PP# 4F0300

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

SEP 27 1993

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#4F03008 (CBTS #10804; Barcode #D183901). Chlorpyrifos on Tomatoes. Anticipated Residues.

FROM: Nancy Dodd, Chemist
Tolerance Petition Section II
Chemistry Branch I- Tolerance Support
Health Effects Division (H7509C)

THROUGH: Debra Edwards, Ph.D., Chief
Chemistry Branch I- Tolerance Support
Health Effects Division (H7509C)

TO: Dennis Edwards, PM #19
Insecticide-Rodenticide Branch
Registration Division (H7505C)

and

Albin Kocialski, Section Head
Registration Section
Health Effects Division (H7509C)

DowElanco has submitted a letter dated 10/20/92 requesting reevaluation of the dietary risk based on anticipated residues and percent crop treated for chlorpyrifos on tomatoes.

A revised Section F which proposes a tolerance of 1.0 ppm on tomatoes and 65 ppm on tomato pomace (wet or dry) for residues of parent chlorpyrifos only has also been submitted.

Conclusion and Recommendation

The anticipated (i.e. average) residues for chlorpyrifos would be 0.19 ppm for tomatoes, 0.006 ppm for tomato juice, and 0.02 ppm for tomato puree, paste, and catsup based on crop field trial data and a processing study. (Since residue data for tomato paste and catsup are not available, the value of 0.02 ppm for puree should be used for paste and catsup.) The DRES analysis should be revised using these values. The percent crop treated as determined in Ed Brandt's 9/30/92 memo was not considered in calculating these

anticipated residues. His memo is attached to our concurrent review of chlorpyrifos on lettuce.

TOX considerations permitting, CBTS continues to recommend for establishment of the tomato and tomato pomace tolerances at 1 ppm and 65 ppm, respectively, for residues of chlorpyrifos per se.

DETAILED CONSIDERATIONS

In its letter dated 10/20/92, DowElanco has indicated that the pending label for Lorsban 4E/50 W on tomatoes will allow a maximum use rate of 2 lbs 50W per acre or 1 qt of 4E per acre (1 lb ai/A) and a maximum of 10 applications per season. A 7-day PHI will be observed.

The petitioner has submitted residue data for tomatoes and tomato fractions (Attachment 1). The data in Attachment 1 are found in CBTS's files as follows:

The 1980 report was submitted in FAP#1H5295 (Accession #244590). The data which are reported in Attachment 1 from the 1980 study reflect 5 applications at the rate of 1 lb ai/A and a 7-day PHI.

The 1983 report was submitted in FAP#1H5295 in the report dated 8/5/93. The data reflect 9 or 10 applications at the rate of 1 lb ai/A and a 7-day PHI.

The 1985 report reflects 7-day PHI's and 5-11 applications at the rate of 1 lb ai/A. Attachment 2 contains the 1985 data as tabulated in Table 1 in PP#5F3286 (Accession #073734).

Processing data (0.38 ppm in tomatoes, 0.01 ppm in juice, 0.05 ppm in puree, and 1.6 ppm in wet pomace) were submitted in FAP#1H5295, Accession #244590.

The petitioner has calculated anticipated residues of 0.19 ppm for tomatoes, 0.006 ppm for juice, 0.02 ppm for puree, and 11 ppm for pomace (Attachment 1). The petitioner indicates that anticipated residues for pomace are not needed for a DRES analysis.

Considering only the residue data reflecting 8-10 applications (since these data are closer to the proposed use of 10 applications), the anticipated residue on tomatoes would still be 0.19 ppm.

CBTS concludes that the anticipated residues would be 0.19 ppm for tomatoes, 0.006 ppm for tomato juice, and 0.02 ppm for tomato puree, paste, and catsup. (Since residue data for tomato paste and

catsup are not available, the value of 0.02 ppm for puree should be used for paste and catsup.)

NOTE: In the latest review of this petition (L. Cheng, 1/12/93), CBRS recommended that the existing tolerances for tomato and tomato pomace (wet and dry) be revised to 1 ppm and 65 ppm, respectively, for residues of chlorpyrifos per se. These are the same tolerance levels as in the Section F of the present submission.

