

EXHIBIT 4

1 IN THE CIRCUIT COURT OF THE CITY OF ST. LOUIS
2 STATE OF MISSOURI

3 -----X
4 WALTER WINSTON et al., :
5 Plaintiffs :
6 vs : Case No.
7 MONSANTO COMPANY, : 1822-CC00515
8 Defendant :

9 -----X
10 TIMOTHY KANE et al., :
11 Plaintiffs :
12 vs : Case No.
13 MONSANTO COMPANY, : 1622-CC10172
14 Defendant :

15 -----X

16
17 IN THE CIRCUIT COURT OF ST. LOUIS COUNTY
18 STATE OF MISSOURI

19 -----X
20 BURRELL LAMB et al., :
21 Plaintiffs :
22 vs : Case No.
23 MONSANTO COMPANY, : 17SL-CC03681
24 Defendant :

-----X

25 Videotaped deposition of
26 CHRISTOPHER J. PORTIER, Ph.D.

27
28 LOCATION: RADISSON BLU HOTEL AMSTERDAM AIRPORT
29 Boeing Ave. 2, 1119 PB Schiphol-Rijk
30 The Netherlands
31 DATE/TIME: Wednesday, June 5, 2019 / 9:13 a.m.
32 REPORTER: Lisa V. Feissner, RDR, CRR

1 A P P E A R A N C E S:

2 ON BEHALF OF PLAINTIFFS:

3 ROBIN L. GREENWALD, ESQUIRE

4 WEITZ & LUXENBERG

5 700 Broadway

6 New York, New York 10003

7 212-558-5500

8 rgreenwald@weitzlux.com

9 and

10 MATTHEW E. LUNDY, ESQUIRE

11 LUNDY, LUNDY, SOILEAU & SOUTH, LLP

12 501 Broad Street

13 Lake Charles, Louisiana 70601

14 337-439-0707

15 mlundy@lundylawllp.com

16

17

18

19

20

21

22

23

24

1 A P P E A R A N C E S (Continued)

2

3 ON BEHALF OF DEFENDANT MONSANTO CO.:

4 BRIAN L. STEKLOFF, ESQUIRE

5 CALI COPE-KASTEN, ESQUIRE

6 WILKINSON WALSH & ESKOVITZ

7 2001 M Street, NW, 10th Floor

8 Washington, D.C. 20036

9 202-847-4000

10 bstekloff@wilkinsonwalsh.com

11 ccope-kasten@wilkinsonwalsh.com

12

13 A L S O P R E S E N T:

14 THOMAS K. FEISSNER, CLVS, Videographer

15

16

17

18

19

20

21

22

23

24

1 trivial.

2 Q. And I would need to have your Excel
3 sheets to be able to do that; is that right?

4 A. No. No.

5 Q. What would I need to be able to do
6 it?

7 A. Just what's in the expert report.
8 The number of animals with the tumor, the
9 number of animals that were examined, and the
10 doses used. Given that information, you can
11 replicate everything I did.

12 Q. Okay. But you don't know if what
13 you actually did at the time in the computer
14 program itself was saved? Understanding that
15 the spreadsheets were saved and that the final
16 output number was saved.

17 A. Certainly they have undergone some
18 changes over time since that expert report. As
19 I pointed out, I found some minor errors in
20 some of the counts. We've -- I've added data
21 because it's turned out to be significant, and
22 I've added it to the -- so it's changed over
23 time.

24 I certainly don't have the original

1 set of programs that gave me the expert report,
2 but I have something very close to it.

3 Q. All right. Shifting topics. I
4 actually want to talk to you about the Leon
5 paper. You're familiar with that paper, the
6 meta-analysis that came out recently?

7 A. Meta or pooled?

8 Q. You'll correct me if I'm wrong. I
9 thought it was meta. But maybe it's pooled.

10 A. This is the European cohorts with
11 the AHS?

12 Q. Yeah. I think it's pooled. Yep.

13 A. It's pooled.

14 Q. But you're familiar with it?

15 A. Yes, I am.

16 MR. STEKLOFF: So I'm going to mark
17 this as Exhibit 2.

18 (Exhibit Portier-2 marked for
19 identification and attached to the
20 transcript.)

