 means specifically a compound 11:55:41
18 A-1-1+a compound selected from Group P. 11:55:48

19 And then as you go through this 11:55:52
20 list, under the E1 embodiment, the examples are 11:55:53
21 always given with a material combined with TX1, or a 11:56:01
22 compound -- let's say, also has a formula of 11:56:14

1 **compound B-1-1+TX1. Trying to find where there's a** 11:56:17

2 **B-1 -- B-1.1.** 11:56:29

3 **Anyway, repeat your question one** 11:56:41

4 **more time, please.** 11:57:01

5 Q. To your understanding, in an 11:57:02

6 embodiment E1, according to Tobler, could it have 11:57:05

7 two strobilurin fungicides? 11:57:08

8 MR. CARSON: Objection to form. 11:57:15

9 A. **I don't see any indication that it can.** 11:57:25

10 **So my short answer is, I'm not 100 percent sure, but** 11:57:33

11 **I don't see any indication that it can in that** 11:57:37

12 **information that's provided.** 11:57:40

13 Q. So to your understanding, is there any 11:57:42

14 limitation for Tobler embodiment E1 on the number of 11:57:45

15 Group P components that are included in the 11:57:51

16 composition? 11:57:55

17 MR. CARSON: Objection to form. 11:57:56

18 A. **It is limited based on the information** 11:57:56

19 **that's provided. You only can use what is provided** 11:58:01

20 **here within that area.** 11:58:05

21 Q. So the only Group P compounds you can 11:58:09

22 use are those listed in column 28, lines 10 through 11:58:11

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1 57? 11:58:14

2 MR. CARSON: Objection to form. 11:58:15

3 Misstate his testimony. 11:58:16

4 Mr. Feldstein, I think you're 11:58:30

5 deliberately mischaracterizing his testimony. 11:58:31

6 MR. FELDSTEIN: Counsel, there's no 11:58:33

7 need for -- to talk -- 11:58:34

8 MR. CARSON: You already asked him 11:58:34

9 where Group P was and you went through -- 11:58:35

10 MR. FELDSTEIN: Okay. Counsel, 11:58:37

11 there's no need for -- there's no need to coach the 11:58:37

12 witness. It's really improper. I'm not even sure 11:58:38

13 you're -- 11:58:41

14 MR. CARSON: I'm not coaching you, 11:58:41

15 I'm admonishing you.

16 MR. FELDSTEIN: Yeah. Okay.

17 MR. CARSON: I'm not coaching him,

18 I'm admonishing you for deliberately --

19 MR. FELDSTEIN: You are coaching,

20 counsel. You need to stop. You need to stop,

21 counsel.

22 (Clarification requested by the Court Reporter.) 11:58:47

1 MR. CARSON: I just -- on the 11:58:47
2 record, I want to say my only point is that you're 11:58:47
3 deliberating misleading the witness. 11:58:49

4 MR. FELDSTEIN: My only point, 11:58:51
5 counsel, is you're improperly coaching the witness, 11:58:52
6 pretty plainly. Limit your objections to objection 11:58:55
7 to form. 11:58:58

8 BY MR. FELDSTEIN: 11:58:58

9 Q. With your counsel's help, now, can you 11:59:02
10 answer the question, Doctor? 11:59:04

11 MR. CARSON: Objection to form. 11:59:06

12 A. I'm going to also reference my -- or go 11:59:27
13 back to my declaration and look at this as well. 11:59:29

14 Q. I just want to make one thing clear on 11:59:54
15 the record since we got a little sidetracked. 11:59:55

16 In your prior answer that's it's 12:00:01
17 limited to the information that's provided, the 12:00:03
18 "only can use what's provided here within the area," 12:00:07
19 you were pointing with your fingers to column 28; 12:00:10
20 correct? 12:00:13

21 MR. CARSON: Objection to form. 12:00:13

22 A. Column -- within column 28. You're 12:00:24

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1 **talking about within column 28.** 12:00:26

2 Q. That's what you were pointing to a 12:00:29

3 minute ago; correct? 12:00:30

4 A. **That -- I'm in column 28 right now, if** 12:00:31

5 **that's what you mean.** 12:00:34

6 Q. That's what you were pointing to when 12:00:34

7 you were saying that you can only use the 12:00:37

8 information "provided here within that area," you 12:00:38

9 were referring to column 28; correct? 12:00:41

10 MR. CARSON: Objection to form. 12:00:43

11 A. **I'm not sure at this point that I would** 12:00:48

12 **say that. Let me continue to review.** 12:00:50

13 Q. That's what you were -- sorry. Go 12:00:53

14 ahead. 12:00:54

15 That's what you were pointing to 12:00:54

16 with your fingers when you said "here within that 12:00:56

17 area," you were pointing to column 28; is that 12:00:59

18 correct? 12:01:02

19 MR. CARSON: Objection to form. 12:01:02

20 A. **Let me continue my review --** 12:01:03

21 Q. Can you just answer the question that's 12:01:14

22 on the table, Doctor? 12:01:16

1 MR. CARSON: The question on the 12:01:17
2 table was before that one, which he went to his 12:01:17
3 report to try to answer, and you interrupted him. 12:01:19
4 So are you withdrawing previous question, 12:01:22
5 Mr. Feldstein? 12:01:25
6 Q. Can you answer the question, Doctor? 12:01:26
7 MR. CARSON: Which question, 12:01:27
8 Mr. Feldstein? 12:01:29
9 A. What is the question? I'm sorry. 12:01:29
10 Q. When you were giving your testimony 12:01:32
11 about the -- "what is provided here within that 12:01:34
12 area," you were pointing to column 28 of Tobler, 12:01:37
13 Exhibit 1006; correct? 12:01:41
14 MR. CARSON: Objection to form. 12:01:42
15 A. I am currently at column 28 within 12:01:46
16 Tobler, and reviewing it at this point. 12:01:48
17 Q. That's where you were pointing with your 12:01:49
18 prior testimony about the information "here within 12:01:51
19 that area"; correct? 12:01:54
20 MR. CARSON: Same objection. 12:01:56
21 A. Again, this is part of the information 12:01:57
22 that is provided, so I'm just trying to review it, 12:01:58

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1 make sure I give you the best answer I can. 12:02:01

2 Q. Absolutely, and I'm just trying to get 12:02:03

3 the written record clear, because the written record 12:02:05

```
4  doesn't reflect what "here" meant, and "here within" 12:02:08
```

5 that area" was your testimony, and when you gave 12:02:12

6 that testimony, you were pointing at column 28 of 12:02:16

7 Tobler, Exhibit 1006; is that correct? 12:02:19

8 MR. CARSON: Objection to form. 12:02:22

9 A. I am looking at, "The term T" -- all 12:02:23

10 right. So if I can reread. 12:02:27

```
11      "Further examples of the                                12:02:30
```

12 compositions according to the present invention 12:02:31

13 which comprise three active ingredients are defined 12:02:34

14 as embodiments E1 and E2." 12:02:38

15 And we're looking at embodiment E2 12:02:41

16 (sic), and it says, "The term 'TX1' means: 'The 12:02:43

17 compound A-1-1+a compound selected from the 12:02:46

18 **Group P.''' (As read.)** 12:02:51

19 And these are the examples that are 12:02:51

20 **given below of compounds with TX1.** 12:02:54

21 There's also the compound of formula 12:02:59

22 **B-1.1+TX1**, which is given also. So I would need to 12:03:02

1 look at that as well to figure out what that is. 12:03:07

2 But let me review my documents. 12:03:12

3 Q. Sure. Take your time. 12:03:14

4 A. And then I'll try to answer your 12:03:15

5 question. 12:03:16

6 Q. Take your time. 12:03:18

7 A. Okay. At least in part, the Group P 12:13:12

8 compounds are going to be found from column 22, line 12:13:15

9 61, to column 25, line 67. 12:13:31

10 Q. You know that from reading that from 12:13:37

11 your report, sir? 12:13:39

12 A. I do. 12:13:40

13 MR. CARSON: Objection to form. 12:13:46

14 A. I do read it in my report. 12:13:41

15 Q. So my question for you, Doctor, is: To 12:13:48

16 your understanding, is there a limitation for Tobler 12:13:57

17 embodiment E1 on the number of Group P compounds 12:13:59

18 that can be included in an E1 composition? 12:14:03

19 MR. CARSON: Objection to form. 12:14:08

20 A. Okay. Let's look at this one more time. 12:21:46

21 Q. To your understanding, is there a 12:21:49

22 limitation on the number of Group P compounds that 12:21:50

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1 can be included in a Tobler E1 composition? 12:21:54

2 MR. CARSON: Objection to form. 12:22:00

3 A. The -- within that particular area, 12:22:00

4 these are the things that are included in the E1, 12:22:13

5 but with the P compounds, which you can include, 12:22:18

6 there is a much broader list. 12:22:24

7 Q. To your understanding, can a Tobler E1 12:22:30

8 composition include multiple compounds selected from 12:22:35

9 Group P? 12:22:41

10 MR. CARSON: Objection to form. 12:22:45

11 A. I see no reason why it could not include 12:22:45

12 more compounds selected from Group P. 12:23:14

13 Q. Can you turn to Group P, column 24 12:23:19

14 section in particular. 12:23:27

15 A. So which one are you on? I'm sorry. 12:23:29

16 Q. Column 24. 12:23:31

17 A. Column 24. 12:23:33

18 Q. That's part of the definition of Group P 12:23:34

19 there; is that correct? 12:23:38

20 A. Correct. 12:23:39

21 Q. Just above line 20 is listed mercury. 12:23:40

22 Do you see that? 12:23:46

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1 A. I see mercury listed, yes. 12:23:47

2 Q. Is mercury a fungicide? 12:23:49

A. It can be a fungicide, yes. 12:23:51

4 Q. How is it used as a fungicide? 12:23:54

5 A. I don't -- I don't think it's often 12:23:56

6 utilized anymore as a fungicide, but mercurials 12:24:01

7 was -- were a class of fungicides at one time. And 12:24:05

8 it may be utilized somewhere, but I'm not aware of 12:24:07

9 where it's being utilized at this point. 12:24:10

10 Q. So it lists both mercuric chloride and 12:24:13

```
11 mercury as separate fungicides; correct? 12:24:18
```

12 A. I'm sorry. Say that one -- oh, mercuric 12:24:22

13 chloride and mercury. 12:24:25

14 Q. They're separate fungicides; correct? 12:24:29

15 MR. CARSON: Objection to form. 12:24:31

16 **A.** **I don't understand. There's not a** 12:24:57

17 number behind the mercury, and I'm not sure what 12:24:58

18 that means, if it has any meaning at all. 12:25:06

19 But they do list it. At least it's 12:25:10

20 separated by a comma. So I assume that based on 12:25:13

21 that, they're listing it as two separate items. 12:25:16

22 Q. So is mercury distinct from mercuric 12:25:18

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1 chloride, a fungicide, to your understanding? 12:25:23

2 MR. CARSON: Objection to form. 12:25:27

3 A. I don't know that I can answer that 12:25:27

4 question. I'm not familiar with mercury versus 12:25:29

5 mercuric chloride as fungicides. 12:25:33

6 Q. Still in column 24, at line 25, there's 12:25:37

7 listed paraffin oil. 12:25:45

8 Do you see that? 12:25:46

9 A. I do. 12:25:47

10 Q. What is paraffin oil? 12:25:47

11 A. I know I have heard of paraffin oil, but 12:25:50

12 I don't know what it is specifically, as far as what 12:25:56

13 it's derived from or more than that. I have heard 12:25:59

14 of paraffin oil, but I don't know anything more 12:26:03

15 about it. 12:26:06

16 Q. Is paraffin oil a fungicide? 12:26:06

17 A. In some cases, oils can act as 12:26:08

18 fungicides. I don't know about paraffin oil, but 12:26:16

19 some oils can have fungicidal activity, such as neem 12:26:21

20 oil as an example. I don't know if neem is listed 12:26:26

21 in this -- or neem oil is listed in this list or 12:26:31

22 not, but I'm just saying that you could claim an oil 12:26:34

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1 of that nature. Some oils would have some type of 12:26:36

2 fungicidal activity. 12:26:39

3 Q. Still in Tobler, column 24, line 26 to 12:26:40

4 27, is listed pentachlorophenol. 12:26:44

5 Do you see that? 12:26:51

6 A. I'm sorry. Say the line again. 12:26:52

7 Q. Lines 26 through 27. 12:26:54

8 A. Yes, I see that. Pentachlorophenol. I 12:26:59

9 see that. 12:27:02

10 Q. Is pentachlorophenol a nonselective 12:27:03

11 contact fungicide? 12:27:10

12 MR. CARSON: Objection to form. 12:27:12

13 A. I'm not sure what pentachlorophenol is 12:27:13

14 at all. 12:27:16

15 Q. So you don't know if it's a fungicide? 12:27:17

16 A. Well, it says here that this is a -- 12:27:23

17 this is a category or class of fungicides within 12:27:30

18 this document; so therefore, based on the document, 12:27:33

19 it would be listed as a fungicide. 12:27:36

20 I don't personally have any 12:27:41

21 knowledge of that compound, but since it's listed as 12:27:43

22 a fungicide, I would say it must be a fungicide. 12:27:45

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1 Q. Line 36 -- or 35, 36, something around 12:27:48
2 there, depending how you look, sulfur, do you see 12:27:53
3 that listed in column 24 of Tobler? 12:27:58

4 A. I see sulfur at line 36. Is that what 12:27:59
5 you are referencing? 12:28:02

6 Q. Yes. 12:28:03

7 A. Yes, I do see that. 12:28:03

8 Q. Is sulfur a fungicide? 12:28:04

9 A. Yes. 12:28:05

10 Q. How -- do you understand how -- well, 12:28:06
11 no. I don't know what I want to ask. 12:28:11

12 Continuing down column 24 of Tobler, 12:28:22
13 at line 64, it says, "An insecticide selected from 12:28:30
14 the group consisting of..." 12:28:40

15 Do you see that? 12:28:42

16 A. I do. 12:28:43

17 Q. Then one of the items listed is 12:28:43
18 glyphosate. 12:28:46

19 Do you see that? 12:28:49

20 A. I do. 12:28:49

21 Q. Is glyphosate an insecticide? 12:28:50

22 A. That is an interesting question. I 12:29:00

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1 **don't normally think of glyphosate as being an** 12:29:05
2 **insecticide, but it may be possible that it does** 12:29:09
3 **have some type of insecticidal activity I'm not** 12:29:11
4 **aware of.** 12:29:15

