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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

3PP

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Use Data for Exposure Analysis of TPTH: Additional Information II

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This memo is to reflect changes resulting from our consultation on 8/11/98. The changes are as follows:

1. The farm sizes were recalculated based not on all states growing the respective crop, but only on those states where TPTH is used, and also including the top approximately 25 percent of farms, rather than only those above 500 or 1000 acres. The resulting averages are lower than the previous estimates.

2. The typical acres per day treated with ground boom by an individual grower of sugarbeets was raised to 150 acres, based chiefly on a revised estimate of boom size used.

3. The high end acres per day treated with ground boom by an individual grower for potatoes and sugarbeets was raised to 500 acres, also based on a revised estimate of boom size used.

4. The number of applications per year for sugarbeets was reduced from 7 to 3 to reflect the label limitations on annual total application. This is based on using the maximum rate per application each time. Because lower rates are sometimes used, the number of applications might be 4, but the total annual amount would be the same as if the maximum rate were used 3 times.

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5. The number of farms treated by commercial applicator for potatoes and sugarbeets was revised to conform to the revised farm acreages.

6. The application rates were changed to pounds ai /A for convenience in other calculations.

Table 1. Use parameters for exposure assessment of TPTH

PARAMETER	PECANS		POTATOES		SUGAR BEETS	
	Typical	High End	Typical	High End	Typical	High End
Farm Size (Acres) [1]	23	83	143	417	159	334
Acres treated per day [2], air blast, grower	40	50	NA	NA	NA	NA
comm. applic.	40	50	NA	NA	NA	NA
ground boom, grower	NA	NA	150	500	150	500
comm. applic.	NA	NA	150	500	150	500
aerial, [3] comm. applic.	?	?	1000	1200	1000	1200
No. of Applications per year to crop [4]	4.4	8-10	2.5	3	2.0	3
No. of applications per year by [4] grower	4.4	8-10	0	1	2.75	3
comm.app.	4.4	8-10	2.1	3	2.75	3
No. farms treated per year by comm. appl. [5]	1	1.25	40	19	27	22
Application Rate, all formulations (lb ai/A) [6]	.125-.250	.188-.375	.09-.125	.188	.125	.250

[1] Typical farm size is taken from 1992 US Ag Census as the average of all farms in the states using TPTH in the respective crop. For pecans, these are: AL, AR, FL, GA, LA, MS, OK, SC, TX. For potatoes: AL, CO, FL, ID, ME, MI, MN, MT, NE, ND, OR, PA, SD, TX, WA, WI. For sugarbeets: CO, ID, MI, MN, MT, NE, ND, OR. High end farm size is based on average of farms in the larger Ag Census size categories accounting for the upper 26-28 percent of the acreage of each crop in the respective states listed. Sizes, especially of the larger farms, may vary among states.

[2] Based on estimates from extension personnel in Georgia (largest usage state) for pecans, and a commercial applicator in North Dakota for potatoes and sugarbeets (major usage state), based on his own experience. See Table 2, geographic distribution of usage.

[3] Estimates for pecans from extension personnel were not obtained because such use is rare. If one uses high end tank and boom length values in the NG algorithm (see attachment), about 400 acres can

be covered in a 6-hour day. Most aerial applicators cannot work longer due to drift problems in the middle of the day.

For potatoes and sugarbeets, estimates were provided by a commercial applicator based on his own experience. It would appear that these sprays take all day to apply, or a value for more than one aircraft was given.

[4] Number of applications per season depends on weather. The typical values are taken from the Quantitative Usage Analysis (J. Faulkner, 4/29/98), covering a ten year span.

—For pecans, the typical number for Texas, Oklahoma and New Mexico is 1-1.6; for MS, 6.3, according to EPA estimates. As many as 10 applications can be made in a wet year, according to label limits and extension personnel. These would be in the southeast states.

—For potatoes in ND/MN, nearly all applications are by commercial applicator, most by air. The labeled maximum number of applications is 5 (not to exceed 12 oz. ai/year; 3 at 2 oz/A, 2 at 3 oz/A).

—For sugarbeets in ND/MN, the typical and high end values are taken from 8 years of survey data. The maximum per label is 4 (2 at 2 oz ai/A, 2 at 4 oz ai/A, for a total limit of 12 oz/A/year).

[5] For pecans (GA) there are almost no commercial applications by persons devoted to that business. Instead, larger growers will often treat neighboring small groves for a share of the harvest. If there were a commercial applicator, he would have the same exposure as the high end grower, who is applying the maximum the equipment will allow. The increment to add to the larger grower's exposure for treating others is about 28 acres, estimated as follows:

Total US acres in groves < 25 acres	=	20669	a
Total US groves of < 25 acres	=	2781	b
Ave. acres/grove, < 25 acres	=	7.4	c
Total US groves > 25 acres	=	740	d
Ratio of large/small groves (b/d)	=	3.8	e
Ave. small grove acres treated by larger growers (e x c)	=	28.2	

This is about a half day's additional spray time. The total US pecan acreage in groves > 25A is 107,347. Divided among 740 groves, the average is 145 acres. The 28.2 increment is thus 19 percent (28.2/145).

For potatoes, we were given the information in terms of how many acres an aerial applicator treats in a season at the rate of 1000 - 1200 acres/day for typically 12 days, up to 20 days in rainy years. If the average farm size is 143 acres, and there are 2.1 applications per season, 40 farms are treated. At 3 applications per year, either the number of farms would decrease or the number of days would increase. For sugarbeets, similar logic applies. At a typical farm size of 159 acres and a typical number of treatments of 2.75, about 27 farms would typically be treated.

[6] The application rate is the same for both liquid and wettable powder formulations on an active ingredient basis. For pecans and potatoes, a half rate in a mixture with a half rate of another fungicide is sometimes used. This information is on the label (reg. no. 1812-350) for potatoes, and was obtained from extension personnel for pecans. We are not certain if this is practiced for sugarbeets.

We hope this answers your questions. Please contact us further if need be.