21 MR. STEKLOFF: Do you want a copy,
22 Robin?

23 MS. GREENWALD: I do, if you don't
24 mind.

1 MR. STEKLOFF: Of course. We have
2 lots of copies. We don't help the trees
3 in this litigation.

4 MS. GREENWALD: I know. At least
5 you did it two-sided. I appreciate
6 that.

7 MR. STEKLOFF: The one time -- if
8 we didn't print everything, then, you
9 know, we would be criticized as well.

10 BY MR. STEKLOFF:

11 Q. Dr. Portier, you've reviewed this
12 paper before?

13 A. Yes, I have.

14 Q. Okay.

15 A. Well, I've read it.

16 Q. Read it. Okay. Do you have any
17 opinions about the quality of the paper?

18 MS. GREENWALD: Objection, form.

19 A. As a paper, it's fine. It's a
20 well-written piece of work.

21 Q. What about the methodology, do you
22 have any criticisms of the methodology?

23 A. This is three different cohorts,
24 and the three different cohorts all have three

1 different methodologies associated with them.

2 My concerns about the Agricultural
3 Health Study have already been made quite
4 clear. And that still holds here because
5 they're still using the imputed exposures and
6 all the other things that I have said -- have
7 concerns about the Agricultural Health Study.

8 The AGRICOH study, I think that's
9 the French study -- I have to look at it. Oh,
10 no, that's the consortium itself. The French
11 study is AGRICAN?

12 Q. AGRICAN is the French study.

13 A. Yeah.

14 Q. CNAP is the Norwegian study.

15 A. The AGRICAN study is small relative
16 to the other two in terms of person-years at
17 risk. It skips over dates. You know, it's got
18 a little bit of data here and a little bit of
19 data here, and it really probably didn't play
20 much of a role in their overall conclusions
21 here because of its size. But it certainly has
22 some limitations by itself.

23 The biggest piece of this is the
24 CNAP study, which is the Norwegian cohort

1 study, and I did spend some time looking into
2 the methodology used in the Norwegian study.
3 There's a number of publications on the
4 exposure methods they've used and other things.
5 I think we've included all of that in my
6 reliance list.

7 It's not an exposure study. Let's
8 be clear what the Norwegian study is. The
9 Norwegian study is a study of what farmers
10 grow. And the actual relationship they get
11 from that is a relationship to what they grow
12 and cancer.

13 The fact that the "what they grow,"
14 they then associate it with this official list
15 of which pesticides can be used on which crops
16 in Norway, is the way they create an exposure
17 metric. And that has some concern for exposure
18 misclassification, potentially differential,
19 but I can't tell you either way. But it
20 clearly raises concerns about exposure
21 misclassification in this study because just
22 because a farmer grows a specific crop doesn't
23 mean they use that -- a specific pesticide
24 that's allowed for that crop. And so that

1 could create some problems in that dataset.

2 Pulling them all together was a
3 massive amount of work, and I certainly salute
4 them for doing that. I look forward to getting
5 more detail into how they did it and pulled it
6 together. It's not all in here. But that's
7 most I have to say about it.

8 Q. Okay. Within the world of
9 epidemiology, have you ever heard the phrase,
10 garbage in, garbage out?

11 A. That's used in everything. GIGO.
12 That's quite common. I do not believe this is
13 a garbage in, garbage out paper.

14 Q. Okay.

15 A. The Norwegian cohort has to be
16 looked at more carefully before you can say
17 anything about how much influence this paper
18 should have on your understanding of the
19 epidemiology.

20 I'm satisfied enough with the paper
21 that it's as good as the cohort -- the case
22 control studies. It probably brings in about
23 the same level of information. It's not like
24 the last version of the Agricultural Health

1 Study, which I'm not sure was of any use. But
2 it is -- it does bring some weight.

3 Q. Does it change your -- I know
4 you've been asked ad nauseam about your views
5 of epidemiology. Does this paper in any way
6 change your opinions about the epidemiology
7 relating to glyphosate?

8 A. I would still call the
9 epidemiology -- an association exists.
10 Causality is credible, but I can't rule out
11 bias, confounding, or other issues that keep me
12 from going full causation with the epidemiology
13 data.

14 Q. Does this paper make it, based
15 on -- and we can look in a moment at the hazard
16 ratio for glyphosate and NHL, but does this
17 paper, in your opinion, draw more into question
18 whether there's an association between
19 glyphosate and NHL?

20 MS. GREENWALD: Objection, form.

21 A. No.

22 Q. Why not?

23 A. Partially, because I haven't seen
24 it -- so there's NHL, and then there's DBL --

1 Q. DOBCL [sic].

2 A. DOBCL [sic]. I have some questions
3 about this paper with regard to that. DLBCL --
4 I can never remember those letters -- is the
5 substantial portion of NHL. It's the biggest
6 piece of NHL.

7 I find the numbers unusual, that
8 they see no increased relative risk with NHL
9 but they see a significant increased relative
10 risk with DLBCL. It's a concern I don't
11 under -- it's something I don't understand from
12 the paper. And that's something I would like
13 to know more about.