5 Q. When could glyphosate be used with a 12:29:15
6 fungicide? 12:29:19

7 MR. CARSON: Objection to form. 12:29:20

8 A. **It would generally not be a good idea to** 12:29:20
9 **put glyphosate out with a fungicide.** 12:29:26

10 Q. Why is that? 12:29:28

11 A. **Because glyphosate is a generally** 12:29:29
12 **broad-spectrum material that would kill plants, and** 12:29:32
13 **it's generalized.** 12:29:38

14 I'm not aware of an opportunity for 12:29:40
15 **a fungicide to be applied with glyphosate. I will** 12:29:44
16 **say that there are opportunities to apply herbicides** 12:29:48
17 **sometimes with fungicides. Just not glyphosate,** 12:29:53
18 **necessarily.** 12:29:56

19 Q. Backing up to line 59 through 62, 12:29:57
20 there's a section on a plant-bioregulator. 12:30:01

21 Do you see that? 12:30:05

22 A. **I do.** 12:30:06

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1 Q. What is a plant-bioregulator? 12:30:06

2 A. These are generally going to be things 12:30:09

3 that are hormonal in activity. So they would modify 12:30:11

4 the hormonal system of the plant. Sometimes they 12:30:14

5 mimic plant hormones, sometimes they interfere with 12:30:18

6 plant hormones. But that's what a 12:30:21

7 plant-bioregulator would do. 12:30:23

8 Q. One of them that's listed is, ethephon, 12:30:25

9 E-T-H-E-P-H-O-N. 12:30:30

10 Do you see that? 12:30:34

11 A. Yes, I do see that. 12:30:39

12 Q. What is that? 12:30:41

13 A. It's an ethylene-type product. 12:30:42

14 Q. What does it do when applied to a plant? 12:30:44

15 A. Again, it has a hormonal response. It's 12:30:46

16 a -- it would generally be applied for different 12:30:49

17 reasons. 12:30:51

18 I'm not familiar with all of the 12:30:51

19 reasons that ethephon would be applied, but it would 12:30:52

20 have a hormonal response in the plant. 12:30:56

21 Q. When would that be applied in 12:30:58

22 conjunction with a fungicide? 12:31:00

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1 **A.** It could be that you need to apply both 12:31:08
2 of them at the same time based on the timing, 12:31:09
3 because the one thing I do know about the hormonal 12:31:11
4 products is they're very specific as to rate and 12:31:14
5 timing because they can also cause damage to plants. 12:31:17
6 So you have to get the timing right and you have to 12:31:21
7 get the rate right. 12:31:24

8 So it would be possible that you 12:31:25
9 would need to apply a fungicide with a plant-growth 12:31:26
10 regulator at the same time. 12:31:29

11 **Q.** Would you apply the plant-growth 12:31:31
12 regulator before or after a fungicide? 12:31:33

13 **A.** You could, theoretically, yes. 12:31:35

14 **Q.** Okay. 12:31:38

15 Can you turn to column 39 in Tobler, 12:31:39
16 Exhibit 1006. 12:31:42

17 **A.** Column 39, yes. 12:32:13

18 **Q.** Column 39 and column 40 have some 12:32:14
19 formulation examples; is that correct? 12:32:16

20 **A.** In -- within column 39, there are 12:32:18
21 formulation examples, yes. 12:32:20

22 **Q.** Column 39 and 40; correct? 12:32:21

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1 A. Yes.

2 Q. Is this something you considered when 12:32:26

3 reviewing Tobler? 12:32:29

4	A. I don't think I specifically took	12:34:46
5	formulations of this nature into account when	12:34:48
6	looking at this.	12:34:50

7	Q. Looking at them now, do you agree that	12:34:52
8	there are no three component -- three active	12:34:54
9	fungicide component examples in column 39 and 40 of	12:35:01
10	Tobler?	12:35:04

11	A. I don't see any listed within those	12:35:53
12	columns.	12:35:57

13 Q. Can you look at column 41. Do you see 12:35:57

14 where it says, "Biologic examples"? 12:36:03

A. I do.

16 Q. Do you see biologic examples continue 12:36:06
17 from column 41 all the way through column 61? 12:36:09

A. Yes, I do see that.

19 Q. Are the biological examples in Tobler 12:37:12

20 something you considered when reviewing Tobler? 12:37:16

21 **A.** Some of them, yes. 12:37:20

22 Q. Do you agree that there are no examples 12:37:22

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1 with more than two active fungicide components in 12:37:29

2 the Tobler biological examples? 12:37:34

3 **A. I would agree with that.** 12:41:58

4 **Q.** Do you agree mancozeb is not used in the 12:41:59

5 Tobler biological examples? 12:42:01

6 **A. I do not see mancozeb listed.** 12:44:03

7 MR. FELDSTEIN: Do you want to take 12:44:06

8 a break? 12:44:07

9 MR. CARSON: Yeah. Lunch? 12:44:07

10 MR. FELDSTEIN: Yeah. Go off the 12:44:08

11 record. 12:44:09

12 THE VIDEOGRAPHER: Time is 12:44:10

13 12:45 p.m. We are now off the record. 12:44:11

14 (RECESS, 12:45 p.m. - 1:34 p.m.) 12:44:15

15 THE VIDEOGRAPHER: Time is 1:34 p.m. 01:33:10

16 We are now on the record. 01:33:12

17 BY MR. FELDSTEIN: 01:33:13

18 **Q.** Doctor, can I direct you back to your 01:33:14

19 declaration, Exhibit 1003. 01:33:16

20 Is it separately on your right-hand 01:33:39

21 side in a clip? 01:33:42

22 **A. You're talking about my declaration.** 01:33:42

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1 Q. Yes. 01:33:42

2 A. Is that what you're looking at? 01:33:43

3 Q. Yes. 01:33:43

4 A. Yeah. I'm sorry, I'm -- it's not in 01:33:45

5 here, that's true. Yeah, I've got it. You're 01:33:46

6 looking at the declaration. I'm sorry. 01:33:52

7 Q. Can I direct you to Paragraph 50 in your 01:33:54

8 declaration? 01:33:57

9 A. 15? 01:33:57

10 Q. 5-0. 01:33:58

11 A. 5-0. 01:34:00

12 I'm there, on 5-0. 01:34:11

13 Q. Can you read the second sentence of 01:34:13

14 Paragraph 50 of your declaration into the record. 01:34:15

15 A. "Synergy is defined as when a 01:34:17

16 combination of fungicides has an observed effect 01:34:21

17 that is greater than the expected effect of the sum 01:34:23

18 of the individual components." 01:34:26

19 Then we reference Colby, 01:34:30

20 Exhibit 1002; Gisi, Exhibit 1013; Levi, Exhibit 01:34:35

21 1014. 01:34:41

22 Q. What do you mean by "observed effect"? 01:34:42

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1 **A. The observed effect is the actual effect** 01:34:55
2 **that you see when you run a test of that particular** 01:34:57
3 **combination in the case of a synergy-type trial.** 01:35:03

4 **Q. Is there only one type of observed** 01:35:08
5 **effect?** 01:35:10

6 **A. It's whatever -- the observed effect** 01:35:14
7 **would be whatever it is you are measuring that is of** 01:35:16
8 **importance to you to determine whether or not** 01:35:22
9 **there's a synergy or not.** 01:35:24

10 **Q. What observed effects are considered for** 01:35:25
11 **synergy of fungicides?** 01:35:31

12 **MR. CARSON: Objection to form.** 01:35:34

13 **A. Observed effects could be some -- well,** 01:35:34
14 **different measurements of disease control would be a** 01:35:42
15 **critical observed effect.** 01:35:46

16 **Q. Are there any other observed effects for** 01:35:49
17 **consideration of fungicide synergy?** 01:35:58

18 **A. Possibly, though, generally, that's not** 01:36:02
19 **going to be what you would measure because you're** 01:36:05
20 **looking for activity, disease activity,** 01:36:07
21 **disease-control activity, but you could possibly do** 01:36:11
22 **a synergy calculation on yield, plant volume, growth** 01:36:14

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1 parameters, things of that nature could be also 01:36:19

2 reviewed. 01:36:25

3 Q. How would you do a synergy calculation 01:36:28

4 for yield? 01:36:31

5 A. Well, you'd have to have the -- you'd 01:36:35

6 have to have an untreated control. And then you 01:36:36

7 would have to have each of the components that 01:36:40

8 you're testing, all the fungicides -- let's say it's 01:36:45

9 a two-way cross of two fungicides, you have to have 01:36:48

10 each of those fungicides individually tested, and 01:36:51

11 then you have to have them in combination. 01:36:53

12 And from that, you could look at the 01:36:56

13 response of yield and see if there -- if the 01:36:59

14 combination of two fungicides gave a higher yield 01:37:03

15 than expected. I mean, it's possible. That's a 01:37:06

16 theoretical-type thing you could do. 01:37:09

17 Q. What -- 01:37:09

18 A. Again, I don't think I have ever seen 01:37:13

19 that done, but I think you could do it. 01:37:16

20 Q. What units are yield measured in for 01:37:16

21 plants? 01:37:21

22 A. Depends on the commodity you're looking 01:37:21

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1 at. 01:37:23

2 Q. For soybean, for example? 01:37:24

3 A. Here, in the United States, it generally 01:37:27

4 would be bushels per acre. 01:37:29

5 Q. So what would the calculation look like 01:37:35

6 if you were going to measure -- look for synergy 01:37:37

7 effect of a fungicide in terms of yield for soybean? 01:37:39

8 A. What would the calculation look like? 01:37:50

9 MR. CARSON: Objection to form. 01:37:53

10 A. As far as the Colby, you're looking at a 01:38:01

11 percent -- if you're looking at disease as reducing 01:38:06

12 yield, which you would expect, then it would be 01:38:10

13 similar to what you would do with a regular Colby 01:38:15

14 for disease control. So the formula would be the 01:38:17

15 same in that case, if you're looking at a reduction 01:38:20

16 in yield. 01:38:26

17 So I think you could just plug it in 01:38:26

18 basically the same, but you would substitute the 01:38:29

19 yield reduction as if it were disease. 01:38:32

20 Q. So yield reduction or yield gain is -- 01:38:44

21 A. Yield gain, I guess you'd say, because 01:38:48

22 if you're looking at percent disease control, I 01:38:51

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1 **could substitute percent yield gained, if that makes** 01:38:55

2 **sense.** 01:38:59

3 Q. Is the assumption that absent synergy, 01:38:59

4 that yield gained from multiple fungicides will be 01:39:06

5 additive? 01:39:11

6 A. **I think that would be correct. It's** 01:39:16

7 **either going to be additive, or -- I don't know that** 01:39:19

8 **you could see a -- I guess you could potentially see** 01:39:25

9 **a negative interaction.** 01:39:32

10 **Yeah, I mean, again, you're applying** 01:39:33

11 **for disease control and measuring yield. So this is** 01:39:34

12 **what I'm getting at. Not just measuring yield by** 01:39:37

13 **itself without any other parameters, but within the** 01:39:40

14 **disease parameters, you could take yield data.** 01:39:43

15 Q. So -- 01:39:45

16 A. **And then you -- I'm sorry. Go back to** 01:39:46

17 **what you were saying.** 01:39:48

18 Q. Finish your answer, if you were still 01:39:49

19 going. 01:39:51

20 A. **Okay. Please repeat the question, and** 01:39:51

21 **let me continue.** 01:39:53

22 Q. Is the assumption that absent synergy, 01:39:55

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1 either positive or negative synergy, that yield gain 01:39:58

2 from multiple fungicides will be linearly additive? 01:40:02

3 MR. CARSON: Objection. Asked and 01:40:10

4 answered. 01:40:12

5 A. I think you could -- just like you have 01:40:12

6 within any standard fungicide measurement, such as 01:40:15

7 severity or incidence of disease, the impact with 01:40:17

8 yield could be very, very similar. So you could 01:40:22

9 have an additive effect. 01:40:25

10 You could potentially have a synergy 01:40:28

11 effect because, again, you're producing -- if you 01:40:32

12 produce -- let's say it's fruit. And if you produce 01:40:34

13 more fruit that are not diseased than you otherwise 01:40:37

14 would have expected, that would actually go back to 01:40:39

15 the concept that there was some type of an 01:40:42

16 interaction of the fungicides. 01:40:44

17 So that would be an example of where 01:40:45

18 you had an additive effect -- I mean, a synergistic 01:40:49

19 effect. I'm sorry, a synergistic effect. 01:40:53

20 If you -- you could possibly have a 01:40:56

21 negative interaction of the fungicide, so you 01:40:58

22 actually increase disease; therefore, you reduce 01:41:00

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1 yield by comparison, theoretically. 01:41:03

2 Q. If there is no action -- excuse me. 01:41:05

```
3 I'll start again. 01:41:07
```

4 If there's no interaction between 01:41:09

5 the fungicides and you have two, fungicide A and 01:41:10

6 fungicide B, and fungicide A alone increases yield 01:41:13

7 by 10 percent, and fungicide B alone increases by 01:41:17

8 10 percent, is the expectation that fungicide A plus 01:41:23

9 B is going to increase yield by 20 percent? 01:41:27

10 MR. CARSON: Objection to form. 01:41:31

11 A. I'm not 100 percent sure. Again, I 01:41:32

12 haven't done any of these calculations for yield, so 01:41:38

13 this is more hypothetical for me when I start 01:41:39

```
14    looking at it.                                01:41:42
```

15 I do think you could -- you would -- 01:41:43

16 you could see an increase in yield that is 01:41:44

17 unexpected. That would be something that you could 01:41:46

18 see based on applying the fungicides together. 01:41:49

19 Because, again, if the fungicides 01:41:52

20 have a synergistic response, I could see how that 01:41:54

21 would also provide an unexpected yield boost over 01:41:59

22 the independent fungicides alone. 01:42:02

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1 And so -- but I'd have to look at 01:42:04

2 that more carefully. 01:42:07

3 Q. So I just want to make sure we're clear. 01:42:08

4 Do you know what a person of ordinary skill in the 01:42:16

```
5 art would expect for noninteracting fungicides in 01:42:18
```