Attachment 1: Data used by the petitioner to calculate anticipated residues
Attachment 2: Table 1 from PP#5F3286 (1985 data)

cc with Attachments 1 and 2: RF, SF, Circu., PP#5F3286, FAP#1H5295, N. Dodd (CBTS), E. Haeberer (CBTS), Reg. Std. File

RDI:E. Haeberer:9/20/93:R. Loranger:9/24/93
H7509C:CBTS:CM#2:Room 804F:305-5681:N. Dodd:nd:9/24/93

Residues of Chlorpyrifos Found on Tomatoes (7 Day PHI)

LOCATION	FORMULATION TYPE	DOSAGE RATE (LB A.I./Acre/ Season)	CHLORPYRIFOS LEVEL(S) (ppm)	AVERAGE CHLORPYRIFOS LEVEL (ppm)
		1980 REPORT		
Davis, CA	4E	5	0.14, 0.19, 0.25, 0.19	0.19
Davis, CA	4E	5	0.13, 0.23, 0.33, 0.20	0.22
Davis, CA	4E	5	0.21, 0.67, 0.30, 0.32	0.38
		1983 REPORT		
Homestead, FL	4E	10	0.26	0.26
Bradenton, FL	4E	9	0.03	0.03
Clermont, FL	4E	10	0.20	0.20
Midland, MI	4E	10	0.09	0.09
Clemson, SC	4E	10	0.10	0.10
Geneseo, IL	4E	10	0.34 ④	0.34
Lafayette, IN	4E	10	0.15	0.15
Davis, CA	4E	10	0.08	0.08
New Paltz, NY	4E	10	0.90	0.90
State College, PA	4E	10	0.92	0.92
Tifton, GA	4E	10	0.08	0.08
Amhurst, MA	4E	10	0.04	0.04
		1985 REPORT (Cherry Tomatoes)		
Imperial Valley County, CA	50W	11	0.01	0.01
Groveland, FL	50W	9	0.11	0.11
Zellwood, FL	50W	9	0.34	0.34
Geneseo, IL	50W	9	0.14	0.14
② Pelham, MA	50W	5	0.20	0.20
③ Marcellus, MI	50W	9	0.09	0.03 ①
Wayside, MI	50W	10	0.19	0.19
Elmer, NJ	50W	8	0.60	0.60
Geneva, NY	50W	10	0.10	0.10
Corvallis, OR	50W	10	0.23	0.23
Davis, CA	50W	9	0.05	0.05
Davis, CA	4E	9	0.08	0.08

[redacted]

① 0.09 ppm N. Dodd, EPA

② Marcellus, MI ND

③ Midland, MI ND

④ 0.26 ppm ND

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1985 REPORT (Tomatoes)

Zellwood, FL	50W	8	0.13	0.13
Geneseo, IL	50W	10	0.02	0.02
Midland, MI	50W	9	0.01	0.01
Wayside, MS	50W	10	0.05	0.05
Elmer, NJ	50W	10	0.36	0.36
Corvallis, OR	50W	10	0.06	0.06
Davis, CA	50W	10	0.02	0.02
Davis, CA	4E	10	0.11	0.11
Davis, CA	1E	10	0.12	0.12
Groveland, FL	50W	9	0.13	0.13
Groveland, FL	1E	9	0.12	0.12
Marcellus, MI	50W	7	0.05	0.05
Marcellus, MI	1E	7	0.44	0.44

ANTICIPATED RESIDUE = 0.19 ppm

Residues of Chlorpyrifos Found on Tomato Process Fractions

FRACTIONS	CHLORPYRIFOS LEVELS (ppm)	CONCENTRATION FACTOR
WHOLE TOMATO	0.38	---
JUICE	0.01	0.03
PUREE	0.05	0.13
WET POMACE	1.6	4.2
WET POMACE	1.3	---
DRY POMACE	18.0	14.0

FRACTIONS	CHLORPYRIFOS ANTICIPATED RESIDUE IN WHOLE TOMATO X CONCENTRATION FACTOR	ANTICIPATED RESIDUE LEVEL (ppm)
JUICE	0.19 PPM X 0.03	0.006
PUREE	0.19 PPM X 0.13	0.02
POMACE	0.19 PPM X 4.2 X 14	11

NOTE: Anticipated residue for tomato pomace is not needed for a DRES analysis.

