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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

CERTIFIED MAIL P 065 16 594

MAY 21 1996

Mr. John Thornton
Manager, Registrations
Bayer Corporation
8400 Hawthorn Road
P.O. Box 4913
Kansas City, MO 64120-0013

Subject: Review of Registrants Acute Dietary Analysis for Fenamiphos Case 0333, A.I. 100601.

Dear Mr. Thornton:

This letter addresses the review of your April 2, 1996, submission of an acute dietary analysis on fenamiphos. The Agency has completed its review of this acute dietary analysis and has determined it is unacceptable for the following reasons:

(1) The FDA monitoring values used in the acute analysis for fenamiphos for apples, strawberries, raspberries, etc. are not acceptable. The use of monitoring data in acute analysis is unacceptable for most raw agricultural commodities (RACs). Monitoring data may only be used for highly blended commodities such as small grains, oils, and most fruit juices. Alternatively, average field trial and processing data may be used for highly blended commodities.

(2) Correction for percent crop treated may be used for blended commodities only. It is acceptable to use the percent crop treated values from the chronic dietary analysis in conjunction with field trial data for highly blended commodities. Although most fruit juices are considered highly blended commodities, orange juice is not. A consumer could potentially obtain a single serving from only one or two fruits. The question of whether a commodity used as a feed item is blended should be used in consideration of the livestock diet as well.

CONCURRENCES								
SYMBOL	ARB							
SURNAME	RKent							
DATE	5/21/96							

Jthornton
Dated:
P 065 166 594

(3) Because you have a number of proposed uses which are pending the results of the risk assessment for the Reregistration Eligibility Decision document, any further acute dietary risk analysis should be conducted both with and without the proposed uses.

(4) Additionally any future acute dietary risk analysis should be conducted without meat and milk tolerances since they are no longer required due to elimination of several feed items from the revised tolerance reassessment table which is attached along with a copy of the review.

If you have any further questions concerning this matter, please contact Ron Kendall the chemical review manager for this case at (703) 308-8068.

Sincerely,

Kathleen Depukat, Acting Section Chief
Reregistration Section 1
Accelerated Reregistration Branch
Special Review and
Reregistration Division

enclosure: Science Review

cc: Jane Smith, HED

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

MAY 14 1996

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Comments on Fenamiphos Acute Dietary Analysis; Chemical No. 101601; DP Barcode No.: D225197; CBRS No.: 17129; MRID Nos.: None

FROM: Christine L. Olinger, Chemist
Chemistry Pilot Review Team
Chemistry Branch II - Reregistration Support
Health Effects Division (7509C)

THRU: Edward Zager, Chief
Chemistry Branch II - Reregistration Support
Health Effects Division (7509C)

TO: Jane Smith
Risk Characterization and Analysis Branch
Health Effects Division (7509C)

Bayer, Inc. has responded to the most recent dietary risk assessment by submitting their own acute dietary analysis for fenamiphos performed by TAS, Inc. CBRS has been requested to provide comments on the analysis, which are listed below.

- The use of monitoring data in acute analysis is unacceptable for most raw agricultural commodities (RAC). Monitoring data may only be used for highly blended commodities such as small grains, oils, and most fruit juices. Alternatively, average field trial and processing data may be used for highly blended commodities. The FDA monitoring values used in the acute analysis for fenamiphos for apples, strawberries, raspberries, etc. are not acceptable.

- Correction for percent crop treated may be used for blended commodities only. Should the registrant conduct another acute dietary risk analysis, CBRS recommends that the percent crop treated values used in the chronic dietary analysis be used in conjunction with field trial data for highly blended commodities. (Note: although most fruit juices are considered highly blended commodities, orange juice is not. A consumer could potentially obtain a single serving from only one or two fruits.) The question of whether a commodity used as a feed item is blended should be used in

consideration of the livestock diet as well.

- Should the registrant conduct another acute dietary risk analysis, commodities for which tolerances have been proposed but have not been established, should be included as well. The registrant may elect to do two analyses: one with and one without the proposed uses.

Meat, Milk, Poultry, and Eggs

Summary

- Meat and milk tolerances are no longer required due to elimination of several feed items from Table II (September 1995); a revised tolerance reassessment table is attached as Table A.

- A confirmatory cattle feeding study should be included in the Agency RED.

Detailed Considerations

Many of the animal feed items used to estimate secondary residues in livestock commodities are no longer considered significant feed items in the most recent version of Table II (September 1995). CBRS has reconsidered some of the reassessed tolerances, particularly for animal feed items. A revised tolerance reassessment summary table is attached to this review as attachment 1; the revised values are highlighted.