6 terms of increased yield from a combination? 01:42:24

7 In other words, would a person of 01:42:29

8 ordinary skill in the art expect that if fungicide A 01:42:32

9 gave you a 10 percent increased yield alone, and 01:42:36

10 fungicide B gave you a 10 percent increase alone, is 01:42:38

```
11 the expectation that absent positive or negative 01:42:42
```

12 interaction, a combination of fungicides A and B 01:42:47

13 will increase yield by 20 percent? 01:42:51

14 MR. CARSON: Objection. Asked and 01:42:53

15 answered. 01:42:55

16 MR. FELDSTEIN: Form, also. 01:42:57

17 MR. CARSON: Hmm? 01:42:58

18 MR. FELDSTEIN: Form, also. 01:42:58

19 MR. CARSON: I can add that, if 01:43:00

20 you'd like. 01:43:02

21 MR. FELDSTEIN: It was a long 01:43:03

22 question. 01:43:04

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1 BY MR. FELDSTEIN: 01:43:04

2 Q. I can try it again, too, if you 01:43:04

3 didn't... 01:43:06

4 A. I'll try to answer it. 01:43:07

5 Basically -- again, I don't know for 01:43:08

6 sure what I would observe in the way of yield. 01:43:11

7 Never looked at that personally. Don't recall 01:43:13

8 having seen it in the literature relative to 01:43:17

9 interactions. 01:43:21

10 However, I think theoretically, you 01:43:24

11 could at least test it. I don't know exactly what 01:43:26

12 the response would be relative to yield, per se. 01:43:28

13 BY MR. FELDSTEIN: 01:43:32

14 Q. Right. I'm not trying to get at what 01:43:33

15 the exact response is going to be of the 01:43:34

16 combination. 01:43:36

17 I'm trying to get what a person of 01:43:37

18 ordinary skill in the art would expect the yield to 01:43:39

19 be when you combine two independent fungicides. 01:43:42

20 A. I don't know that I can answer that. 01:43:46

21 Q. Okay. 01:43:48

22 A. I could answer it relative to fungicide 01:43:49

1 activity on disease specifically, but when you start 01:43:53
2 talking about yield, again, it's something that's 01:43:56
3 more theoretical for me. 01:43:59

4 Q. Other observed effects you mentioned are 01:44:01
5 growth parameters, when I was asking what observed 01:44:04
6 effects you were referencing in Paragraph 50. 01:44:06

7 Do you recall? 01:44:09

8 A. Well, it could be. Again, this is not 01:44:10
9 the normal -- within the context of Paragraph 50, 01:44:16
10 and what I'm really referencing here, I'm talking 01:44:20
11 about hypotheticals. You know, these are observed 01:44:24
12 effects that could occur. 01:44:26

13 But specifically within the context 01:44:28
14 of this document, I'm really looking at disease. 01:44:31
15 And that's what I'm referencing more so. I'm going 01:44:37
16 off on the hypotheticals, but within the context of 01:44:38
17 this particular document, the observed effects are 01:44:41
18 things like disease control. And that's what I'm 01:44:43
19 really interested in. 01:44:47

20 Q. But you did mention that one possible 01:44:48
21 observed effect is growth parameters; correct? 01:44:52

22 A. There could be an effect on growth 01:44:54

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1 parameters as well. 01:44:56

2 Q. Can you explain what you meant by 01:44:56

```
3 "growth parameters." 01:44:58
```

4 A. Well, if you control disease well, then 01:44:59

5 you may have a longer shoot growth, potentially. 01:45:05

6 So you could have -- or a tree. If 01:45:12

```
7  you are looking -- depends on what you are looking 01:45:14
```

8 at, but if it's -- and over what time frame you're 01:45:17

```
9    looking at.                                01:45:20
```

10 But if growth is involved, then you 01:45:21

```
11 can have growth parameters as well. 01:45:26
```

12 But again, I'm really concentrating 01:45:27

13 less on that. I give you those as hypotheticals, 01:45:29

14 but I really want to concentrate more from the 01:45:33

15 standpoint of what we're looking at here with 01:45:35

16 synergy on disease control. 01:45:38

17 Q. In terms of growth parameters, it 01:45:41

18 would -- an example would be shoot growth, you said? 01:45:44

19 **A. Could be. That could be something you** 01:45:45

20 would measure. 01:45:47

21 Q. How would you -- what is the measurement 01:45:47

22 of shoot growth; is that like inches, millimeters 01:45:49

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1 or -- 01:45:55

2 A. It could be in inches or millimeters. 01:45:55

3 You can look at tree growth. You can actually take 01:45:58

4 tree volumes, plant volumes. You can take dry 01:46:02

5 weights, if it's a smaller plant. 01:46:04

6 So there are all kinds of ways you 01:46:06

7 can measure growth. 01:46:09

8 Q. What would be -- what would a person of 01:46:10

9 ordinary skill in the art expect in terms of the 01:46:14

10 effect on growth parameters for a combination of two 01:46:18

11 noninteracting fungicides? 01:46:22

12 MR. CARSON: Objection to form. 01:46:27

13 A. Again, I don't think you can have an 01:46:30

14 expectation of what's going to occur. You just have 01:46:32

15 to look at what you get relative to the untreated 01:46:35

16 control, each fungicide by itself, which they both 01:46:41

17 have to be in the trial, and then the combination of 01:46:44

18 two fungicides. 01:46:48

19 So expectation is something that 01:46:49

20 really doesn't enter into it. It's one of those 01:46:52

21 things where I've got to look at it and see what I 01:46:55

22 get. I don't really know that I have an expectation 01:46:58

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1 when I conduct a trial. 01:47:00

2 There would be things that you would 01:47:01

3 expect to happen maybe because of what you've seen 01:47:03

4 before with compounds, but the trial itself is 01:47:05

5 designed in a way that you're doing an experiment, 01:47:09

6 so you shouldn't bias yourself as to what the 01:47:13

```
7 results will be.                                01:47:16
```

8 Q. You don't know what a person of ordinary 01:47:16

9 skill in the art would have been able to expect in 01:47:18

10 terms of the effect of a combination of two 01:47:21

```
11 noninteracting fungicides on growth parameters; is 01:47:24
```

12 that right? 01:47:28

13 MR. CARSON: Objection to form. 01:47:28

14 Asked and answered. 01:47:29

15 A. Well, if it's two noninteracting 01:47:31

16 fungicides, there should be some type of an 01:47:34

17 **additive-type** effect. 01:47:37

18 But again, in growth parameters, 01:47:38

19 that may not exactly mimic what you would see with 01:47:40

20 **disease control. They may not be one-to-one or** 01:47:43

21 correlated perfectly. 01:47:46

22 Q. Okay. 01:47:47

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1 In terms of disease control, which 01:47:48
2 we know is your focus, that's where the Colby 01:47:50
3 equation comes in; is that correct? 01:47:53

4 **A. Within the calculation of synergy, yes.** 01:47:54

5 **Q.** You're pretty familiar with the Colby 01:47:57
6 calculation; is that right? 01:48:02

7 **A. I am pretty familiar with the Colby 01:48:03
8 calculation. Yes, that would be accurate.** 01:48:06

9 **Q.** You've used it throughout your career? 01:48:07

10 **A. I've not used it throughout my career.** 01:48:09
11 **No, I have not.** 01:48:11

12 **I have utilized -- I have seen it 01:48:11
13 throughout my career. I have observed it being 01:48:14
14 utilized, but I'm not -- I have not utilized it.** 01:48:17

15 **I have done very limited testing for 01:48:20
16 synergy, and really, most of that testing is ongoing 01:48:23
17 in current graduate student programs.** 01:48:27

18 **(Clarification requested by the Court Reporter.)** 01:48:35

19 **A. Graduate student programs.** 01:48:35

20 **So in answer to your question, I'm 01:48:37
21 familiar with the Colby calculation. I have not 01:48:39
22 utilized it professionally a lot during my career.** 01:48:42

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1 And largely, you know, synergy 01:48:44

2 calculations and field synergy trials, they take a 01:48:49

3 lot of treatments, and that's not always within the 01:48:53

4 context of what I do, what I'm interested in. 01:48:59

5 What I do, in fact, do is I do 01:49:02

6 combine fungicides together, and look at efficacy, 01:49:05

7 and the whole idea there is, can I get better 01:49:10

8 disease control so that I can provide a farmer with 01:49:13

9 a better answer as to how to control disease. 01:49:15

10 Now, as long as those combinations 01:49:18

11 work well, that's my major goal, so that's -- the 01:49:19

12 vast majority of the work I've done in my career has 01:49:22

13 been focused on that. 01:49:26

14 Q. When you say "work well," what do you 01:49:27

15 mean; can you quantitate that? 01:49:31

16 A. If I combine two or three fungicides 01:49:32

17 from different classes, and I have done that within 01:49:38

18 my career, and if I get a response of those 01:49:43

19 fungicides relative to disease control that is 01:49:46

20 either broader or better than just one of those 01:49:49

21 materials, then that can be something I would 01:49:53

22 recommend to a farmer to do. 01:49:57

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1 And that would be -- again, I don't 01:50:01
2 know whether there was -- well, I don't know what 01:50:03
3 the effect was when I do that. I don't know if it's 01:50:05
4 additive. I don't know if there's synergy involved. 01:50:07
5 I don't know if there's a negative response to those 01:50:10
6 chemicals being combined. But as long as I get 01:50:14
7 better disease control when I combine those, that's 01:50:16
8 the critical piece of information that I need to 01:50:20
9 seek. 01:50:21

10 Q. Are you seeking a certain level, like, 01:50:22
11 some percent control, or just an improvement in 01:50:24
12 percent control? 01:50:29

13 A. It has to be an economically feasible 01:50:30
14 response. 01:50:34

15 So I can put together combinations 01:50:36
16 of chemicals, but at some point, I get to the point 01:50:40
17 that adding another chemical doesn't make economic 01:50:42
18 sense. It costs more to add the chemical fungicide 01:50:45
19 than it does the response that you get in yield. So 01:50:50
20 that has to be taken into account. 01:50:52

21 But -- anyway, did I answer your 01:50:54
22 question? 01:50:59

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1 Q. So is there any desirable -- is there 01:50:59
2 any both realistic and desirable level of disease 01:51:04
3 control that you say, yes, this is a success? 01:51:08

4 MR. CARSON: Objection to form. 01:51:12

5 A. In general, if I look at a trial, and I 01:51:12
6 have a statistical difference in disease control 01:51:20
7 when I put two treatments together, and one is 01:51:24
8 different than the other, and there's a statistical 01:51:28
9 difference, that's at least one measure of success. 01:51:30
10 It does say that it's real. Okay. So the 01:51:32
11 response -- as long as I know the response is real, 01:51:34
12 and not just based on variability. 01:51:37

13 But as far as the level of control, 01:51:38
14 again, you have to look at the economics as well, 01:51:41
15 because I can have statistically significant 01:51:44
16 control, and if I can't get a return off of the 01:51:48
17 application of that fungicide which pays for that 01:51:51
18 application, it doesn't matter. 01:51:55

19 Q. So statistically significant control 01:51:58
20 with a 10 percent efficacy would be a success by at 01:52:01
21 least one parameter? 01:52:07

22 MR. CARSON: Objection to form. 01:52:10

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1 **A. Sorry. Restate that one more time.** 01:52:10

2 **Q. If you were able to achieve a** 01:52:13

3 statistically significant 10 percent reduction in 01:52:16

4 disease, are you saying that would be considered, at 01:52:22

5 least in one way, a success? 01:52:27

6 MR. CARSON: Objection to form. 01:52:29

7 **A. It would be a success from the** 01:52:29

8 **standpoint of disease control. It still doesn't** 01:52:34

9 **mean that I got enough yield response out of that** 01:52:36

10 **application to pay for it.** 01:52:40

11 **So that would be the second level,** 01:52:43

12 **is making sure that it's economically feasible and** 01:52:44

13 **viable to apply that material.** 01:52:47

14 **Q. Is there general threshold of disease** 01:52:49

15 response, let's say for soybeans, that a person of 01:52:53

16 ordinary skill in the art would be looking for? 01:52:58

17 **A. As far as -- sorry.** 01:52:59

18 MR. CARSON: Objection to form. 01:53:00

19 **A. Do you mean as far as a percent disease** 01:53:01

20 **control, something like that?** 01:53:06

21 **That is also going to be variable** 01:53:08

22 **based on what the disease is, and what the response** 01:53:14

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1 is going to be relative to economics of the 01:53:17

2 response. 01:53:20

3 So I don't think there -- you -- I 01:53:22

4 can't answer that question that simply. 01:53:25

5 Q. What about for soybean rust; is there a 01:53:27

6 desirable level of disease control that persons of 01:53:33

7 ordinary skill in the art are aiming for? 01:53:36

8 A. Not a specific level. 01:53:42

9 Again, going back to the example, if 01:53:43

10 we use soybean rust, if I apply two chemicals, two 01:53:47

11 chemicals fungicides compared to one, I put those in 01:53:51

12 combination in a tank mix, and those combinations 01:53:54

13 give X-bushels per acre increase, if that increase 01:53:58

14 is significant enough to warrant the application 01:54:03

15 because of the finances, it could be a relatively -- 01:54:10

16 what you might consider a relatively insignificant 01:54:16

17 yield increase. 01:54:18

18 Of course, you would like double 01:54:20

19 yields or something like that every time, but that's 01:54:22

20 not necessarily realistic. 01:54:24

21 But you'd just have to look at each 01:54:28

22 of the chemicals, the cost of the chemical 01:54:30

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1 fungicides, and then from that, determine whether or 01:54:33

2 not that was a "success." 01:54:35

3 And then the ultimate success is 01:54:39

4 whether it makes money for a producer. 01:54:42

5 Q. So the yield is the dominant metric for 01:54:45

6 determining whether or not treatments are 01:54:51

7 economically successful? 01:54:54

8 MR. CARSON: Objection to form. 01:54:56

9 A. Yield, based on the price of the 01:54:56

10 commodity that you have, is going to be certainly 01:55:05

11 important as far as making decisions on whether or 01:55:07

12 not you would apply a material. 01:55:12

13 Ultimately, I mean, that's why we 01:55:13

14 put these fungicides out to begin with. 01:55:15

15 Q. The goal is not disease control for its 01:55:17

16 own sake, the goal is disease control to increase 01:55:19

17 yield; is that fair? 01:55:24

18 MR. CARSON: Objection to form. 01:55:26

19 A. Again, it -- there are cases, and this 01:55:27

20 is where it may be more nuanced, but there are three 01:55:32

21 reasons you apply fungicides: 01:55:38

22 One of the reasons is yield. 01:55:42

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1 Another reason, if it fits, would be 01:55:46
2 to reduce toxins. So that doesn't have anything to 01:55:49
3 do with yield. That has to do with toxins that are 01:55:53
4 produced. If you reduce toxins, that's significant, 01:55:57
5 and it's important. 01:56:01