9/92/tomatoes/kle

TABLE I

RESIDUES OF CHLORPYRIFOS AND 3,5,6-TRICHLORO-2-PYRIDINOL (TCP)
IN OR ON FRUITING VEGETABLE CROPS TREATED WITH LORSBAN INSECTICIDE APPLIED AS FULL COVERAGE FOLIAR SPRAYS -- (continued)

Crop	Location	Formulation	Dosage Chlorpyrifos (lb/acre)[b]	Days from Application to Sample Collection	Residue Found - Average (Range)[a] - ppm			Report/ Page Ref.
					Chlorpyrifos	TCP	Chlorpyrifos + TCP[c]	
Cherry Tomatoes	Imperial Valley County, CA	50W	11(1x11)	7	0.01	0.12	0.13	D.1/40
	Wayside, MS	50W	10(1x10)	7	0.19	0.12	0.31	D.1/46
	Geneva, NY	50W	10(1x10)	7	0.10	0.05	0.15	D.1/48
	Corvallis, OR	50W	10(1x10)	7	0.23	0.17	0.40	D.1/49
	Uvalde, TX	50W	10(1x10)	7	--	ND	ND	D.1/50
	Groveland, FL	50W	9(1x9)	7	0.11	0.31	0.42	D.1/41
	Zellwood, FL	50W	9(1x9)	7	0.34	0.78	1.10	D.1/42
	Geneseo, IL	50W	9(1x9)	7	0.14	0.08	0.22	D.1/43
	Midland, MI	50W	9(1x9)	7	0.09	0.25	0.34	D.1/45
	Davis, CA	50W	9(1x9)	7	0.05	0.17	0.22	D.1/51
	Davis, CA	4E	9(1x9)	7	0.08	0.29	0.37	D.1/52
	Elmer, NJ	50W	8(1x8)	7	0.60	0.28	0.88	D.1/47
	Marcellus, MI	50W	5(1x5)	7	0.20	0.28	0.48	D.1/44
Tomatoes	Imperial Valley County, CA	50W	12(1x12)	6	--	ND	ND	D.1/53
	Geneva, NY	50W	11(1x11)	7	--	ND	ND	D.1/59
	Geneseo, IL	50W	10(1x10)	7	0.02	0.11	0.13	D.1/55
	Wayside, MS	50W	10(1x10)	7	0.05	<0.05	<0.10	D.1/57
	Elmer, NJ	50W	10(1x10)	7	0.36	0.35	0.71	D.1/58
	Corvallis, OR	50W	10(1x10)	7	0.06	0.14	0.20	D.1/60
	Uvalde, TX	50W	10(1x10)	7	--	<0.05	<0.09	D.1/61
	Davis, CA	50W	10(1x10)	7	0.02	0.05	0.07	D.1/62
	Davis, CA	4E	10(1x10)	7	0.11	0.43	0.54	D.1/63
	Davis, CA	1E	10(1x10)	7	0.12	0.16	0.28	D.1/63
	Geneseo, IL	1E	10(1x10)	7	--	0.06	0.11	D.1/68
	Midland, MI	50W	9(1x9)	7	0.01	0.14	0.15	D.1/56
	Groveland, FL	50W	9(1x9)	7	0.13	0.20	0.33	D.1/64
	Groveland, FL	1E	9(1x9)	7	0.12	0.11	0.23	D.1/65
	Zellwood, FL	50W	8(1x8)	7	0.13	0.19	0.32	D.1/54
	Marcellus, MI	50W	7(1x7)	7	0.05	0.28	0.33	D.1/66
	Marcellus, MI	1E	7(1x7)	7	0.44	0.19	0.63	D.1/67

ATTACHMENT 2