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

MAR 10 1986

MEMORANDUM

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: PP#4F3062 (Acc. #261114; RCB #462 & #463): Chlorpyrifos (Lorsbar® 50W)  
in or on Stone Fruits. Amendment of 1/30/86.

FROM: W. T. Chin, Chemist *W. T. Chin*  
Petition Evaluation Section III  
Residue Chemistry Branch  
Hazard Evaluation Division (TS-769)

THRU: Philip V. Errico, Section Head *Philip V. Errico*  
Petition Evaluation Section III  
Residue Chemistry Branch  
Hazard Evaluation Division (TS-769)

TO: Jay S. Ellenberger PM #12  
Registration Division (TS-767)

and

Toxicology Branch  
Hazard Evaluation Division (TS-769)

BACKGROUND

The petitioner, Dow Chemical Company, has proposed a 3 ppm tolerance for combined residues of the insecticide chlorpyrifos [0,0-diethyl 0-(3,5,6-trichloro-2-pyridyl) phosphorothioate] and its metabolite, TCP (3,5,6-trichloro-2-pyridinol) (of which no more than 2 ppm is chlorpyrifos) in or on stone fruits (PP#4F3062, Acc. #072408, 3/12/84; L.L.Kutney, 4/24/84). Tolerances for chlorpyrifos in or on stone fruits have been established for cherries at 2.0 ppm and for nectarines, peaches and plums (fresh prunes) at 0.05 ppm (40 CFR 180.342).

RCB has recommended against this proposal because of the two deficiencies identified in the 4/24/84 memo of L. L. Kutney.

PRESENT CONSIDERATION

In response to the two deficiencies identified above, the petitioner has submitted a cover letter (1/30/86) from Robert F. Bischoff of Dow to J. S. Ellenberger of EPA and two pages of residue data generated from Lorsban® 50W-treated plums and dried plunes.

RCB (W.T. Chin) called R. L. McKellar (Dow) on 2/18/86 and 2/21/86 regarding the residue data submitted in the current amendment. R. L. McKellar made the following clarifications:

1. The heading of Table 1 should read: Residues of Chlorpyrifos and TCP in Fresh Plums.
2. The heading of Table 2 should read: Residues of Chlorpyrifos and TCP in Dried Prunes.
3. Drying conditions: Dried prunes were prepared by heating fresh plums in a commercial dehydrator through 100°F air for 12 hours. The moisture content in the dried prunes was approximately 20% before residue analysis.
4. The non-detectable (ND) level for TCP is 0.025 ppm. However, the data submitted in the current amendment indicate that the detectable limit for TCP in fresh plums is 0.10 (0.052-0.126; ave. 0.09) ppm and in dried prunes is 0.25 (0.124-0.382; ave. 0.23) ppm.

The two deficiencies identified above are restated below, followed by the petitioner's response and RCB's comments/conclusions.

Deficiency No. 1

"The petitioner should submit an additional residue study for dried prunes. The fresh prune used for drying should bear residue at or near the proposed tolerance level."

The Petitioner's Response to Deficiency No. 1

The petitioner submits two pages of residue data generated from Lorsban® 50W-treated plums following a single application at 3 lb a.i./A and at 0, 3, and 7 days of PHI. This experiment was conducted in Davis, California in 1985. Fresh plums and dried prunes were analyzed with the established Method ACR 84.4. Results are summarized in Table 1 on the next page.

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Table 1. Residues of Chlorpyrifos and TCP in Fresh Plums and Dried Prunes

(One application at 3 lb a.i./A)

PHI (Day)	Residues in Fresh Plums (ppm)			Residues in Dried Prunes (ppm)		
	Chlorpyrifos	TCP	Total	Chlorpyrifos	TCP	Total
0	0.84(a)	ND(b)	0.84	0.05(a)	0.37(b)	0.42
0	1.10	ND	1.10	0.08	0.12	0.20
0	0.98	ND	0.98	0.06	0.11	0.17
0	0.98	ND	0.98	0.13	0.25	0.38
3	0.49	ND	0.49	0.06	0.12	0.18
3	0.59	ND	0.59	0.09	0.09	0.18
3	0.61	ND	0.61	0.08	0.50	0.58
3	0.60	ND	0.60	0.05	0.22	0.27
7	0.38	<0.05	0.38	0.09	0.19	0.28
7	0.50	ND	0.50	0.11	0.37	0.48
7	0.41	0.15	0.56	0.08	0.25	0.33
7	0.35	ND	0.35	0.06	0.33	0.39

(a) Corrected for average control (96%) and average recovery (93%).