6 And the third thing, which is 01:56:02
7 actually important in the area that I work in, in 01:56:03
8 particular, fruits, is just for aesthetics. And 01:56:07
9 that has nothing to do with yield. But I apply a 01:56:10
10 lot of fungicides in order to aesthetically provide 01:56:13
11 a fruit that has no blemishes. 01:56:16

12 Q. Other than work you may have done on 01:56:21
13 this case, have you actually used the Colby 01:56:23
14 calculation to calculate expected effects of 01:56:26
15 combinations of fungicides? 01:56:30

16 A. Not to date. I will be, because I have 01:56:33
17 two graduate programs right now where we're doing 01:56:36
18 synergistic studies, but I have not utilized it in 01:56:38
19 that way. 01:56:42

20 But currently, I am working on those 01:56:44
21 and -- 01:56:46

22 Q. In your work for this case, have you 01:56:46

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1 used the Colby calculation to calculate the expected 01:56:48

2 effect of combined fungicides? 01:56:52

3 **A. I have.** 01:56:56

4 **Q. You have.** 01:56:57

5 That was with respect to the Prates 01:56:58

6 declaration? 01:57:08

7 (Clarification requested by the Court Reporter.) 01:57:09

8 (The record was read back by the Court Reporter.) 01:57:15

9 MR. FELDSTEIN: Correct. 01:57:16

10 **A. Yes, that is correct.** 01:57:16

11 **Q. Okay.** 01:57:17

12 Are you familiar with what 01:57:19

13 assumptions underlie the applicability of the Colby 01:57:21

14 calculation? 01:57:27

15 **A. I'm familiar with some of the** 01:57:27

16 **assumptions.** 01:57:29

17 **Q. What assumptions are you familiar with?** 01:57:30

18 **A. Well, the responses -- well, I should** 01:57:31

19 **say this:** 01:57:40

20 **I know that the Colby application** 01:57:40

21 **does work best when the responses are somewhere** 01:57:42

22 **within the 50 percent range, for example.** 01:57:45

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1 And so I'm not sure if that's what 01:57:49
2 you mean by "assumptions," but there are aspects of 01:57:51
3 Colby that say that it works best when you're within 01:57:54
4 a certain range. 01:57:58

5 The other thing about Colby is Colby 01:57:59
6 is really a very effective, and I would say, a very 01:58:02
7 well-used and often-used metric for looking at 01:58:07
8 interactions when you have two or three, or a 01:58:10
9 limited number of fungicides. 01:58:14

10 Colby himself says that it -- when 01:58:16
11 you get more and more fungicidal combinations, 01:58:18
12 that's probably going to be difficult to utilize it. 01:58:22

13 Q. So you mention that Colby works best 01:58:24
14 when the individual responses are somewhere within 01:58:34
15 the 50 percent level? 01:58:37

16 A. That's -- that's when it is optimized, I 01:58:38
17 guess is what you would say is somewhere within that 01:58:41
18 level. 01:58:43

19 Q. Why is it optimized in that level? 01:58:43

20 A. Because of linearity, and that's more 01:58:45
21 statistical-type stuff. 01:58:49

22 But again, if you were to get into a 01:58:52

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1 more advanced set of combinations, I think there are 01:58:53
2 probably additional types of approaches you could 01:58:59
3 take. And that's where I would bring in a 01:59:01
4 statistician at that point, to start looking at the 01:59:04
5 more complex interactions. 01:59:06

6 But Colby is really a very effective 01:59:08
7 type of an approach to look at interactions, when 01:59:11
8 there's especially a limited number of fungicides 01:59:15
9 involved. 01:59:17

10 Q. So what -- 01:59:18

11 A. It's a tried and true type of a process. 01:59:19
12 I've actually reviewed a paper, by chance this week, 01:59:23
13 that was sent to me on which the Colby calculation 01:59:26
14 is predominantly used. 01:59:29

15 Q. What happens to the results of a Colby 01:59:30
16 calculation when the individual components are away 01:59:35
17 from the 50 percent level? 01:59:40

18 A. I guess -- I'm not really sure that I 01:59:42
19 can answer the exact response as far as what's going 01:59:48
20 to happen with it. It's just it's a better -- the 01:59:51
21 calculation itself, the information you derive will 01:59:56
22 be better when things are within a midrange, so 02:00:00

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1 **that's it.** 02:00:03

2 Q. Better in what regard? 02:00:04

3 A. **I don't know that I can answer that.** 02:00:13

4 **I know that I've read that from** 02:00:15

5 **Colby, you know, that it's -- but nonetheless, I'm** 02:00:19

6 **not really sure.** 02:00:22

7 Q. If the interactions -- excuse me. 02:00:22

8 If the individual components are 02:00:25

9 below 50 percent, does it overestimate or 02:00:28

10 underestimate the combined effect? 02:00:32

11 MR. CARSON: Objection to form. 02:00:35

12 A. **I'm not really sure what will happen** 02:00:35

13 **there. And I don't think it completely negates** 02:00:42

14 **Colby in any way. I just think the accuracy of** 02:00:43

15 **Colby is -- based on what Colby has said, is within** 02:00:46

16 **that range, and also when you don't have so many** 02:00:49

17 **different types of fungicides combined.** 02:00:51

18 And you had asked me specifically, 02:00:52

19 **you know, what are the things that are in Colby that** 02:00:54

20 **it discusses, and that's just one of the things.** 02:00:57

21 Q. You don't know whether if the individual 02:01:05

22 components are below 50 percent, whether the result 02:01:07

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1 of Colby is an overestimate or underestimate? 02:01:09

2 A. I do not. 02:01:13

3 Q. Conversely, if the individual values are 02:01:13

4 above 50 percent, do you know if Colby overestimates 02:01:19

5 or underestimates the combined effect? 02:01:22

6 A. I do not, and I do not know the degree 02:01:24

7 to which that would be true. 02:01:27

8 Q. What do you mean you do not know the 02:01:28

9 degree to which that would be true? 02:01:32

10 A. Well, I just don't know the degree to 02:01:34

11 which that would have an impact -- I don't 02:01:35

12 understand what the impact would be of that. 02:01:38

13 I think we're saying the same thing. 02:01:40

14 Q. Okay. 02:01:41

15 Other than the limitation that it's 02:01:44

16 most accurate when individual components are near 02:01:49

17 the 50 percent level, are you aware of any 02:01:51

18 assumptions in terms of the interactions between the 02:01:57

19 components that underlie using the Colby 02:02:00

20 calculation? 02:02:05

21 MR. CARSON: Objection to form. 02:02:05

22 A. I'm not sure that I do. 02:02:11

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1 I don't know that I understand your 02:02:13

2 question, I guess, but I'm not aware of anything 02:02:15

3 that I can answer that question with at this point. 02:02:18

4 Q. If you have a mixture, A plus B, and you 02:02:20

5 want to know if adding C to that mixture is 02:02:39

6 synergistic, what measurements do you need to do? 02:02:44

7 A. Are you asking how I'd set up the trial, 02:02:48

8 or -- I'm sorry. Repeat the question. I mean, 02:02:58

9 maybe give me a little bit more indication of what 02:03:02

10 you want me to respond. 02:03:04

11 Q. If you have a mixture that is fungicides 02:03:05

12 A plus B -- 02:03:09

13 A. It's already a mixture? 02:03:10

14 Q. Correct. 02:03:12

15 A. Is this a -- what kind of mixture is 02:03:12

16 this? Is this a product that you're talking about 02:03:18

17 in a jug? 02:03:20

18 Q. Sure. It can be a commercial product 02:03:23

19 that is a mixture of components A plus B. 02:03:25

20 A. Okay. 02:03:28

21 Q. Okay? Fungicides A plus B, okay? 02:03:29

22 A. Okay. That's what I'm asking. Okay. 02:03:30

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1 Q. If you have a commercial product that is 02:03:32
2 a mixture of fungicides A plus B, and you want to 02:03:34
3 know if adding fungicide C is synergistic -- 02:03:38

4 A. Mm-hmm. 02:03:38

5 Q. -- what measurements do you need to 02:03:46
6 have? 02:03:49

7 MR. CARSON: Objection to form. 02:03:51

8 A. Okay. Before I start looking at 02:03:51
9 measurements, I'd have to figure out how I'm going 02:03:56
10 to set up the trial. 02:03:58

11 And so if I've already got a premix 02:03:59
12 or two components in one jug as a product, then I'm 02:04:02
13 going to have to pull those products out 02:04:06
14 individually as well and test them individually. So 02:04:08
15 I have to get the -- either a product that contains 02:04:11
16 those materials, individually, or active ingredient, 02:04:15
17 as close as you can, to get to the product that you 02:04:20
18 have in that jug. 02:04:25

19 So you're going to have to have each 02:04:25
20 of those components individually, as a treatment, at 02:04:27
21 the rate that they would be provided in the field, 02:04:29
22 with that particular product, okay? So that's one 02:04:35

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1 **thing.** 02:04:38

2 **Then you have to have your treatment** 02:04:39

3 **that you're adding, the new material, whatever that** 02:04:44

4 **is, that new fungicide. And you have to have an** 02:04:47

5 **untreated control. And then you have to have those** 02:04:50

6 **materials in combination.** 02:04:55

7 Q. So you're saying you have to measure -- 02:04:59

8 if we use A, B and C as the three fungicides, are 02:05:02

9 you saying you have to measure A by itself, B by 02:05:05

10 itself, C by itself, and then A plus B plus C 02:05:08

11 together? 02:05:13

12 A. Let me think that through for a second. 02:05:13

13 You definitely have to have an 02:05:24

14 untreated control as well. Okay. So keep that in 02:05:27

15 mind. 02:05:28

16 You should be able -- let me go to 02:05:33

17 Colby itself, if I can. Let me go to that as a -- 02:05:35

18 in my exhibits. 02:05:38

19 Q. You might want Exhibit 1012. 02:05:40

20 A. Okay. That's -- that is correct. 02:05:45

21 (Previously marked Exhibit 1012, Journal of the Weed 02:05:50

22 Society of America, January 1967, was presented.) 02:05:50

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1 **A. Okay. If you will ask the question** 02:07:41

2 **again, I'll try to respond to that.** 02:07:43

3 **Q. So what I'm trying to understand is if** 02:07:45

4 **you have a commercial product as a combination of** 02:07:50

5 **fungicides A and B --** 02:07:52

6 **A. Mm-hmm.** 02:07:52

7 **Q. -- and you want to know relative to that** 02:07:54

8 **commercial product, does a third fungicide, C, add** 02:07:55

9 **any synergistic activity, what measurements do you** 02:08:00

10 **need to do?** 02:08:06

11 **MR. CARSON: Objection to form.** 02:08:07

12 **A. So in a traditional Colby, you would** 02:08:08

13 **have all three of the individual fungicides** 02:08:22

14 **independent, and then you would take the two and the** 02:08:28

15 **one together and apply those together, and determine** 02:08:33

16 **whether or not there is a synergistic interaction** 02:08:37

17 **within those three, within those three fungicides.** 02:08:42

18 **Now, one of the things about Colby,** 02:08:50

19 **and I don't know if this is what you are asking or** 02:08:53

20 **not, but it also would say that that -- the initial** 02:08:55

21 **combination could be where the synergy is coming** 02:08:58

22 **from.** 02:09:01

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1 It doesn't discern within three 02:09:02
2 fungicides which of those is really providing the 02:09:04
3 synergy, but what it does do is say, when I put 02:09:08
4 these three together, there is an unexpected 02:09:11
5 response, if that response is synergy. 02:09:14

6 Does that make sense? 02:09:17

7 Q. I think so, but what I'm not following 02:09:21
8 is, if you just want to know does fungicide C 02:09:24
9 synergistically improve a premix, why you wouldn't 02:09:28
10 do control, premix and premix plus C. 02:09:32

11 Why -- I'm going to talk for a 02:09:39
12 second, then I'll ask a question. 02:09:41

13 A. Okay. Okay. 02:09:44

14 MR. CARSON: Well, I think you 02:09:44
15 should ask questions, not give... 02:09:45

16 Q. So the premise of my hypothetical is 02:09:50
17 you're just trying to discern whether component C 02:09:53
18 does something synergistic to an already-existing 02:09:57
19 combination. 02:10:01

20 In that hypothetical, why wouldn't 02:10:02
21 you want to compare control, premix and C, 02:10:04
22 especially since what you told me a second ago is if 02:10:11

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1 you do it the way you described it, you can't figure 02:10:14

2 out if C is having any synergistic benefit itself? 02:10:15

3 **A. If you really want to know -- it depends 02:10:26**

4 **on what your question is. And I'm not saying your 02:10:28**

5 **question, the question in the field. 02:10:30**

6 **If I want to know specifically where 02:10:32**

7 **synergy is coming from, you need to look at 02:10:38**

8 **individual pairings, okay, as opposed to a grouping 02:10:42**

9 **of these fungicides. 02:10:50**

10 **If the question is, am I getting 02:10:51**

11 **some type of synergy when I put these materials 02:10:54**

12 **together that is unexpected, then that is a -- 02:10:57**

13 **that's another question. 02:11:05**

14 **Q. So if the question is: You have a 02:11:07**

15 **premix of fungicides A plus B -- 02:11:12**

16 **A. Mm-hmm. 02:11:14**

17 **Q. -- and you want to know if adding 02:11:14**

18 **fungicide C synergistically improves control, don't 02:11:18**

19 **you want to do a direct comparison between the 02:11:25**

20 **fungicide A/B, whatever it does, and the combination 02:11:30**

21 **of fungicide A, B and C; isn't that the comparison 02:11:34**

22 **you want to make? 02:11:39**

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[illegible]

