IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF IDAHO

	)	
TIMM ADAMS, et al,	)	Civ. No. 03-0049-E-BLW
	)	
Plaintiffs,	)	
	)	
v.	)	MEMORANDUM DECISION
	)	AND ORDER RE: EXPERT
	)	TESTIMONY OF HUFFAKER,
UNITED STATES OF AMERICA,	)	GOODWIN AND SHIELDS
	)	
	)	
Defendant.	)	
_____	)	

INTRODUCTION

The Court has before it two motions to exclude expert testimony, both filed

by Dupont. The motions are fully briefed, and at issue. For the reasons expressed

below, the Court will deny both motions.

ANALYSIS

Motion to Exclude Huffaker & Agri-Analytics Inc.

DuPont has moved to exclude the testimony of Bruce Huffaker and Dr.

Barry Goodwin (of Agri-Analytics, Inc) on the ground that these two plaintiffs'

experts are merely repeating and endorsing the testimony of plaintiffs' expert

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Cornelius Hofman. This duplicative testimony should be excluded, DuPont

argues, because it will confuse the jury and waste the Court's time.

A key issue in this case will be the calculation of economic loss associated

with agricultural production. Plaintiffs' principal expert on this issue is Cornelius

Hofman. Plaintiffs are not entitled, in their case-in-chief, to put on additional

witnesses who will merely repeat Hofman's testimony and approve it, although

plaintiffs are entitled in their rebuttal case to put on experts to rebut the testimony

of DuPont's experts who challenged Hofman.

Plaintiffs claim that Huffaker and Goodwin will not parrot Hofman, but will

instead be called to fill gaps in Hofman's expertise. Plaintiffs explain that

"Hofman is well qualified to perform the economic analysis, but does not have the

level of experience and training in certain aspects of agricultural pricing and

production that Mr. Huffaker and Dr. Goodwin possess." *See Plaintiffs' Brief* at p.

3. Plaintiffs will fill in those gaps with Huffaker and Goodwin. Huffaker will

testify as a potato market expert on the pricing of potatoes in Idaho. Goodwin will

testify as an agricultural economist on the proper methodology for calculating

economic loss in agricultural production.

In these roles, Huffaker and Goodwin are not just duplicating Hofman's

testimony, but are using their agricultural expertise to shore up Hofman's opinion.

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In a case where agricultural expertise will play such a crucial role in damages, plaintiffs are entitled in their case-in-chief to address the lack of agricultural credentials of their principal damage expert by proffering the testimony of experts who do have those credentials.

This motion will therefore be denied.

Motion to Exclude Testimony of Dr. Walter Shields

Dr. Walter J. Shields is a soil scientist who is an expert in the release, transport, and fate of chemicals into the environment. Hired by the plaintiffs, he produced a report examining the transport and fate of Oust after its application by the BLM in 1999 and 2000.

Dr. Shield's reports lists his central opinions as follows: (1) Dust contaminated with Oust was carried by the wind to plaintiffs' farms, (2) A model created for this litigation predicts the concentration of Oust in a dust cloud from the High Point Burn Area; (3) Deposits of wind-blown Oust are so variable, and toxic amounts so undetectably small, that random soil samples from a grower's field may underestimate the true contamination, (4) Crop damage symptoms are a more reliable indicator of Oust deposits on growers' fields than modeling or soil sampling, and (5) Sources other than the BLM applications would not have caused the observed widespread Oust deposits. *See Shields Report* at p. 1.

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DuPont has moved to exclude Dr. Shield's entire testimony or, in the alternative, to restrict him "to the one issue his report says he is intended to address: whether Oust can be deposited at the downwind farms." *See DuPont's Brief* at p. 21. The briefing by both sides focuses entirely on the second of the five opinions listed above – that is, the model that predicts the Oust concentration in a wind-blown dust cloud from the High Point Burn Area.

Because DuPont is not challenging Dr. Shield's qualifications, and does not dispute his four opinions that have nothing to do with his model, the Court denies DuPont's initial request to exclude all of his testimony. The focus of all the argument is on Dr. Shield's model, and the Court will therefore confine its decision to resolving the admissibility of the model.

The model examined an area known as the High Point Burn Area where the BLM applied Oust. On the day of application, the concentration of Oust in the upper millimeter of soil would have been over 4 million ppt, according to Dr. Shields. As time passed, surface concentrations would decrease "because some [Oust] would degrade with time and some would leach down into the soil . . . ." *See Report* at p. 7. After the soil surface dried out, "a portion of the [Oust] would have been brought back to the soil surface by the evaporating water, a well-established process known as capillary rise, or wicking." *Id.*

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Soil samples were taken from the High Point area in July, 2001, 274 days after the BLM's application. *See Report Exhibit F* at p. F-8, n. 11. They showed an average Oust concentration of 527 ppt. *See Report* at p. 7.

In those 274 days, did Oust degrade from 4 million ppt to 527 ppt? Dr. Shields says no, that degradation only explained a portion of the "missing" Oust, and that the rest must have been blown away by the wind. He then uses his model to compute (1) the amount of Oust degraded and (2) the amount blown away.

DuPont objects to the model used by Dr. Shields. Specifically, DuPont claims that Dr. Shields underestimated the amount of Oust degraded and hence overestimated the amount blown away. To understand, DuPont's objections, one must first understand Dr. Shield's computations.

