

# EXHIBIT 1

Confidential - Donna Farmer, Ph.D.

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SUPERIOR COURT OF THE STATE OF CALIFORNIA  
FOR THE COUNTY OF ALAMEDA

COORDINATION PROCEEDING )  
SPECIAL TITLE (Rule 3.550) )  
ROUNDUP PRODUCTS CASES )  
\_\_\_\_\_ ) JCCP NO. 4953

THIS DOCUMENT RELATES TO: )  
ALL ACTIONS )  
\_\_\_\_\_ )

VIDEO DEPOSITION OF DONNA FARMER, PhD  
January 24, 2019  
9:08 a.m.

\*CONFIDENTIAL\*

Reporter: Jude Arndt, CSR, RPR  
CSR No. 084-004847

1           A.     If you look at the dermal study, the dose  
2     that was put on was 1,000 milligrams per kilogram, and  
3     you would have someone who would be exposed to, say,  
4     .004, so you're looking at, what, several thousand-fold  
5     higher in the animal study than you would have a human  
6     being exposed to.

7           Q.     (By Mr. Hall) Okay. Thousands of times  
8     higher?

9           A.     Yes. Uh-huh.

10          Q.     All right. Now, did -- you mentioned that  
11     in the testing of glyphosate -- the animal testing of  
12     glyphosate -- Monsanto did the two-year studies that  
13     were aimed at testing to see if the substance caused  
14     cancer in the animals. Do you recall that?

15          A.     Yes.

16          Q.     Did Monsanto do similar two-year studies  
17     of the formulated product?

18          A.     No.

19          Q.     Why not?

20          A.     I think there's two things to address  
21     that. One is the existing data didn't give us any  
22     indication of any concern. And the second one is is  
23     that conducting that study would be difficult in  
24     conducting it and in interpreting the results from that

1 study.

2 Q. Let's focus on those two reasons. You  
3 said first, the existing test -- testing that Monsanto  
4 had done -- well, let me ask another question first.  
5 Does the EPA and other regulators around the world  
6 require two-year testing, two-year animal testing of  
7 the formulated product?

8 A. No.

9 Q. Now, you mentioned that you saw two  
10 reasons why Monsanto did not do that test, which you've  
11 told us is not required. The first one is that other  
12 testing gave no indication that a two-year test would  
13 be called for. What do you mean by that? Tell us a  
14 little bit more about that.

15 A. As we talked about, we had the chronic  
16 study with glyphosate, where we saw no evidence of  
17 carcinogenicity.

18 Q. When you say the chronic study, what study  
19 are you referring to?

20 A. Chronic -- sorry. Chronic in -- study in  
21 mice, long-term studies in mice and long-term studies  
22 in rats.

23 Q. Those are the two-year studies?

24 A. Yes.

1 Q. Okay.

2 A. We saw no evidence of carcinogenicity in  
3 those studies.

4 Q. Of glyphosate itself?

5 A. Of glyphosate itself.

6 Q. Okay.

7 A. We then look at the genotox data. In all  
8 of the studies that we had done with glyphosate, there  
9 was no evidence of genotoxicity.

10 Q. You mentioned that there was a second  
11 reason why Monsanto did not do these two-year animal  
12 studies of the formulated product. What is that second  
13 reason?

14 A. It's the difficulty in conduct and  
15 interpretation of the study. As we talked about with  
16 the surfactants, when we did the surfactants we saw no  
17 evidence of genotoxicity in any of the studies with any  
18 of the surfactants, and when we did the animal studies,  
19 the primary finding was gastrointestinal irritation.

20 So whether we gave it to them for 30 days  
21 or we gave it to them for 90 days, all we saw was  
22 gastrointestinal irritation, irritation to their GI  
23 system. We didn't see what we talked about as a target  
24 organ.

1                   So if we were to do a test of the  
2   formulated product -- if we -- the EPA wants us to get  
3   those doses really, really high to elicit that  
4   response, the surfactant would be so disruptive to the  
5   animal's GI system that they may not eat the food or  
6   they may just be really sick.

7           Q.       When you say the surfactant is disruptive  
8   to the animal's GI system, what do you mean? Tell us a  
9   little more about what that actually means as far as  
10  the animal ingesting surfactant or the formulated  
11  product that includes surfactant.

12           A.       Surfactants are named for surface-acting  
13  substances, because they act on the surface of cells,  
14  and unlike when you have surfactants in body soap, you  
15  have a tough layer of skin that helps protect your  
16  other cells from that.

17                   Your GI system doesn't have that  
18  protective layer, so those surfactants are very  
19  disruptive to those really delicate cells that are in  
20  the lining of the GI system. So again, to get a dose  
21  high enough to meet that -- what they call the maximum  
22  tolerated dose with a surfactant, we would be really  
23  pushing GI irritation significantly on these animals.

24           Q.       Well, why is that a factor or why is that

1 a potential issue in an animal test -- that is, if the  
2 animal has significant digestive irritation or  
3 problems?

4 A. Because they're so sick that it  
5 complicates the interpretation of the results of the  
6 study. So we don't know if the findings that we're  
7 seeing at the end of the study are due to the test  
8 material directly or due to that the animals are so  
9 sick during the study.

10 Q. All right. So you've said that Monsanto  
11 did not do long-term animal studies of the formulated  
12 product. Are there any long-term studies of the  
13 formulated product in existence?

14 A. Yes.

15 Q. What are those?

16 A. Epidemiology studies.

17 Q. And epidemiology studies are long-term  
18 studies of the use of formulated products by people?

19 A. That's -- I'm not an epidemiologist, but  
20 that's my understanding, is that they're looking at  
21 people who were using products and following them  
22 long-term.

23 Q. Let me show you a document that the  
24 plaintiff's lawyer asked you about. It's Deposition