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OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Revised Dietary Exposure Assessment for Captan

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In the Captan Dietary Exposure Assessment memo dated 14 December 1987, estimates for average captan residues on a number of crops were determined using FDA monitoring data from the years 1978-84. Where sufficient monitoring data were available, the number selected for the average residue for any given crop was the average of the positive samples obtained in the year with the highest single residue. No correction was made for percent of crop treated.

We have now obtained monitoring data for the years 1985-87 from FDA and revised estimates of the percent of crop treated by captan from the Special Review Branch. To insure consistency with similar data which have been generated for other fungicides, we have revised the method used to determine average residues and updated the data as well.

FDA monitoring data are broken down into four categories: domestic surveillance, domestic compliance, import surveillance, and import compliance. Only the surveillance data were considered because the compliance data are probably the result of targeting collection toward areas of suspected non-compliance. For captan, the percentage of positives in the import surveillance data was found to be half that in the domestic data, so the decision was made to use only the domestic data.

Based on the assumption that residues are present on all samples that have been treated, percent of crop treated data were used to assign values to samples in which no residues were detected. (See memo of D.F. Edwards, 8/10/88.) Briefly, if 100 samples are taken of a crop where 40% of the crop was treated, 40 of the 100 samples should have some level of residue. If residues are detected in only 25 samples, 15 samples are assigned a residue level of 1/2 the limit of detection, and the remaining 60 samples are carried as 0 residue.

The following formula was used to calculate the average dietary residues:

$$[(\%CT * TSC - TPC) * 0.01 \text{ ppm} + APS * TPC]/TSC$$

where %CT = % crop treated  
 TSC = total sample counts  
 TPC = total positive counts  
 0.01 = 1/2 the limit of detection  
 APS = average residue in positive samples (ppm)

COMMODITY	% CROP TREATED	TOTAL # SAMPLES	TOT. # POS.	AV. DIET. RES. ppm
ALMONDS	60	6	0	0.006
APPLES	36	827	141	0.0302
APRICOTS	65	58	12	0.4636
CANTALOUPE	<1	220	0	-
CHERRIES	75	169	10	0.0521
CUCUMBERS	<1	185	0	-
GRAPES	22	203	17	0.0709
NECTARINES	60	72	2	0.0096
PEACHES	60	242	40	0.3569
PEARS	35	179	2	0.0044
PLUMS/PRUNES	85	114	1	0.0085
STRAWBERRIES	85	697	270	0.8417
TOMATOES	<1	526	0	-

No calculations were performed in cases where the percent of crop treated was less than one. Coincidentally, no positive residue samples were found for any of those three commodities. Average dietary residues were only calculated for the thirteen crops which the Captan Task Force is supporting for future use of captan.

We have also reevaluated our calculations for secondary residues in milk. In our memo of 12/14/87, we did not consider the percent of crop treated into our calculations for secondary residues. It seems reasonable to use such an approach here since most of the feed items likely to contribute to the residue in the animals' diet are grown in California. Using % crop treated data would reduce the milk estimate to about 50% of the previous value given. The value we now believe should be used for the TAS run

is 0.05ppm. It should be noted that this value is still probably high. However, since no monitoring data exist for the captan metabolites that are present in milk, a more realistic estimate based on monitoring data could not be developed.

cc: Captan S.F., R.F., E. Wilson (PM-23 team), Circ, TAS, Gray

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