2 Q. Why not? 02:11:43

3 A. You still don't -- you can't do that 02:11:44

4 type of a thing because you don't know what the 02:11:48

5 interaction -- there's no way to look at those and 02:11:52

6 interactions from that calculation. 02:11:56

7 And so the answer is, no, you would 02:11:57

8 not do that. 02:11:59

9 Q. If I give you a premix fungicide and I 02:12:00

10 don't tell you what's in it, and I ask you the 02:12:02

```
11 question, does adding fungicide C provide a
```

12 synergistic benefit, what experiment do you do? 02:12:11

13 A. I don't think I could specifically do 02:12:20

14 that experiment because I don't know -- you have to 02:12:22

15 have the individual components in the experiment. 02:12:26

16 So you have to have those individual components. 02:12:30

17 And I have to know what the expected outcome of 02:12:33

18 those individual components is going to be. 02:12:35

19 And then if I'm putting all those 02:12:39

20 together, if I have everything that I need, I could 02:12:40

21 tell you whether those three materials together are 02:12:46

22 providing synergy. I can't necessarily tell you 02:12:49

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1 where are all of those synergies coming from within 02:12:55

2 that mix, but I could tell you if synergy is there. 02:12:59

3 But I can't do what you're saying. 02:13:04

4 I can't do two compounds together, and do some type 02:13:07

5 of a calculation with Colby that's going to tell me 02:13:13

6 what happened there. 02:13:24

7 Q. So -- 02:13:24

8 A. That's not how Colby works. It's not 02:13:25

9 designed that way. 02:13:27

10 Q. So what you're saying is that with 02:13:27

11 Colby, all you can determine is whether the 02:13:33

12 three-part combination, as a whole, provides 02:13:37

13 synergistic effects, as opposed to whether adding a 02:13:41

14 third component provides synergistic effects; is 02:13:44

15 that right? 02:13:49

16 MR. CARSON: Objection to form. 02:13:49

17 A. Again, re -- sorry. State that one more 02:13:49

18 time, because I'm having a hard time following you 02:13:58

19 in the process, but I think -- I think I know what 02:14:00

20 you're saying. 02:14:02

21 Q. With Colby, you can determine whether 02:14:09

22 the three-part combination, as a whole, provides 02:14:12

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1 synergistic effects, but you can't determine whether 02:14:18

2 an individual component is adding synergistic 02:14:26

3 effects; is that right? 02:14:32

4 MR. CARSON: Objection to form. 02:14:33

5 A. You don't know what the interactions are 02:14:33

6 within that three-way combination, and so, it could 02:14:38

7 be that any of those three are interacting in a way 02:14:42

8 that's developing a synergistic effect. 02:14:48

9 It could be that one is interacting 02:14:51

10 with another one, and I don't know which one that 02:14:53

11 provides the synergistic effect. It could be that 02:14:56

12 all three of them are synergizing as well. 02:14:59

13 So Colby doesn't really get at that, 02:15:02

14 so it speak. 02:15:06

15 Q. So for that -- my original question or 02:15:07

16 the theme of my original question, if you have a 02:15:10

17 premix that's A plus B, what you're saying is, with 02:15:13

18 Colby, you can't tell whether C adds synergistically 02:15:17

19 to that two-part combination, you can only tell 02:15:23

20 whether the full collection of A, B and C is 02:15:26

21 synergistic together? 02:15:31

22 A. As long as you have -- 02:15:32

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1 MR. CARSON: Objection to form. 02:15:35

2 A. As long as you have the correct controls 02:15:35

3 in place, which would be an untreated control, and 02:15:37

4 each of those individual components, then you're 02:15:41

5 going to get an idea of generally whether there was 02:15:44

6 synergy occurring. 02:15:48

7 I think what you're saying, and I 02:15:49

8 think I agree with what your premise is, that each 02:15:52

9 of those components, I can't tell how they're 02:15:56

10 interacting within that particular mix when I put 02:15:58

11 the three together. I don't know where the synergy 02:16:01

12 is coming from, specifically, with that testing. 02:16:04

13 Q. Okay. I appreciate it. 02:16:09

14 Sorry for going really into the 02:16:11

15 weeds. 02:16:16

16 A. I'm sure it was necessary. That's good. 02:16:17

17 No problem. 02:16:20

18 And no pun intended. 02:16:29

19 Q. My pun was intentional, actually. 02:16:33

20 Can you turn to Exhibit 1015. 1015. 02:16:36

21 (Previously marked Exhibit 1015, Köller et al. 02:16:43

22 Evaluation of Tactics for Managing Resistance of 02:16:43

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1 Venturia Inaequalis, was presented.) 02:16:43

2 Q. In Paragraph 52 of your declaration, you 02:16:50

3 refer to Exhibit 1015 as no synergy. 02:16:52

4 A. Let me make sure again I've got the 02:17:01

5 right document. This is the Evaluation of Tactics 02:17:03

6 for Managing Resistance of Venturia Inaequalis? 02:17:05

7 Q. Correct. 02:17:05

8 (Clarification requested by the Court Reporter.) 02:17:05

9 A. Evaluation of Tactics for Managing 02:17:05

10 Resistance of Venturia inaequalis. 02:17:05

11 So that's the exhibit, and then the 02:17:22

12 paragraph that I'm on? 02:17:24

13 Q. 52 in your declaration, you refer to 02:17:28

14 this exhibit; is that correct? 02:17:31

15 A. 52. 02:17:33

16 Okay. I'm reading the sentence 02:17:44

17 you're referencing, I think. "For example, Köller 02:17:44

18 found mancozeb was additive with DMI fungicides for 02:17:44

19 disease control..." 02:17:44

20 (Clarification requested by the Court Reporter.) 02:18:13

21 MR. CARSON: Is there a question 02:18:16

22 pending, at this point? 02:18:17

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1 MR. FELDSTEIN: You may as well get 02:18:19

2 the transcription down, and then we'll get a 02:18:21

3 question. 02:18:23

4 BY MR. FELDSTEIN: 02:18:26

5 Q. Are you with me on the sentence in 02:18:26

6 Paragraph 52 of your declaration referring to 02:18:28

7 Exhibit 1015? 02:18:31

8 A. I think so. So this is the, "For 02:18:33

9 example, Köller (Exhibit 1015) found mancozeb was 02:18:35

10 additive with DMI fungicides for disease control of 02:18:39

11 apple scab..." 02:18:44

12 Q. Exactly. 02:18:46

13 Does reporting that it was additive, 02:18:47

14 as you describe it, mean that it was not 02:18:56

15 synergistic? 02:18:59

16 A. Okay. Let's go back to the question. 02:30:42

17 Q. You describe Köller, Exhibit 1015, as 02:30:46

18 showing additive effects of mancozeb and DMI 02:30:50

19 fungicides; correct? 02:30:56

20 A. Yes. 02:30:57

21 Q. Does that mean that the effect of 02:30:58

22 mancozeb and DMI fungicides in Köller, Exhibit 1015, 02:31:05

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1 was not synergistic? 02:31:10

2 A. Specifically, in the document, it says, 02:31:15

3 "The interactive effects" -- 02:31:19

4 Q. I apologize. Where are you reading? 02:31:22

5 A. I'm sorry. I'm reading on page 859 02:31:24

6 under "Relative efficacy of apple-scab control." 02:31:29

7 And I guess it's the -- it may be 02:31:33

8 the second sentence. 02:31:47

9 "The interactive effects of the two 02:31:50

10 mixture components" (0 observed minus Exp -- or "(Obs 02:31:53

11 minus Exp equals -5, +9, and +5 for 1992, 1993, and 02:32:05

12 1994, respectively) suggests that effects were 02:32:13

13 largely additive." 02:32:19

14 And so that's his -- that is the 02:32:21

15 Köller synopsis. 02:32:32

16 Q. All right. 02:32:35

17 The question is: Does that mean 02:32:36

18 that the effect of mancozeb with DMI fungicides was 02:32:38

19 not synergistic? 02:32:48

20 A. Within the context of this particular 02:32:50

21 system where you're applying fenarimol as the DMI 02:32:54

22 and mancozeb as the EBDC using the rates that were 02:33:02

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1 reviewed, and looking at specifically apple scab in 02:33:07
2 that environment, in that site, then it would say 02:33:12
3 they were additive, and not synergistic for that 02:33:16
4 trial. 02:33:19

5 Q. Thank you. 02:33:21

6 Can you turn in your declaration to 02:33:35
7 Paragraph 258. 02:33:37

8 MR. CARSON: Since we're turning to 02:33:53
9 a new subject, it looks like, can we take a 02:33:55
10 five-minute break. 02:33:57

11 MR. FELDSTEIN: Sure. 02:33:58

12 Off the record, please. 02:33:59

13 THE VIDEOGRAPHER: Time is 2:34 p.m. 02:34:00
14 We are now off the record. 02:34:04

15 (RECESS, 2:34 p.m. - 2:41 p.m.) 02:34:06

16 THE VIDEOGRAPHER: Time is 2:41 p.m. 02:40:14
17 We are now on the record. 02:40:16

18 BY MR. FELDSTEIN: 02:40:17

19 Q. Doctor, we were at Paragraph 258 of your 02:40:20
20 declaration; right? 02:40:24

21 A. Okay. 258, I am there. 02:40:25

22 Q. In Paragraph 258, you rely on 02:40:27

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1 Exhibit 1020, the declaration of Caio Prates; 02:40:31

2 correct? 02:40:37

3 A. Yes, that is correct. 02:40:37

4 Q. You, in fact, considered Exhibit 1020? 02:40:38

5 (Previously marked Exhibit 1020, Declaration of Caio 02:40:42

6 Prates, was presented.) 02:40:42

7 A. I have considered that, yes. 02:40:42

8 Q. You rely on Exhibit 1020; correct? 02:40:43

9 A. Correct. 02:40:46

10 Q. Exhibit 1020 includes what you described 02:40:52

11 as results from certain field trials; correct? 02:40:54

12 A. Yes, that is correct. 02:40:58

13 Q. It's certain field trials with certain 02:41:10

14 fungicides; correct? 02:41:14

15 A. That is correct. 02:41:16

16 Q. Do you know who selected those 02:41:19

17 fungicides for testing? 02:41:25

18 A. I do not. 02:41:26

19 Q. The fungicides are tested at certain 02:41:26

20 rates; correct? 02:41:32

21 A. That is correct. 02:41:33

22 Q. Do you know who selected the rates? 02:41:35

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A. I do not. 02:41:37

2 Q. Do you know why the rates were selected 02:41:38
3 that were used? 02:41:40

4	A. So the question is do I know why the	02:41:41
5	rates were selected, is that correct, from this	02:44:14
6	declaration on --	02:44:19

7 Q. Just generally, do -- is not -- the 02:44:20
8 question is: Do you know why the rates that were 02:44:22
9 used in Exhibit 1020 were selected? 02:44:25

10 A. I know that some of the rates were 02:44:27
11 selected based on -- I need to go back to -- let me 02:44:34
12 confirm this real quick. 02:44:40

13	MR. CARSON: Dr. Brannen, I think	02:45:28
14	Mr. Feldstein wouldn't mind if you wanted to take	02:45:31
15	that apart so you could cross-reference things. I	02:45:32
16	don't think he would have an objection.	02:45:35

17 Q. Let me -- I wouldn't, but let me 02:45:37

18 withdraw the question, and move on, Doctor. 02:45:38

19	With respect to the Prates	02:45:43
20	declaration, Exhibit 1020, with -- I'm going to	02:45:47
21	change the question. Try to simplify things.	02:45:49

22 A. Okay. You're going back to the 02:45:50

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1 **declaration?** 02:45:51

2 Q. Just the declaration now. 02:45:51

3 **A. Okay.** 02:45:52

4 Q. Are you aware of any additional data 02:45:57

5 underlying the field tests that are described in 02:45:59

6 Exhibit 1020 beyond what's in Exhibit 1020 itself? 02:46:04

7 **A. Get back to Exhibit 1020.** 02:46:08

8 **Am I aware of any additional data?** 02:46:13

9 Q. Are you aware of any additional data 02:46:17

10 underlying the field tests that are described in 02:46:19

11 Exhibit 1020 beyond the data in Exhibit 1020 itself? 02:46:22

12 **A. No.** 02:46:25

13 Q. Did you request any additional data for 02:46:25

14 your consideration of Exhibit 1020? 02:46:29

15 **A. No.** 02:46:31

16 Q. In Paragraph 258 of your declaration -- 02:46:32

17 well, let me ask a question first. 02:47:05

18 Are you away of any statistical 02:47:08

19 analyses associated with the data that's reported in 02:47:10

20 Exhibit 1020? 02:47:14

21 MR. CARSON: Objection to form. 02:47:17

22 **A. Okay. So we're back to the --** 02:47:17

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1 Q. Yeah, I apologize for jumping around. 02:47:29

2 A. -- the Prates declaration? 02:47:31

3 Q. Let me clarify the question again, too. 02:47:33

4 Does Exhibit 1020 include any 02:47:36

5 statistical analysis? 02:47:38

6 A. It does include information about the 02:47:39

7 trial design itself. It was a completely randomized 02:47:42

8 block design. It had four reps. It gives the plot 02:47:47

9 size. Also provides the type of data that was taken 02:47:52

10 with percent severity being the disease management 02:47:59

11 that was required -- or that was taken in field 02:48:05

12 test 1. 02:48:08

13 It was repeated in four areas in 02:48:11

14 Brazil. 02:48:18

15 Table 2, field test 1. Sorry, not 02:48:23

16 Table 2. 02:48:30

17 Let's go to field test 2. Trial 02:48:31

18 design was completely randomized block with four 02:48:35

19 replications. Plot size was given. Again, 02:48:38

20 application timings, assessment as to percent 02:48:43

21 severity is one of the assessments that was taken. 02:48:47

22 So from that perspective, there's at 02:48:50

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1 least the basics for a statistical design. 02:48:54

