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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Chlorothalonil Dietary Exposure Assessment - Data Used in Developing Tomato Processing Reduction Factors

FROM: Debra F. Edwards, Ph.D., Section Head
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Richard D Schmitt

TO: Ronn Dexter
Office of Policy, Planning and Evaluation
Office of Policy Analysis (PM 223)

This memorandum is in response to a request by your contractor (Susan Keane of ABT Associates) regarding the data used in developing processing reduction factors for chlorothalonil on tomatoes. The data used were from a registrant submission dated 7/5/83 (MRID No. 00129178). In this submission, three tomato processing studies were presented. These are discussed below:

1. In the first study, field treated tomatoes were subjected to a caustic wash (0.5% NaOH) prior to processing. Residue data were obtained for unwashed fruit, fruit following the caustic wash, and juice. Reported mean residue values for chlorothalonil were as follows:

	Trial #1	Trial #2
unwashed field samples	3.25 ppm	1.71 ppm
fruit following caustic wash	0.17	0.015
juice	<0.01	<0.01

2. In the second study, tomatoes were subjected to a cold water wash and then processed into juice and paste. However, residues were not determined in the washed fruit. Reported mean residue values for chlorothalonil were as follows:

unwashed field samples	3.96 ppm
canned paste	<0.01 ppm
canned juice	<0.01 ppm

3. In the third study, tomatoes were subjected to a cold water wash and then processed into juice and paste. Reported mean residue values were as follows:

	Trial #1	Trial #2
unwashed field samples	2.51 ppm	4.69 ppm
washed fruit	0.65	1.20
juice	0.02	0.78
paste	<0.01	0.02

Since FDA surveillance monitoring samples are collected in commerce and thus may have been subjected to water washes at the packing plant prior to shipment, we developed reduction factors based on reduction in residues from washed fruit. The calculated reduction factors from washed fruit in the above study were as follows:

juice	0.03x	0.65x
paste	0.02x	0.02x

In addition, if the 0.26x reduction factor from unwashed to washed fruit observed in this study is applied to the unwashed fruit in the second study, residues in unwashed fruit would most likely have been 1 ppm, indicating reduction factors of approximately 0.01x in going from washed fruit to paste and juice.

CONCLUSIONS:

The data from the first study, in which a caustic wash was employed, were not used in developing a reduction factor for juice because we had no clear information regarding the percentage of tomatoes subjected to such a procedure during processing, though it apparently is common. If the reduction factors from this study had been used, the mean reduction factor for juice (see below) would have been even lower (approximately 0.14x). Use of a caustic wash would be expected to result in a higher degree of residue reduction than the cold water wash and this is borne out by the available data (20-100x reduction following caustic wash vs. 4x reduction following cold water wash).

On the basis of the reduction factors observed for paste and juice in studies 2 and 3, the following mean reduction factors were calculated:

	study #2	study #3		mean
juice	0.01x	0.03x	0.65x	0.23x
paste	0.01x	0.02x	0.02x	0.02x

Thus, reduction factors of 0.25x for juice and 0.02x for paste were used in the dietary exposure analysis for chlorothalonil on tomatoes (D. Edwards, memo of 8/10/88 - attached).

cc without attachment: L. Rossi (RB/SRRD), Registration Standard File, D. Edwards (DEB), RF, Circu