(b) Corrected for average control (105%), average recovery (101%) and the TCP contributed by the alkaline hydrolysis of chlorpyrifos.

ND: <0.25 ppm.

RCB's Comments/Conclusions on the Petitioner's Response to Deficiency No. 1

The data shown in Table 1 above indicate that the major residue in fresh plums is the parent compound which decreases with the increase in PHI and that the amounts of TCP residue are insignificant. However, in the dried prunes, the amounts of chlorpyrifos are insignificant and are generally lower than TCP. This is mainly due to the thermal breakdown of chlorpyrifos to give TCP and other compounds during the 12 hours drying process. In both cases, the highest amount of the combined residues of chlorpyrifos and TCP is 1.1 ppm determined in a fresh plum sample at a 0-day PHI. Since the amounts of combined residues of chlorpyrifos and TCP in dried prunes are generally lower than in fresh plums, it is clear that drying process of fresh plums does not result in concentration of these residues in dried prunes. Therefore, RCB concludes that deficiency No. 1 has been resolved in terms of the total residues of concern.

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Deficiency No. 2

"The petitioner should submit a revised Section B by (1) labeling the dosage rate both in terms of lbs. a.i./100 gal. in a dilute spray to run-off and for concentrated sprays in terms of apply an equivalent amount of active ingredient/A to account for variation in tree size, and (2) by including a label restriction precluding the feeding of cover crops."

The Petitioner's Response to Deficiency No. 2

The petitioner did not submit a revised Section B in the current amendment.

RCB's Comment/Conclusion on the Petitioner's Response to Deficiency No. 2

Since a revised Section B was not submitted in the current amendment, therefore, RCB concludes that the deficiency No.2 identified above is still outstanding.

RECOMMENDATION

At this time, RCB continues to recommend against the establishment of the proposed tolerance for combined residues of chlorpyrifos and TCP in or on stone fruits at 3 ppm until the deficiency No.2 identified above is resolved.

ADDITIONAL COMMENTS

In PP#4F3062 (Acc. #072408, 3/12/84) and the current amendment (Acc. #261114, 1/30/86), the petitioner has proposed a group tolerance at 3 ppm for the combined residues of chlorpyrifos and its metabolite TCP in or on stone fruits by applying 1.5 lb a.i./A, no more than 8 applications/growing season and at a 14-day PHI.

In PP#6F3357 (Acc. #261145, 2/3/86), however, the petitioner is also proposing 0.5 and 0.2 ppm tolerances in or on nectarines and plums, respectively, for the combined residues of chlorpyrifos and its metabolite TCP by applying 1.5 lb a.i./A, no more than 8 applications/growing season and at a 28-day PHI.

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In accordance with 40 CFR 180.34(f)(5): "If maximum residues (tolerances) for the representative crops vary by more than a factor of 5 from the maximum value observed for any crop in the group, a group tolerance will ordinarily not be established. In this case individual crop tolerances, rather than group tolerances, will normally be established."

Since the group tolerance for stone fruits is proposed at 3 ppm which is greater than 5X of the requested tolerances for nectarines and plums, the group tolerance will ordinarily not be established. For this reason, the petitioner should clarify their intent as to whether they wish a group tolerance for stone fruits or tolerances for individual crops of the Stone Fruits Crop Group.

cc: R.F., Circu., W.T.Chin, TOX, EAB, PP#4F3062, EEB, PMSD-ISB  
RDI: P.V.Errico(2/21/86), R.D.Schmitt(2/21/86)  
TS-769: RCB: CM#2, RM812,557-4352, W.T.Chin,wc(2/21/86)