2 Q. Is there any statistical data in 02:48:56

3 Exhibit 1020? 02:49:00

4 A. As far as the actual reported 02:49:01

5 information that's provided, we don't have any 02:49:08

6 distinction as far as the statistical significance 02:49:11

7 within the observations that are there. 02:49:15

8 What it does do is it provides an 02:49:18

9 indication of the -- in both trials, the 02:49:24

10 interactions that are occurring with these various 02:49:29

11 formulations. And within those formulations, there 02:49:33

12 is a negative interaction of those particular 02:49:37

13 compounds. 02:49:43

14 So there's no evidence of synergy in 02:49:44

15 this particular -- these particular combinations. 02:49:48

16 And that's true in both trials. If 02:49:53

17 you look at both trials, there's no evidence that 02:49:57

18 synergy is occurring. In fact, just the opposite. 02:50:01

19 The general information that's provided is there's a 02:50:04

20 pretty substantial antagonism that appears to be 02:50:09

21 there based upon what we can see at this point. 02:50:14

22 Q. Is there any statistical significance to 02:50:16

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1 that antagonism? 02:50:19

2 A. From the standpoint of the significance, 02:50:20

3 that's not provided, but the direction of the 02:50:23

4 antagonism is there, and it's very strong. 02:50:28

5 So that differs dramatically from 02:50:31

6 the '727 Patent where there was the report of a 02:50:36

7 positive interaction of some of these materials that 02:50:47

8 are applied here. 02:50:51

9 Q. You know, I hadn't asked you about the 02:50:52

10 '727 Patent just now. 02:50:53

11 Were you prepared to answer 02:50:54

12 questions about the Prates declaration with respect 02:50:56

13 to statistical significance to reference the 02:51:01

14 '727 Patent; is that something you prepared to do 02:51:03

15 before coming in here today? 02:51:06

16 MR. CARSON: Objection. 02:51:07

17 I don't think you're -- that's -- I 02:51:09

18 don't think you're entitled to ask how he prepared, 02:51:11

19 or what his discussions were with the attorneys. 02:51:15

20 I would note that you actually asked 02:51:17

21 a question a minute ago that directed him to the 02:51:18

22 '727 Patent. 02:51:21

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1 Q. Can you answer the question, sir? 02:51:23

2 A. Again, what is the question that was 02:51:25

3 asked? 02:51:26

4 Q. Was it something you were prepared to do 02:51:29

5 coming in here today for your deposition, to link 02:51:31

6 the statistical -- the absence of statistical 02:51:36

7 significance in the Prates declaration, 02:51:38

8 Exhibit 1020, to comments about the '727 Patent? 02:51:41

9 MR. CARSON: Objection to form. 02:51:45

10 A. The '727 Patent itself, actually, some 02:51:45

11 of the treatments that are in here are in the 02:51:52

12 '727 Patent, and the interesting thing about this is 02:51:53

13 the fact that it does not show the same responses as 02:51:59

14 are -- I should say the '727 Patent actually claims 02:52:03

15 there is a synergy of some kind, and this does not 02:52:09

16 show that. 02:52:12

17 Q. So that wasn't the answer to my 02:52:13

18 question, sir, and I'm going to move to strike that 02:52:14

19 answer. 02:52:16

20 The question is: Was this something 02:52:17

21 you came prepared to address -- did you come in to 02:52:21

22 your deposition today prepared to link the absence 02:52:31

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1 of statistical significance in the Prates 02:52:33

2 declaration to the '727 Patent? 02:52:36

3 MR. CARSON: Objection to form. 02:52:38

4 A. I have prepared for this the whole time. 02:52:39

5 And so I would say, yes, and it's something that I 02:52:46

6 have been prepared to discuss, yes. 02:52:48

7 Q. Did your counsel direct you to link the 02:52:50

8 absence of statistical significance in Exhibit 1020 02:52:53

9 to comments about the '727 Patent? 02:52:56

10 MR. CARSON: Objection. 02:52:58

11 Attorney-client privilege. 02:53:00

12 I instruct you not to answer. 02:53:01

13 Q. Are you going to answer, sir? 02:53:04

14 MR. CARSON: I instruct you not to 02:53:05

15 answer. So you can answer his question as to 02:53:06

16 whether or not you're going to answer. 02:53:11

17 A. He's instructed me not to answer. 02:53:14

18 Q. So are you going to answer; yes or no? 02:53:17

19 A. No. 02:53:18

20 Q. You'd agree with me that without 02:53:19

21 statistical significance, it's not possible to make 02:53:23

22 conclusions about enhanced efficacy and synergy; 02:53:26

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1 correct? 02:53:30

2 MR. CARSON: Objection to form. 02:53:31

3 A. I would say that it is helpful to have 02:53:31

4 that information. Most of the patents that I've 02:53:37

5 looked at in this case, they generally make comments 02:53:41

6 about synergy based on the direction of the Colby 02:53:44

7 calculation, but it would be helpful to have a 02:53:51

8 statistical analysis. 02:53:55

9 Q. So would you agree with me, yes or no, 02:53:56

10 that without statistical analyses, it is not 02:53:59

11 possible to make findings and conclusions about 02:54:02

12 enhanced efficacy and synergy? 02:54:07

13 MR. CARSON: Objection to form. 02:54:10

14 A. I would not agree with you on that. 02:54:10

15 Q. Okay. 02:54:12

16 Can we turn in your declaration to 02:54:17

17 Exhibit -- excuse me, Appendix C. Skipping around a 02:54:20

18 little bit. I apologize. 02:54:33

19 I want to clarify something for the 02:54:34

20 record. Are you in Appendix C, the claim chart? 02:54:35

21 A. I have it here, yes. 02:54:39

22 Q. And -- 02:54:39

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1 A. I'll pull it out. 02:54:43

2 Q. -- I believe I may have referenced 02:54:44

3 Appendix -- the claim chart as Appendix B before, 02:54:48

4 but the claim chart that you're looking at is, in 02:54:53

5 fact, Appendix C; is that correct? 02:54:57

6 A. I think that is correct, yes. It should 02:54:58

7 be. 02:55:01

8 Q. Okay. 02:55:01

A. **Correct.**

10 Q. What was your role in preparing the 02:55:03

11 information in Appendix C of your declaration; what 02:55:05

12 did you do specifically, yourself, distinct from 02:55:11

13 counsel? 02:55:15

14 A. I think it would be accurate to say that 02:55:18

15 within this claim chart, I was present while we 02:55:21

16 discussed these claims, and went through these 02:55:25

17 **claims with counsel.** 02:55:29

18 Again, the -- I'm not a patent 02:55:31

19 lawyer, I don't do patents, so it was helpful to 02:55:35

20 have this information as I go through in this 02:55:38

21 particular section to be provided in a way that I 02:55:42

22 can actually look at it and help to interpret it at 02:55:45

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1 **some point.** 02:55:49

2 **With -- in the context of some of** 02:55:51

3 **the calculations and things like that that are** 02:55:54

4 **provided here in this document, I've gone through** 02:55:55

5 **with counsel, and we've done those together,** 02:55:59

6 **confirmed them, looked at them together.** 02:56:03

7 **So that -- does that -- that should** 02:56:09

8 **be the answer to your question, I think.** 02:56:11

9 Q. So just in Appendix C of your 02:56:13

10 declaration, was there anything specific you can 02:56:16

11 identify as a contribution you made independent of 02:56:18

12 counsel? 02:56:23

13 A. **Not independent of counsel. I would say** 02:56:24

14 **this is something that I have done with counsel.** 02:56:27

15 Q. Okay. 02:56:30

16 Is there anything specific that you 02:56:32

17 contributed to in Exhibit C with counsel -- 02:56:36

18 MR. CARSON: Objection to form. 02:56:40

19 Q. -- that you can identify here? 02:56:41

20 MR. CARSON: Objection to form. 02:56:43

21 A. **Do you mean independent of counsel, like** 02:56:43

22 **totally independent?** 02:56:46

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1 Q. No, no. No. 02:56:47

2 The question was: Is there anything 02:56:49

3 in Exhibit C of your declaration that you can 02:56:50

4 identify as having done together with counsel, 02:56:53

5 anything specific? 02:56:58

6 A. That I have done together with counsel? 02:57:00

7 Q. Correct. 02:57:02

8 MR. CARSON: Objection to form. 02:57:03

9 Q. For example, I assume you didn't type 02:57:05
10 it; correct? 02:57:07

11 A. I did not type it. 02:57:07

12 Q. Is there anything that -- in 02:57:08
13 Exhibit C -- Appendix C of your declaration that you 02:57:10
14 can identify as having done together with counsel, 02:57:13
15 specifically? 02:57:16

16 MR. CARSON: Objection to form. 02:57:17

17 A. I think it is accurate to say -- or I 02:57:17
18 will say, it is accurate to say that within these 02:57:22
19 claim charts, counsel and I have gone through all of 02:57:26
20 these claims together. I spent a tremendous amount 02:57:29
21 of time with counsel looking at the claims, and 02:57:32
22 reviewing the claims, and determining what is in the 02:57:35

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1 claim chart. 02:57:41

2 I also spent time with counsel, and 02:57:41

3 we looked at the particular measurements that are 02:57:43

4 provided here, as well within the claim charts, as I 02:57:48

5 went through those together. I worked on those, 02:57:53

6 too. I have done those as well so that I understand 02:57:56

7 them, and make sure that they're accurate as well. 02:57:59

8 But within the context of this, the 02:58:01

9 counsel and I have looked at these different claims 02:58:09

10 and responses together at all points. 02:58:13

11 Q. There are parts that counsel contributed 02:58:17

12 to Exhibit C; correct? 02:58:19

13 MR. CARSON: Objection to form. 02:58:27

14 A. Counsel did contribute to this in 02:58:27

15 relationship to the patent law, the way this is set 02:58:29

16 up, the way that this -- the claim chart is actually 02:58:32

17 developed, because again, those are -- that's 02:58:37

18 information that I do not have privy to. I don't -- 02:58:40

19 I'm not an expert in that area. So that is -- that 02:58:43

20 is what counsel provided. 02:58:46

21 Q. So is there anything specific that you 02:58:47

22 can point to that you did in collaboration with 02:58:49

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1 counsel? 02:58:52

2 MR. CARSON: Objection. Asked and 02:58:57

3 answered. 02:58:58

4 A. I'll re-answer that same question again, 02:58:58

5 if you want me to. 02:59:01

6 MR. CARSON: I don't think you need 02:59:02

7 to repeat answers. 02:59:03

8 THE WITNESS: Okay. 02:59:03

9 MR. CARSON: It's asked and 02:59:05

10 answered. If you want to ask a different question, 02:59:05

11 we can move on. 02:59:08

12 BY MR. FELDSTEIN: 02:59:09

13 Q. Can you answer the question, sir? 02:59:09

14 A. Again, if you look at the information 02:59:10

15 that's provided, counsel and I worked on this 02:59:12

16 together. I was with counsel, and we worked through 02:59:17

17 these various claims, and how this fits within the 02:59:21

18 claims, together. 02:59:25

19 And then if you look at some of the 02:59:27

20 calculations that are provided, I also worked with 02:59:28

21 counsel in developing those calculations, and worked 02:59:34

22 on checking those calculations as well. 02:59:38

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1 Q. Which calculations in Exhibit C -- 02:59:41

2 Appendix C? 02:59:43

3 A. If you look at the various rates that 02:59:43

4 are provided, when you're looking at -- I think it's 02:59:47

5 claim -- let's look at the claim. I'm sorry. Let 02:59:53

6 me look at claims specifically. 02:59:57

7 If you look at the patent, the 03:00:22

8 '727 Patent, under the invention claims, there's 03:00:25

9 Claim 7 and then 8, there are ratios and percentages 03:00:36

10 which are given there. And for the response within 03:00:41

11 the columns where we respond to those items, we had 03:00:44

12 to actually do calculations associated with that and 03:00:48

13 figure out whether or not these -- the other 03:00:53

14 material that we provided here, the different 03:00:58

15 resources, the different references, whether they 03:01:00

16 fall within the ranges that are provided by the 03:01:03

17 '727 Patent. And so we did do those as well. 03:01:06

18 Q. Where is that calculation shown in 03:01:11

19 Appendix C? 03:01:13

20 A. So, as an example, it may not be 03:01:14

21 actually in Appendix C, but when you reference the 03:04:18

22 Claims 1, 3, 4, 7, 9 and 10 of the '727 Patent are 03:04:29

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1 anticipated by Godoy, it's on the first page. 03:04:35

2 And then when you go to the Claim 7, 03:04:49

3 this is where this is derived from as far as the 03:04:51

4 calculations that we used to show that we're within 03:04:57

5 the range of Claim 7 on the '727 Patent. 03:05:07

6 And then when you go to the 03:05:11

7 declaration itself, where it references that, it 03:05:12

8 gives specifically that the -- let me just read 03:05:18

9 what's here. 03:05:22

10 "For example, the fungicidal 03:05:23

11 combination shown for Treatments 17 and 23 in 03:05:27

12 Table 3 of Godoy have a ratio of benzovindiflupyr of 03:05:32

13 (30 (Dose grams of active ingredient per hectare)) 03:05:43

14 to mancozeb (1500 and 2000 (Dose grams of active 03:05:49

15 ingredient per hectare)) of 30 to 1500 and 30 to 03:05:57

16 2000, or a ratio of 1:50 and 1:67, respectively. 03:06:01

17 See Treatments 17 and 23 in Table 5 Godoy 03:06:07

18 (Exhibit 1005) at page 3." (As read.) 03:06:12

19 When you look at here on the claim 03:06:17

20 chart, it's "see citation of Claim 1," but then we 03:06:19

21 have Treatment 17 listed here, and Treatment 23. 03:06:24

22 So, again, it's referencing the same 03:06:28

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1 calculations. 03:06:31

2 Q. Thank you, Doctor. 03:06:32

3 Can you turn in your declaration to 03:06:33

4 Paragraph 63. 03:06:35

5 **A.** **Paragraph 63. I'm -- oh, I'm sorry.** 03:06:38

6 **You said Paragraph 63.** 03:06:48

7 Q. Correct. 03:06:51

A. I am at Paragraph 63. 03:06:58

9 Q. In Paragraph 63, you're referencing the 03:07:00

10 data from the '727 Patent that you've then 03:07:03

```
11 summarized in the table above; correct?                                03:07:06
```

A. That is correct. 03:07:10

13 Q. In Paragraph 63, you say that it is 03:07:33

14 "odd" that the addition of mancozeb brought disease 03:07:39

```
15 control up to the same level in the first and second 03:07:48
```