Dr. Shields estimates that given degradation rates for Oust, *see Report* at Exhibit E, the soil samples should have shown concentrations of Oust in the High Point Burn Area of 22,000 ppt. But the samples showed only 527 ppt, about 3% of the 22,000 ppt that should have been there. What happened to the other 97% of the Oust? Dr. Shields concluded that it was blown away by the wind.

He then proceeds to calculate the concentration of Oust in the wind-blown soil. In his initial report, he assumes that the erodible soil layer for the High Point Burn Area is the upper .62 cm of soil, and makes the further conservative

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assumption that the Oust may have been "uniformly mixed in the upper 10 cm of soil." *See Report* at p. 8.

He then uses a "mass balance methodology," which he explains as follows: "By mass balance, the concentration of the top layer eroded by wind must equal the mass fraction of Oust loss (97.6%) divided by the ratio of the depth of the eroded layer (0.62 cm) to the mixing depth (10 cm)." *See Report*, *Exhibit F,* at p. F-8. This calculation yields a result of 15.7, which Dr. Shields explains is a "wicking factor" or "Oust multiplier." *See Shields' Deposition* at pp. 623-25. By multiplying the wicking factor (15.7) by the concentration found in the soil sample (527 ppt), Dr. Shields arrives at the concentration of Oust – 8,300 ppt – that would be contained in the wind-blown dust from the High Point Burn Area. *See Report* at p. 8.

Dr. Shields later clarified his assumptions in his deposition. He testified that the leaching depth of 10 cm was the maximum depth – a "worst case assumption" – based on the moisture calculations of Dr. Qualls, the Idaho State Climatologist. *See Dr. Shields' 2008 Deposition* at p. 193; *2009 Deposition* at pp. 492. Dr. Shields testified that "capillary action could very well have been from the upper two centimeters." *See Dr. Shields' 2008 Deposition* at p. 199.

Later, Dr. Stephen Cullen issued a report concluding that organic material on

the surface would have kept Oust from migrating more than 2 cm deep, so that

most stayed near the surface. After reviewing this report, Dr. Shields testified that

Dr. Cullen's work confirmed the lower end of his range of migration, and was "a

more accurate representation of the leaching depth than the worst case 10 cm that

Qualls and I used initially." *See Dr. Shields' 2009 Deposition* at p. 493. Dr.

Shields now assumes that the Oust migrated no further down than 2 cm and that

the erodible layer was in a range between .62 cm and 1.5 cm. *See Dr. Shields'*

2009 Deposition at p. 544.

DuPont argues that Dr. Shield's "abandoned" his initial theory, and

improperly colluded with Dr. Cullen to rig the model to reach a pre-determined

result. Yet Dr. Shields has all along testified that the 10 cm leaching depth was a

worst case scenario and that the leaching depth could just as well be 2 cm. Dr.

Cullen's work simply confirmed the accuracy of the more shallow depth within the

range of potential leaching.

While DuPont argues that Dr. Shields has abandoned his wicking factor, the

Court disagrees. Dr. Cullen's work has made the wicking factor less relevant

because more of the Oust will remain in the erodible layer, but Dr. Shields has not

testified that he has abandoned the factor altogether.

The Court will note that the description of the wicking factor in the original

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report made it appear that Dr. Shields was working backward to obtain the 15.7 wicking factor result, a somewhat odd method given that the figure could have been independently verified at the High Point Burn Area. Nevertheless, this appears to be a red herring now, since Dr. Shields' adoption of Dr. Cullen's work has made the wicking factor much less important to the model.

DuPont expressed concern with Dr. Shields' use of his model to estimate Oust concentrations on ten sites on plaintiffs' farms. *See Table F-4.* Indeed, so did Dr. Shields himself: "[M]odeling results are uncertain and cannot be used to reconstruct what the [Oust] concentrations were on any given farm." *See Report* at p. 1. Given Dr. Shields' own lack of faith in Table F-4, and statements in plaintiffs' briefing, it appears plaintiffs will not be offering testimony regarding the model's results on particular farms. Thus, no order of exclusion on the opinions contained in Table F-4 is necessary at this time.

DuPont argues that Dr. Shields erred in calculating Oust's half-life because he took a 160 day half-life estimate from a study by Anderson & Dulka and added 118 days to it for frozen soil. DuPont argues that the 160 day estimate already contained time for frozen soil, so the additional days were improperly added, and resulted in degradation being underestimated and the Oust concentration in the High Point dust cloud being overestimated.

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Dr. Shields, however, did not rely entirely on the Anderson & Dulka study. While citing it, he cited other studies and made it clear that he was calculating the half-life based on the unique qualities of soil in southern Idaho, a region not examined in the Anderson & Dulka study. *See Report Exhibit E* at p. E-4. The Court cannot find that Dr Shields' half-life computation warrants exclusion of his theory.

DuPont objects on the ground that Dr. Shields has allocated Oust onto particles so small (one micron or less) that they will remain airborne for years. In support of this, DuPont cites an article that the Court has no way of verifying as authoritative. The Court refuses to adopt the reasoning of such an article.

In conclusion, the Court will deny the motion to exclude Dr. Shields for the reasons expressed above.

ORDER

In accordance with the Memorandum Decision set forth above,

NOW THEREFORE IT IS HEREBY ORDERED, that the motion to exclude Huffaker and Agri-Analytics (docket no. 737) is DENIED.

IT IS FURTHER ORDERED, that the motion to exclude Dr. Walter J. Shields (docket no. 748) is DENIED.

DATED: **April 3, 2009**

Honorable B. Lynn Winmill
Chief U. S. District Judge