14 So it doesn't subtract; it adds
15 maybe some power to the statement. But it
16 certainly doesn't change my mind at all about
17 the epidemiology evidence.

18 Q. If a patient had a non-Hodgkin's
19 lymphoma other than DLBCL, would you -- with
20 respect to -- I know you're not offering
21 specific causation opinions, but with respect
22 to non-DLBCL cases of non-Hodgkin's lymphoma,
23 would it -- does this paper cause you to
24 further question whether there's an association

1 between those forms of NHL and glyphosate?

2 MS. GREENWALD: Objection to form.

3 A. So to be fair, I always question
4 whether there's an association. Every time
5 there's a new paper coming out, that's the only
6 way to approach it in an objective fashion.

7 My conclusion from seeing this
8 paper is that it doesn't change my opinion
9 about NHL, nor does it change my opinion about
10 DLBCL in terms of whether I believe that's
11 stronger than NHL as a total category or not.
12 I think it's still exactly where it was before.
13 There's clearly an association; it's clearly
14 credibly causal.

15 But there's not enough evidence
16 here for me to ignore all the animal data and
17 everything else, just ignore it and say, from
18 the epidemiology, I believe this clearly causes
19 NHL. I'm not there with the epi, and this
20 hasn't changed that. But it certainly hasn't
21 moved me to the point where I'm saying, I think
22 the epi is inadequate, or, I just don't see
23 anything there. I'm certainly not there. I'm
24 clearly where I've stated it all along, there

1 is clearly an association.

2 Q. So you've testified previously that
3 the epidemiology alone is insufficient for you
4 to say there's association between NHL and
5 glyphosate. Is that fair?

6 A. No, that's not fair. It's not
7 enough to say there is a causal association
8 between glyphosate and NHL all on its own.

9 Q. Thank you for that clarification.
10 This paper, one way or the other,
11 doesn't change your view that the epidemiology
12 alone is not enough to say that there is a
13 causal association between NHL and glyphosate?

14 MS. GREENWALD: Objection, form.

15 Q. I can ask it again. How about I
16 ask a different question.

17 A. Okay.

18 Q. The video will demonstrate that
19 that question was a poor one.

20 Your opinion that the epidemiology
21 alone is not enough to say there is a causal
22 association between NHL and glyphosate is not
23 changed by the Leon paper. Is that fair?

24 A. That is correct. I have to find my

1 opinion in there. It's -- it was hard to find
2 it.

3 Q. That's fair enough. I could have
4 tried it a third -- I don't mind trying it
5 three times. It's helpful for you to have the
6 realtime.

7 Now, with respect to this Leon
8 paper, which we're almost done with -- and I
9 know you have criticisms of the Andreotti paper
10 that you just mentioned, but did you assess how
11 the Leon authors excluded some of the AHS
12 patients from this paper?

13 A. Just in what they've written.

14 Q. Right. And so if you turn to page
15 12 of the paper.

16 A. Okay.

17 Q. Sorry. If you look at the bottom
18 column on the left, continuing up to the top of
19 the right, I don't need to read all of it, but
20 do you recall reviewing that discussion of
21 excluding certain patients that were studied in
22 the AHS publication, the 2000 -- we're talking
23 about the latter, the Andreotti -- AHS
24 publication?

1 A. Yes, I remember reading this.

2 Q. And do you -- I know it would be
3 some speculation, but do you agree that had all
4 of the patients from the AHS publication been
5 included in the Leon paper, the DLBCL and,
6 frankly, the NHL results may have been
7 different?

8 MS. GREENWALD: Objection, form.

9 A. No basis for me to draw that
10 conclusion.

11 Q. You just don't know one way or the
12 other?

13 A. Don't know one way or the other.

14 Q. Okay. It's certainly possible that
15 the DLBCL results would have either been lower
16 or not statistically significant had all of the
17 AHS patients been included?

18 MS. GREENWALD: Objection, form.

19 A. Or higher'd [sic] or unchanged --
20 or higher or unchanged. It could be anything.

21 Q. Now, your -- when I asked you for
22 criticisms of the methodology in Leon, you --
23 understanding you don't think this is garbage
24 in, garbage out -- talked about a few things.

1 One was that the three studies that were pooled
2 together here had different methodologies. Is
3 that a limitation of this paper?

4 A. Yes.

5 Q. Is that -- would that be a
6 limitation of any meta -- pooled analysis where
7 studies with different methodologies are pooled
8 together?

9 A. Usually you would be concerned
10 about it. You would spend time thinking about
11 the implications of it.

12 Q. And also, if, you know, any other
13 study, say Zhang, that included AHS data, at
14 least in part, your concerns about the
15 underlying flaws of AHS would apply equally
16 there. Is that fair?