16 years; correct? 03:07:52

A. That is correct.

18 Q. Why is it odd? 03:07:54

19 **A.** It's just odd. 03:07:56

20 If you look at the data that's 03:07:58

21 provided here, A2, in both years, the numbers there 03:08:03

22 are 95.07, which that's four significant digits, and 03:08:08

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```
1  it's accurate to four significant digits.                                03:08:16
```

2 That is just an odd response. 03:08:19

3	Q.	Well, that's the next sentence that you	03:08:21
4		are talking about the four significant differences,	03:08:23
5		I thought.	03:08:27

6	Is that the only thing that's odd	03:08:28
7	about bringing disease control up to the same level	03:08:29
8	the first and second year?	03:08:33

9 MR. CARSON: Objection to form. 03:08:35

10 A. It's just an observation. That's all it 03:08:35
11 is, an observation. It is odd that you would get 03:08:41
12 that response that is that exacting. 03:08:43

13	Q. Is the only oddity the fact that you're	03:08:47
14	getting the same value to two decimal places, or is	03:08:49
15	there something else odd in your opinion about	03:08:55
16	getting to the same level first year, second year,	03:08:58
17	by the addition of mancozeb?	03:09:02

18	A. It would be very unusual for you to get	03:09:04
19	to the exact same level in two years of testing with	03:09:09
20	any treatment, and especially to four decimal	03:09:14
21	places.	03:09:19

22 Q. So example B -- Treatment B2, it doesn't 03:09:19

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1 get to the exact same level the first year and the 03:09:23

2 second year; correct? 03:09:27

3 **A. That is correct.** 03:09:28

4 **Q.** Is that odd that mancozeb brought them 03:09:28

5 up to close to the same level the first year and the 03:09:30

6 second year, or is that not odd? 03:09:37

7 **A.** It is -- again, it's just an 03:09:39

8 **observation, but it's unusually close response for** 03:09:42

9 **two different years of testing, for different** 03:09:46

10 **disease levels, to get to near the same exact** 03:09:50

11 **measurement by random chance alone, but that's --** 03:09:56

12 **it's just an observation.** 03:09:59

13 **Q.** So Treatment B1 is 87.14 the first year 03:10:00

14 and 70.23 the second year; correct? 03:10:08

15 **A. That is correct.** 03:10:12

16 **Q.** What would have been expected for 03:10:13

17 mancozeb in terms of disease control addition for 03:10:14

18 those two starting points? 03:10:21

19 **MR. CARSON:** Objection to form. 03:10:26

20 **A.** Again, we don't know exactly what would 03:10:26

21 **happen because, again, it's a different year, and** 03:10:36

22 **it's different treatments. Not -- I mean, the same** 03:10:38

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1 treatments, but it's different year, different 03:10:45

2 disease pressure, different environment. 03:10:48

3 But if you were to have a heavier 03:10:50

4 disease pressure, you would expect that the mancozeb 03:10:56

5 would not give the same degree of control that you 03:11:01

6 would have observed in that next year. 03:11:09

7 So that's -- in and of itself, 03:11:12

8 though, it's just data. It's just data, though. 03:11:15

9 Q. Yeah. I'm sorry. I'm not fully 03:11:19
10 understanding. 03:11:21

11 Are you saying that you would have 03:11:22
12 expected mancozeb to increase the control by the 03:11:23
13 same amount each year regardless of where you 03:11:26
14 started, whether you started at 87 or whether you 03:11:32
15 started at 70? 03:11:35

16 A. Not necessarily. Not necessarily. 03:11:36

17 Again, it's -- you have to look at 03:11:38
18 each trial independent. There are going to be 03:11:43
19 variability in each trial, so I can't -- I can't 03:11:45
20 make any conclusions about that from this trial. 03:11:49

21 Q. So would you have expected that adding 03:11:51
22 mancozeb to a year where it was -- where the 03:11:55

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1 reference was -- excuse me. 03:12:03

2 Would you have expected that adding 03:12:04

3 mancozeb on both years would have brought up the 03:12:07

4 levels of control to approximately the same level, 03:12:12

5 even though B1, those two years was a different 03:12:17

6 starting point? 03:12:21

7 MR. CARSON: Objection to form. 03:12:22

8 A. I just don't know. I can't say one way 03:12:23

9 or the other with that particular data set what's 03:12:28

10 going on there. 03:12:29

11 Q. Okay. 03:12:30

12 A. So it's just a -- it's a field trial. 03:12:31

13 The data is what it is, and I can't make any 03:12:33

14 statement beyond that, really. 03:12:36

15 Q. Okay. 03:12:37

16 Can you turn in -- to Exhibit 1007. 03:12:38

17 (Previously marked Exhibit 1007, WIPO 2015/079334 03:12:45

18 A1, De Oliveira patent, was presented.) 03:12:45

19 A. Oh, I'm sorry. Exhibit 1007. 03:12:53

20 This is the De Oliveira patent; 03:13:23

21 right? 03:13:29

22 Q. Correct. 03:13:29

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1 A. Okay.

2 Q. You are familiar with Exhibit 1007? 03:13:30

A. I am. 03:13:32

4 Q. Can you turn to the page that's numbered 03:13:33

5 15 at the top. 03:13:34

6 **A. 15.** 03:13:50

7 I'm at page 15. 03:13:51

8 Q. The first full paragraph begins, "In 03:13:52

9 another embodiment, the systemic fungicide of the 03:13:56

10 present invention is a succinate dehydrogenase 03:13:59

```
11 inhibitor fungicide (SDHI)." 03:14:04
```

12 Do you see that? 03:14:07

A. I do see that.

14 Q. And then, "Preferably," and there's a 03:14:09

15 list of compounds; correct? 03:14:10

16 A. I do see that.

03:14:13

17 Q. Are all the compounds listed SDHIs? 03:14:22

18 A. I assume they are, in light of the 03:14:26

19 paragraph. I am not familiar with all of these 03:14:36

20 compounds, but the paragraph says they're SDHIs, and 03:14:38

21 so that would be how I would interpret that. 03:14:45

22 Q. What would be understood by the person 03:14:48

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1 of ordinary skill reading this paragraph as to why 03:14:54

2 these SDHIs are preferred? 03:14:55

3 **A. I don't know why they would be listed as** 03:15:15

4 **preferred. I don't know why they're preferred in** 03:15:18

5 **that sense, versus other SDHIs. I don't know why** 03:15:21

6 **there would be a preference at that point for them,** 03:15:26

7 **but I don't know.** 03:15:28

8 **Q. So what would a person of ordinary skill** 03:15:29

9 **in the art take from De Oliveira stating that these** 03:15:30

10 **are the preferred SDHIs?** 03:15:38

11 **A. Just that that is what Oliveira says** 03:15:44

12 **would be preferred. I don't think it necessarily** 03:15:49

13 **means that they're the only SDHIs, but these are the** 03:15:50

14 **ones within this patent that are listed as the** 03:15:53

15 **preferred ones within this patent. And those are** 03:15:55

16 **the SDHIs that may have been available at the time,** 03:15:59

17 **as well. That's another thing.** 03:16:04

18 **Q. Benzovindiflupyr is not one of the** 03:16:15

19 **preferred SDHIs; correct?** 03:16:16

20 **A. It is not listed in this particular** 03:16:18

21 **patent as a preferred SDHI in that particular** 03:16:20

22 **paragraph.** 03:16:24

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1 Q. It's not listed anywhere in 03:16:24

2 Exhibit 1007; correct? 03:16:31

3 Let me ask this way: Without 03:16:38

4 reading the whole thing, are you aware of whether or 03:16:40

5 not Exhibit 1007 discloses benzovindiflupyr? 03:16:42

6 A. I do not see a reference to 03:19:37

7 benzovindiflupyr in the document. 03:19:38

8 Q. Turning back to page numbered 15 of 03:19:39

9 Exhibit 1007, the next paragraph begins, "Thus." 03:19:42

10 Do you see that? 03:19:48

11 A. Yes. 03:19:49

12 Q. And take your time to read anything in 03:19:49

13 there you'd like, but at the very end, do you see 03:19:51

14 where it refers to "concurrently, prior or 03:19:56

15 subsequently"; do you see that? 03:20:00

16 A. In that paragraph? 03:20:02

17 Q. The end of that paragraph, correct. 03:20:06

18 A. So we're on page 15, and it starts, 03:20:09

19 "Thus." 03:20:14

20 Q. Correct. 03:20:15

21 It's the second to last line of the 03:20:15

22 paragraph, "concurrently, prior or subsequently." 03:20:16

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1 Do you see that? 03:20:20

2 A. Let me read through this so I can get 03:20:21
3 the context. 03:20:23

4 Okay, I see that. 03:21:33

5 Q. Do you agree that Exhibit 1007 doesn't 03:21:34
6 provide any guidance for when any individual SDHI 03:21:44
7 should be added either concurrently, prior or 03:21:50
8 subsequently? 03:21:55

9 MR. CARSON: Objection to form. 03:21:59

10 A. In this particular paragraph, this 03:21:59
11 allows the SDHI, as I read it, to be applied 03:22:40
12 "...concurrently, prior or subsequently to the 03:22:45
13 dithiocarbamate fungicide..." That's what that 03:22:51
14 paragraph does say. 03:22:53

15 Q. There's no guidance pointing you to one 03:22:53
16 of those three options over any of the others for 03:22:56
17 any particular SDHI; correct? 03:22:59

18 A. Not within that paragraph specifically. 03:23:27

19 Q. Doctor, during any of the breaks, did 03:23:28
20 you discuss the substance of this case or your 03:23:30
21 deposition with counsel? 03:23:34

22 A. No. 03:23:35

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1 Q. Okay. 03:23:36

2 MR. FELDSTEIN: Can we take a break 03:23:37

3 for a few minutes, see if I can finish up? 03:23:38

4 MR. CARSON: Yeah. Sure. 03:23:39

5 MR. FELDSTEIN: Off the record, 03:23:40

6 please. 03:23:41

7 THE VIDEOGRAPHER: Time is 3:24 p.m. 03:23:42

8 We are now off the record. 03:23:44

9 (RECESS, 3:24 p.m. - 3:32 p.m.) 03:24:20

10 THE VIDEOGRAPHER: Time is 3:32 p.m. 03:31:59

11 We are now on the record. 03:32:01

12 MR. FELDSTEIN: Doctor, thank you 03:32:02

13 for your time. We have no further questions for you 03:32:03

14 at this time. 03:32:04

15 THE WITNESS: Thank you very much. 03:32:06

16 MR. CARSON: Dr. Brannen, I have a 03:32:07

17 few questions. 03:32:08

18 EXAMINATION 03:32:10

19 BY MR. CARSON: 03:32:10

20 Q. Dr. Brannen, are there any typographical 03:32:10

21 errors in your report that you would like to fix? 03:32:13

22 A. There is one. See if I can find this 03:32:17

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1 **real quick.** 03:32:23

2 **In the bottom of page 32, that next** 03:32:37

3 **to the last sentence, that "fluoro" should be** 03:32:44

4 **"chloro."** 03:32:49

5 Q. So just to be clear, can you read the 03:32:51

6 sentence as it appears in your report that you're 03:32:53

7 referring to. 03:32:56

8 A. **Yes.** 03:32:57

9 Q. Read it slowly, please. 03:32:58

10 A. **Yes.** 03:33:00

11 **"Formula (I) includes** 03:33:02

12 **benzovindiflupyr when R1 is difluoromethyl and X is** 03:33:04

13 **fluoro."** 03:33:09

14 **That's the current reading.** 03:33:11

15 **And it should now read, "Formula (I)** 03:33:12

16 **includes benzovindiflupyr when R1 is difluoromethyl** 03:33:18

17 **and X is chloro."** 03:33:25

18 **(Clarification requested by the Court Reporter.)** 03:33:25

19 A. **Chloro.** 03:33:33

20 Q. Okay. 03:33:40

21 Then if I could direct you to 03:33:42

22 Paragraph 76 of your declaration. 03:33:43

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A.

76. I am there.

2 Q. Okay. 03:33:55

3 Mr. Feldstein asked you a series of 03:33:56

4 questions earlier today about Paragraph 76 and your 03:33:56

5 understanding of the terms "composition" and 03:34:02

```
6 "combination." 03:34:04
```

7 Do you recall that? 03:34:05

8 A. I do. 03:34:05

9 Q. In your view, would a person of ordinary 03:34:06

10 skill in the art consider the claims of the 03:34:14

11 '727 Patent limited to a tank mix? 03:34:15

12 MR. FELDSTEIN: Object to form. 03:34:19

13 Leading. 03:34:21

14 A. It would not be limited to a tank mix 03:34:23

15 **because it does actually have a section within it** 03:34:28

16 that has to do with sequential application as well. 03:34:36

17 Q. When you say "it," you're referring to 03:34:43

18 the '727 Patent? 03:34:45

19 A. Correct. It does, at least within the 03:34:47