A revised maximum dietary burden has been estimated using the reassessed tolerances and proposed tolerances and is presented in Table 1.

Table 1. Maximum Dietary Burden for Dairy and Beef Cattle

Commodity	Maximum Residue, ppm	% Dry Matter	Dairy % in Diet	Beef % in Diet	Max Dietary Burden, ppm Dairy	Max Dietary Burden, ppm Beef
Apple Pomace	1.22	40	20	40	0.61	1.22
Potato Waste [1]	0.4	15	40	40	1.07	1.07
Peanut Meal [2]	1.0	85	15	0	0.18	0.00
Citrus Pulp	2.5	91	20	20	0.55	0.55
			95.00	100.00	2.41	2.84

[1] A tolerance for potatoes has been proposed, but has not yet been established. A tolerance has been proposed for almond hulls, but the contribution to the livestock diet would be minimal.

[2] CBRS has recommended for an increased tolerance to 1 ppm for peanuts. No concentration or reduction of residues has been observed in peanut meal (MRID 41255702).

Fenamiphos residues in animal commodities are regulated in terms of the parent, fenamiphos sulfoxide, fenamiphos sulfone, des-isopropyl fenamiphos, des-isopropyl fenamiphos

sulfoxide, and des-isopropyl fenamiphos sulfone. Two feeding studies have been conducted with fenamiphos or one of its metabolites. In the first study cows were fed 4, 12, or 20 ppm fenamiphos in their diet. Tissues and milk were analyzed for residues of the parent, the sulfoxide, and sulfone. No residues were detected in milk or any tissue at all feeding levels. In the second study cows were fed fenamiphos sulfoxide in their diet at 2, 6, or 20 ppm, and samples were analyzed for all the regulated metabolites using a common moiety method. Residues were non-detectable in all tissues and milk at the 2 and 6 ppm levels. No residues were detected in milk and all tissues except liver in the 20 ppm study; residues in the liver were 0.012 ppm. The registrant tentatively identified the detectable residue as a des-isopropylated metabolite.

Extrapolating from the 20 ppm level to 2.8 ppm, there is a potential for residues of 0.0017 ppm in the liver. It is highly unlikely that a cow would ever eat a diet such as the one presented in Table 1. Each of the feeds are likely to be fed in a specific region of the country, but it is very unlikely that all of these feed items would be produced in the same region. Additionally all of these feed items would usually be blended or diluted, so the residues in feed are not likely to be close to the maximum burden presented in table 1.

When all parameters associated with this diet are taken into consideration, residues of fenamiphos and metabolites will not be detected in livestock commodities. There is no reasonable expectation of finite residues of fenamiphos and metabolites in livestock commodities as well. Therefore CBRS now considers this to be a 40 CFR §180.6(a)(3) situation, and that all tolerances for meat and milk should be revoked. This decision takes into consideration all pending tolerances for fenamiphos (refer to list in attachment 2). Should the registrant propose tolerances for additional feed items, then the need for meat and milk tolerances will have to be reconsidered.

Neither feeding study which has been submitted adequately fulfills Agency requirements for a magnitude of residue study. Earlier reviews of these studies considered them supplemental to support the existing tolerances. These studies are not completely sufficient to support a category 3 decision. Therefore CBRS recommends that a confirmatory cattle feeding study be required in the Agency RED. Lactating cattle should be fed fenamiphos in the diet at levels of 2.5, 7.5, and 25 ppm for a minimum of 28 days. The animals should be sacrificed within 24 hours of the final dose. Tissues and milk should be analyzed for fenamiphos, fenamiphos sulfoxide, fenamiphos sulfone, des-isopropyl fenamiphos, des-isopropyl fenamiphos sulfoxide, an des-isopropyl fenamiphos sulfone. The registrant should ensure that adequate storage stability data are available to support this study.

Storage Stability

SRRD has raised questions on the need for additional plant commodity storage stability data. CBRS has reviewed the storage stability data requirements found in the HED RED chapter for fenamiphos in plant commodities. The following is a clarification of those requirements. Only storage dates and intervals must be submitted; no new studies are required. The

revised text is highlighted.

Storage stability data are adequate for plant commodities or Chinese cabbage (bok choy), eggplant, kiwifruits, non-bell peppers, and peanuts and their processed commodities. Storage stability data are also available for several commodities for which no tolerance has been established including corn, broccoli, potatoes, and carrots. Data have generally demonstrated stability of fenamiphos and metabolites for intervals up to 1170 days on some commodities.