17 A. Zhang's a special case. It's a
18 very good question, and it's one I'm surprised
19 I wasn't asked by you guys before. But Zhang
20 is a very special case.

21 Q. Just -- are we talking about Chang
22 or Zhang?

23 A. Zhang. It's Zhang. I always say
24 "chaing."

1 They used, if I remember correctly,
2 20-year lag data. And by using 20-year lag
3 data, the problem that occurs with the making
4 up of the doses, the exposures, isn't a
5 problem, okay? So it's an interesting
6 quandary. They used the only part of the data
7 that is extraordinarily clear in terms of how
8 you got it because that's basically the
9 original exposure information they asked
10 people, and that's all they're using, and just
11 looking into the future. And that's a common
12 thing in epidemiology.

13 Now, what that doesn't give you is
14 all the other cases that occurred later on that
15 might be very important in this. It requires
16 the concept that it's at least 20 years before
17 you see the cancers, and any other cancer that
18 occurs in less than 20 years of exposure is not
19 due to glyphosate. That's an assumption of
20 that analysis. So that would be a criticism.

21 But the other criticism I have from
22 the Andreotti study about the exposures and
23 about other issues like that don't apply in
24 that case. Because they're the original

1 exposures, you're not -- you don't have to
2 guess at what people were exposed to; you're
3 using what they told you from the original
4 questionnaire.

5 Q. And so you don't have any -- your
6 misclassification criticism of AHS isn't based
7 on what people reported when they originally
8 filled out the questionnaire. Is that --

9 A. That's -- I mean, there's still
10 some possibility of misclassification there,
11 but it's not going to be differential. The
12 problem is -- with the permuted data is that it
13 appears to be differential because when they
14 test it against the 20 percent holdouts where
15 they went back and tried to predict, they
16 predicted a whole bunch of people who said they
17 were exposed as being non-exposed. So that
18 moves people from the exposed category to the
19 non-exposed category.

20 And if that includes people who
21 have NHL in making that move, you've now caused
22 a differential exposure misclassification and
23 you've pushed down the relative risk. And
24 that's a serious concern with that study, and

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

C E R T I F I C A T E

I, Lisa V. Feissner, RDR, CRR, CLR,
Notary Public, certify that the foregoing is a
true and accurate transcript of the deposition
of said witness, who was first duly sworn by me
pursuant to stipulation of counsel on the date
and place hereinbefore set forth.

I further certify that the foregoing
transcript is a true and correct record of the
proceedings; that reading and signing was
requested; that I am neither attorney nor
counsel for, nor related to or employed by, any
of the parties to the action in which this
deposition was taken; and that I have no
interest, financial or otherwise, in this case.

IN WITNESS WHEREOF, I have hereunto set
my hand this 13th day of June, 2019.

Lisa V. Feissner, RDR, CRR, CLR

(The foregoing certification of this
transcript does not apply to any reproduction
of the same by any means, unless under the
direct control and/or supervision of the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

INSTRUCTIONS TO WITNESS

Please read your deposition over carefully and make any necessary corrections. You should state the reason in the appropriate column on the errata sheet for any change made.

After doing so, please sign the errata sheet and date it.

You are signing it subject to the changes you have noted on the errata sheet, which will be attached to your deposition. You must sign in the space provided. The witness need not be a notary public. Any competent adult may witness your signature.

It is imperative that you return the original errata sheet to the deposing attorney within thirty (30) days of receipt of the deposition transcript by you. If you fail to do so, the deposition may be deemed to be accurate and may be used in court.

1 WITNESS NAME: CHRISTOPHER J. PORTIER, Ph.D.
DEPOSITION DATE: JUNE 5, 2019

2

3

ERRATA

4

PAGE LINE CHANGE REASON

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

ACKNOWLEDGMENT OF DEPONENT

I hereby acknowledge that I have read the foregoing deposition dated JUNE 5, 2019, and that the same is a true and correct transcription of the answers given by me to the questions propounded, except for the changes, if any, noted on the attached Errata.

SIGNATURE:

CHRISTOPHER J. PORTIER, Ph.D.

DATE:

WITNESSED BY:

DATE:

1	LAWYER'S NOTES		
2	PAGE	LINE	
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
9	_____	_____	_____
10	_____	_____	_____
11	_____	_____	_____
12	_____	_____	_____
13	_____	_____	_____
14	_____	_____	_____
15	_____	_____	_____
16	_____	_____	_____
17	_____	_____	_____
18	_____	_____	_____
19	_____	_____	_____
20	_____	_____	_____
21	_____	_____	_____
22	_____	_____	_____
23	_____	_____	_____
24	_____	_____	_____