```
20 context, have a sequential application reference. 03:34:51
```

21 And tank mix, you know, again, is 03:34:57

22 probably the most common thing that is observed 03:35:07

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1 there. 03:35:14

2 (Clarification requested by the Court Reporter.) 03:35:14

3 A. The common thing that is observed in the 03:35:15

4 patent is tank mixing. 03:35:17

5 It says at the bottom of column 19 03:35:36

6 in the patent, on the last paragraph, it says, "The 03:35:43

7 composition of the present invention may be applied 03:35:52

8 simultaneously as a tank mix or a formulation or may 03:35:54

9 be applied sequentially." 03:35:58

10 Q. Are you reading from lines 61 to 63 in 03:36:04

11 column 19? 03:36:07

12 A. That is correct. 03:36:08

13 Q. So in light of that disclosure that 03:36:08

14 you've just read, if we go to Claim 1 of the 03:36:16

15 '727 Patent at column 21, how would a person of 03:36:22

16 ordinary skill in the art understand this claim in 03:36:30

17 terms of whether it's a tank mix or a sequential 03:36:31

18 application? 03:36:35

19 MR. FELDSTEIN: Objection. Form. 03:36:35

20 Leading. Beyond the scope. 03:36:37

21 A. Well, based on what it actually says, it 03:36:40

22 says, it is "A fungicidal combination consisting of 03:37:19

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1 **benzovindiflupyr, mancozeb, and at least another** 03:37:23
2 **fungicide selected from an ergosterol biosynthesis** 03:37:28
3 **inhibitor fungicide, and a quinone outside inhibitor** 03:37:34
4 **fungicide..."** 03:37:38

5 **Again, that could be a tank mix, as** 03:37:39
6 **I would see it. It could be a tank mix of products,** 03:37:42
7 **the individual fungicides added together.** 03:37:48

8 **And based on the sequential language** 03:37:52
9 **that was just referenced a minute ago, there would** 03:37:55
10 **have to be some type of a sequence of materials as a** 03:37:57
11 **possibility, at least.** 03:38:02

12 Q. Well, let me ask you this: 03:38:03

13 So in terms of your opinions in this 03:38:05
14 case regarding anticipation, your opinions regarding 03:38:08
15 the invalidity of the patent, does it matter to your 03:38:14
16 opinions whether or not Claim 1 is limited to a tank 03:38:17
17 mix, or also includes sequential application? 03:38:22

18 MR. FELDSTEIN: Object to form. 03:38:26
19 Leading. Beyond the scope. 03:38:29

20 A. I'm not sure that -- repeat the 03:38:30
21 question, please, one more time. Let me make sure. 03:38:39

22 Q. Well, let's assume -- perhaps the 03:38:42

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1 question is not clear. 03:38:44

2 Let's assume Claim 1 is limited to a 03:38:44

3 tank mix. 03:38:47

4 A. Mm-hmm. 03:38:48

5 Q. Would that affect your opinion -- 03:38:48

6 opinions in this case with respect to anticipation? 03:38:52

7 MR. FELDSTEIN: Object to form. 03:38:56

8 Leading. Beyond the scope. 03:38:59

9 A. No, it would not, if it's limited to a 03:38:59

10 tank mix, and I think the vast majority of what 03:39:02

11 we're dealing here within this patent and also in 03:39:06

12 Godoy, as an example, which we reference, is a tank 03:39:11

13 mix, and the work is done with tax mixes. 03:39:14

14 And so that is the predominant 03:39:17

15 thing, so it would not affect my opinion of this. 03:39:20

16 Q. Okay. 03:39:26

17 You said that Godoy is a tank mix? 03:39:28

18 A. Godoy, it -- 03:39:30

19 MR. FELDSTEIN: Object to -- is this 03:39:32

20 a question? I'm sorry. 03:39:33

21 MR. CARSON: I'm just confirming 03:39:33

22 that that's what he just said, so it is a question. 03:39:35

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1 MR. FELDSTEIN: Okay. 03:39:36

2 Objection to form. Leading. Beyond 03:39:39

3 the scope. 03:39:40

4 A. Godoy does utilize tank mixes, yes. 03:39:43

5 Q. Okay. 03:39:48

6 Well, if we take a look at Godoy, 03:39:48

7 which is Exhibit -- what is it? I think it's 03:39:51

8 Exhibit 1005; is that correct? 03:39:57

9 (Previously marked Exhibit 1005, Certified
10 Translation of Godoy "Efficiency of multisite
11 fungicides in controlling Asian soybean rust,
12 Phakopsora pachyrhizi, in the 2015/16 harvest:
13 Summarized results of cooperative trials", Londrina,
14 PR August 2016 (Embrapa Soja, Circular Técnica,
15 121), was presented.) 03:39:59

16 A. Okay. I'm there. 03:40:20

17 Q. You're there. 03:40:23

18 So what is it in Godoy that leads 03:40:23

19 you to the opinion that one of ordinary skill in the 03:40:30

20 art would read it as disclosing a tank mix? 03:40:32

21 MR. FELDSTEIN: Object to form. 03:40:35

22 Leading. Beyond the scope. 03:40:37

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1 Q. That was your testimony a minute ago; 03:40:41

2 right? 03:40:42

3 A. Correct. 03:40:42

4 MR. FELDSTEIN: Object to form. 03:40:43

5 Scope. Leading. 03:40:44

6 MR. CARSON: What is it based on? 03:40:45

7 MR. FELDSTEIN: Object to form. 03:40:46

8 Scope and leading. 03:40:47

9 MR. CARSON: What is it based on? 03:40:49

10 Object to form. 03:40:51

11 BY MR. CARSON: 03:40:51

12 Q. Go ahead. 03:40:51

13 A. The -- if you look at the tables that 03:40:52

14 are provided in Godoy, there's a Table 3, in 03:40:55

15 particular, that I'm looking at at the moment, and 03:41:01

16 you can actually see where these products are 03:41:05

17 applied in a tank mix. 03:41:11

18 If you look at, for example, 03:41:14

19 Treatment 17 in Table 3, you have azoxystrobin plus 03:41:24

20 benzovindiflupyr, and that's Elatus, then you have 03:41:30

21 mancozeb, which is Unizeb Gold, and they're applied 03:41:34

22 together as the treatment. 03:41:39

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1 Q. How do you know based on this table that 03:41:42
2 they're applied together? 03:41:44

3 MR. FELDSTEIN: Objection. Form. 03:41:46
4 Leading. Scope. 03:41:48

5 A. Within the context of looking at tables 03:41:49
6 like this over time, when I see a table that is like 03:41:54
7 this that has this kind of information provided, and 03:41:57
8 there's no indication that it's not a tank mix, this 03:42:01
9 is, in fact, a tank mix. 03:42:04

10 Q. Well, is there any significance to 03:42:06
11 the -- I'm looking at -- I guess it's Treatment 17, 03:42:09
12 or row -- 03:42:15

13 A. Treatment 17 is what I reference this 03:42:15
14 in. 03:42:18

15 Q. That's what you were referencing? 03:42:18

16 A. Yes. 03:42:20

17 Q. So row 17 or Treatment 17, there's a 03:42:20
18 plus sign between "azoxystrobin" and 03:42:24
19 "benzovindiflupyr," and then the word "and" between 03:42:28
20 "benzovindiflupyr" and "mancozeb." 03:42:33

21 Do you see that? 03:42:35

22 A. I do. 03:42:36

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1 Q. Do you have any -- would a person of 03:42:36
2 ordinary skill in the art have any understanding as 03:42:41
3 to what's meant by the "+" versus the "and" here in 03:42:42
4 this table? 03:42:47

5 MR. FELDSTEIN: Object to form. 03:42:48
6 Leading. And scope. 03:42:50

7 A. Within the context of the commercial 03:42:50
8 products that are given, you have Elatus, which 03:42:53
9 Elatus is azoxystrobin plus benzovindiflupyr, in one 03:42:57
10 product. And then you have Unizeb Gold, which is 03:43:02
11 mancozeb. 03:43:06

12 So that's where the plus comes in as 03:43:07
13 the two products are -- or the two fungicides -- the 03:43:08
14 two actives are in one product, which is Elatus. 03:43:13

15 Whereas the mancozeb is another 03:43:19
16 product, and then you utilize the "and" to indicate 03:43:21
17 that that's another product. 03:43:25

18 And then you read under that table, 03:43:26
19 and it tells you what those are. 03:43:28

20 Q. When you were referencing the commercial 03:43:29
21 products, that's in the third column here in 03:43:33
22 Table 3? 03:43:35

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A. That is correct.

2 MR. FELDSTEIN: Objection. Leading. 03:43:35

3 Beyond the scope. 03:43:37

4 Q. So if Godoy, in fact, was disclosing 03:43:39

5 sequential application, is there anything you would 03:43:44

```
6 expect to see in here that's not in here?                                03:43:47
```

7 MR. FELDSTEIN: Objection to form. 03:43:50

8 Leading. Beyond the scope. 03:43:52

9 A. If Godoy were to be saying that there's 03:43:53

10 some kind of a sequential application of these 03:43:59

```
11  products --                                03:44:01
```

12 Q. Mm-hmm. 03:44:01

13 A. -- then it would be within the materials 03:44:02

14 and methods you would actually be able to read the 03:44:04

15 document, and derive that from the materials and 03:44:07

```
16  methods. 03:44:09
```

17 There would be somewhere within here 03:44:10

18 it would be stated as to how that is done. 03:44:12

19 Q. That's not found in Godoy? 03:44:17

20 MR. FELDSTEIN: Objection to form. 03:44:21

```
21      Leading.  Scope.                                     03:44:23
```

22 A. That is not found within Godoy, and -- 03:44:24

1 **I'm sorry. Go ahead.** 03:44:29

2 Q. Then with respect to Tobler, the 03:44:30

3 question I had asked at the beginning was, for 03:44:49

4 purposes of your anticipation opinion, would it 03:44:51

5 matter whether or not Claim 1 of the '727 Patent was 03:44:56

6 read to be limited to a tank mix? 03:45:00

7 MR. FELDSTEIN: Object to form. 03:45:03

8 Leading. Beyond the scope. 03:45:05

9 **A. In respect to Tobler?** 03:45:06

10 Q. Yes. 03:45:10

11 **A. In respect to Tobler, a tank mix is** 03:45:11

12 **acceptable.** 03:45:16

13 Q. What is that based on? 03:45:18

14 MR. FELDSTEIN: Object to form. 03:45:21

15 Leading. Scope. 03:45:24

16 Q. I think Tobler is Exhibit 1006. 03:45:27

17 **A. Okay.** 03:45:29

18 Q. Do you have -- I'm sorry, do you have 03:46:05

19 Exhibit 1006? 03:46:06

20 **A. I do. It's in front of me right now.** 03:46:07

21 **There's 1006.** 03:46:10

22 **I was also looking at my declaration** 03:46:12

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1 at the same time. 03:46:13

2 Q. Okay. 03:46:13

3 So do you know whether Tobler 03:46:14

4 discloses the application of the compounds herein 03:46:17

```
5   via tank mix?                                03:46:21
```

6 MR. FELDSTEIN: Object to form. 03:46:23

7 Leading. Beyond the scope. 03:46:24

8 Q. Strike that. 03:46:41

9 Let me ask you this: 03:46:42

10 Let's take a look at, Dr. Brannen, 03:46:44

11 Exhibit 1006. 03:46:46

12 A. Okay. I'm looking at Exhibit 1006, yes. 03:46:47

13 Q. Tobler. Column 27. 03:46:49

14 A. Column 27. 03:46:56

15 Q. Toward the bottom. 03:46:58

A. Yes.

17 Q. Would the disclosure here, column 27, 03:47:09

18 lines 55 to 64, would that have any bearing on 03:47:16

19 whether one of ordinary skill in the art would read 03:47:22

20 Tobler as disclosing a tank mix? 03:47:24

21 MR. FELDSTEIN: Object to form. 03:47:27

```
22    Leading.  Scope.                                03:47:29
```

1 A. So as I read it, it says, "Throughout 03:47:31
2 this document, the expression 'composition' stands 03:47:36
3 for the various mixtures or combinations of 03:47:39
4 components (A) and (B), for example, in a single 03:47:43
5 'ready-mix' form, in a combined spray mixture 03:47:45
6 composed from separate formulations of a single 03:47:51
7 active ingredient components, such as a 'tank-mix,' 03:47:53
8 and in a combined use of the single active 03:47:57
9 ingredients when applied in a sequential manner, 03:48:00
10 i.e., one after the other with a reasonably short 03:48:04
11 period, such as a few hours or days. The order of 03:48:06
12 applying the components (A) and (B) is not essential 03:48:09
13 for working the present invention." (As read.) 03:48:11
14 So a tank mix is definitely included 03:48:13
15 in this. 03:48:16
16 MR. CARSON: Okay. I have no more 03:48:30
17 questions. Thank you, Dr. Brannen. 03:48:32
18 MR. FELDSTEIN: I just have a few 03:48:33
19 questions for you, Doctor. 03:48:34
20 RE-EXAMINATION 03:48:34
21 BY MR. FELDSTEIN: 03:48:34
22 Q. The testimony you just gave with respect 03:48:38

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1 to Godoy, Exhibit 1005, is that something you had 03:48:41
2 prepared with counsel prior to coming in to your 03:48:42
3 deposition today? 03:48:44

4 **A. No.** 03:48:45

5 Q. Your testimony with respect to Tobler, 03:48:46
6 Exhibit 1006, is that something you had prepared 03:48:48
7 with counsel before coming in here today? 03:48:51

8 **A. No.** 03:48:53

9 Q. And your testimony with respect to an 03:48:54
10 error in the declaration, was that something you had 03:48:56
11 prepared with counsel prior to coming in today? 03:48:59

12 **A. It's something I wanted to disclose, so** 03:49:01
13 **yes.** 03:49:04

14 Q. So none of the testimony you gave on 03:49:05
15 Godoy, Exhibit 1005, was prepared with counsel prior 03:49:09
16 to coming into this room today? 03:49:12

17 MR. CARSON: Objection. Asked and 03:49:13
18 answered. 03:49:16

19 Q. Is that correct? 03:49:16

20 **A. That's correct.** 03:49:16

21 MR. FELDSTEIN: Okay. No questions 03:49:17
22 for you, Doctor. Thank you for your time. 03:49:18

196

1 Off the record. 03:49:21

2 THE VIDEOGRAPHER: This concludes 03:49:21

3 today's deposition. The date is September 28, 2023. 03:49:23

4 Time is 3:50 p.m. We are now off the record. 03:49:26

5 (CONCLUDED, 3:50 p.m.) 03:49:32

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ACKNOWLEDGMENT OF DEPONENT

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I, PHILLIP BRANNEN, PhD, do hereby
acknowledge that I have read and examined the
foregoing testimony, and the same is a true, correct
and complete transcription of the testimony given by
me and any corrections appear on the attached Errata
sheet signed by me.

(DATE)

(SIGNATURE)

1 CERTIFICATE OF COURT REPORTER

2 I, Marjorie Peters, Fellow of the Academy of
3 Reporting, Registered Merit Reporter, Certified
4 Realtime Reporter, Realtime Systems Administrator,
5 and Notary Public in the District of Columbia,
6 before whom the foregoing deposition was taken, do
7 hereby certify that the witness was placed under
8 oath according to the law; that the foregoing
9 transcript is a true and correct record of the
10 testimony given; that said testimony was taken by me
11 stenographically and thereafter reduced to
12 typewriting under my direction, and that I am
13 neither counsel for, related to, nor employed by any
14 of the parties to this case and have no interest,
15 financial or otherwise, in its outcome.

16 I further certify that signature was
17 not waived by the witness.

18 IN WITNESS WHEREOF, I have hereunto set my
19 hand this day of , 2023.

20

21

22 
Marjorie Peters, FAPR, RMR, CRR, RSA
My commission expires October 31, 2024.

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