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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Chlorpyrifos Second Round Review (SRR) - Anticipated Residues for Use in Dietary Exposure Assessment

FROM: Debra F. Edwards, Ph.D.
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TO: Albin Kocialski, Chief
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Science Analysis and Coordination Branch
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Introduction:

Using currently established tolerances and percent crop treated data obtained from BEAD, the SACB TAS Staff calculated the dietary exposure to chlorpyrifos at 210% of the PADI for the overall U.S. population and 561% for the most highly exposed subgroup, nonnursing infants. Consequently, DEB has been asked to provide anticipated residues for the following food items that are the major contributors to exposure: red meat, orange juice, apples, milk, and poultry (memo dated 11/29/88 from Albin Kocialski [SACB] to Bill Boodee [DEB]).

DEB Response:

Current tolerances for chlorpyrifos cover combined residues of the parent and its metabolite, 3,5,6-trichloropyridinol (TCP). The Toxicology Branch (II) in its recent review of data for the Second Round Review has determined that the metabolite, TCP, is not of toxicological concern and may be excluded from calculations pertaining to the TMRC for chlorpyrifos (memo, dated 11/29/88 from Alan Levy [TOX-II] to Dennis Edwards [RD]). Furthermore, at a meeting held on 12/8/88 between Alan Levy, Quang Bui, and Marcia Gemert of TOX-II, Dennis Edwards of RD, and Debra Edwards of DEB, the members of the TOX Branch confirmed that the toxicology data do not justify regulation of the

metabolite in food. Thus, the metabolite may be removed from the tolerance expression.

As a result of these TOX conclusions, the Registrant will be asked via the SRR and a pending petition (3F2884) to propose comprehensive tolerance revisions that will cover residues solely of the parent, chlorpyrifos. In petition 3F2884, the Registrant proposed tolerance revisions for several commodities such that the tolerance would cover combined residues of chlorpyrifos and TCP but would separately specify the maximum allowable level of chlorpyrifos per se. Due to the discovery of certain data gaps during the development of the residue chemistry chapter of the SRR, not all the proposed tolerance revisions in 3F2884 may be granted. However, the following tolerances may be approved provided the registrant submits a new section F specifying only a tolerance for chlorpyrifos per se:

Commodity	Chlorpyrifos (ppm)
banana pulp	0.01
Brassica leafy vegetables	1
cherries	1
field corn grain	0.05
cottonseed	0.2
cucumbers	0.05
eggs	0.01
figs	0.01
horses, fat, meat and mbyp	0.25
nectarines	0.01
peaches	0.01
peanuts	0.2
pears	0.01
plums	0.01
poultry fat, meat, mbyp	0.1
pumpkins	0.05
radishes	2
rutabagas	0.5
legume vegetables, except soybeans	0.05
soybeans	0.3
strawberries	0.2
sweet potatoes	0.05
turnip greens	0.3
turnips	1
mint oil	8
peanut oil	0.4

The remaining tolerances either were not addressed in PP#3F2884, pertain only to feed items or have outstanding data gaps that prohibit revision of the tolerance at this time (see review by Stephanie Willet, DEB, 12/88).

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Since the above levels are based solely upon residues of chlorpyrifos per se, they should be used in any subsequent TAS analyses for chlorpyrifos in lieu of the current tolerances.

Due to the presence of outstanding data requirements in the residue chemistry chapter of the Chlorpyrifos SRR pertaining to direct treatment of beef and dairy cattle, no reliable anticipated residue data for red meat or milk are available. However, the following anticipated residue values may be used:

Commodity	Anticipated Residue (ppm)	Source
Citrus juice	0.05	PP#2575 PP#2168
Citrus pulp	0.1	PP#2168
Apples, raw	0.5	PP#2221
Apple juice	0.1	PP#2221 PP#2620
Poultry muscle	0.01	PP#1306
Poultry liver	0.01	PP#1306

The values for citrus pulp and juice were obtained by applying reported reduction factors from processing studies to the established tolerance for citrus fruits. The value for raw, unwashed apples was obtained by determining the average field residue from nine tests conducted in CA, NC, WA, MI and NY in which 4-9 foliar applications at 2-4 lb ai/A were made with the last application 28 days prior to harvest. [Registered use permits up to 8 foliar applications at $\leq$1.5 lb ai/A made at least 28 days prior to harvest.] The value for apple juice was obtained by applying the reported reduction factors from processing studies to the anticipated residue value for raw, unwashed apples. In each case where reduction factors were obtained from more than one processing study, the factor that would result in the least reduction of residues was used. The values for poultry muscle and liver were obtained from a feeding study in which 10 ppm chlorpyrifos was fed in the diet for 30 days.

Currently established tolerance values should be used in the TAS analyses for all commodities other than those listed in the above two tables until the registrant responds to the requirements in the Second Round Review for Chlorpyrifos.

If assessment of dietary exposure using the data provided above still results in anticipated residue contributions exceeding the PADI, the Dietary Exposure Branch, via the SRR, may recommend that the Registrant initiate studies designed to elicit more extensive and reliable anticipated residue data for high exposure commodities (e.g., red meat). Appropriately designed cooking studies and/or residue monitoring studies may generate data suitable for use in TAS analyses.

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