Storage stability studies with asparagus, bananas, garlic, and the processed commodities of cottonseed and grapes will be used to fulfill the outstanding requirements for storage stability data on asparagus, bananas, Brussels sprouts, garlic, okra, and strawberries and the processed commodities of cottonseed, grapes, and pineapples. The representative data must be consistent with the storage intervals of commodities from magnitude of the residue and metabolism studies for both the commodities tested and commodities to which these data will be translated. The registrant is required to submit a summary of storage dates, intervals, and conditions for the magnitude of residue studies for asparagus, bananas, Brussels sprouts, garlic, okra, and strawberries and the processed commodities of cottonseed, grapes, and pineapples. Because all previous storage stability studies for both registered and unregistered commodities provide preliminary evidence of stability of fenamiphos residues in plant commodities, the outstanding summary of storage information is considered confirmatory and the existing information sufficient to support the magnitude of residue studies and the tolerance reassessments.

cc: CLOlinger (CBRS), Circulate, Reg Std File, RF, SF, R. Kendall (SRRD), J. Stone (RD), E. Doyle (SAB)
7509C:CBRS:CLOlinger:clo:CM#2:Rm 816G:305-5406: 5/13/96
RDI: RPerfetti: 5/14/96 EZager: 5/14/96

ATTACHMENT 1

Table A. Tolerance Reassessment Summary (Revised)

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
Tolerances listed under 40 CFR 180.349(a):			
Apples	0.25		
Bananas	0.10		
Brussels sprouts	0.10	0.05	Codex harmonization (see Table D)
Cabbage	0.10		
Cherries	0.25		
Cocoa beans	0.02	Revoke	No registered uses exist.
Cottonseed	0.05		*Cotton, seed*
Eggplant	0.1		
Garlic	0.50		
Grapefruit Lemons Limes Oranges Tangerines	0.60	Revoke and establish at 0.5	Codex harmonization (see Table D)/*Citrus fruits group*
Grapes	0.10		
Okra	0.30		
Peaches	0.25		
Peanuts	0.02	1.0	
Peanuts, hulls	0.40	5.0	
Pineapples	0.30		
Raspberries	0.1		
Soybeans	0.05	Revoke	No registered uses exist.
Strawberries	0.6		
Tolerances listed under 40 CFR 180.349(b):			
Cattle, fat	0.05	Revoke	No reasonable expectation of finite residues.
Cattle, meat	0.05	Revoke	"
Cattle (mbyp)	0.05	Revoke	"
Goats, fat	0.05	Revoke	"
Goats, meat	0.05	Revoke	"
Goats (mbyp)	0.05	Revoke	"
Hogs, fat	0.05	Revoke	"
Hogs, meat	0.05	Revoke	"

Table A. Tolerance Reassessment Summary (Revised)

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/*Correct Commodity Definition*
40 CFR 180.349(b) continued:			
Hogs (mbyp)	0.05	Revoke	"
Horses, fat	0.05	Revoke	"
Horses, meat	0.05	Revoke	"
Horses (mbyp)	0.05	Revoke	"
Milk	0.01	Revoke	"
Sheep, fat	0.05	Revoke	"
Sheep, meat	0.05	Revoke	"
Sheep (mbyp)	0.05	Revoke	"
Tolerances listed under 40 CFR 180.349(c)			
Asparagus	0.02		
Beets, garden, roots	1.5		
Beets, garden, tops	1.0		
Bok choy	0.5		*Cabbage, Chinese*
Kiwifruit	0.1		*Kiwifruits*
Peppers, non-bell	0.6		
Tolerances listed under 40 CFR 185.2950			
Citrus oil	25.0		*Citrus, oil, refined*
Pineapples, juice	None	0.5	Must be proposed by the registrant
Raisins	0.3		*Grapes, raisins*
Tolerances listed under 40 CFR 186.2950			
Apple pomace (dried)	5.0	1.5	*Apples, pomace, wet.* Dried pomace no longer considered to be a major feed item.
Citrus molasses	2.5	Revoke	No longer considered a major feed item.
Citrus pulp (dried)	2.5		*Citrus, pulp, dried*
Grape pomace	1.0	Revoke	No longer considered a major feed item
Pineapple bran	10.0	Revoke	No longer considered a major feed item
Raisin waste	3.0	Revoke	No longer considered a major feed item.

ATTACHMENT 2

PENDING NEMACUR (FENAMIPHOS) ACTIONS

Petition - 9E3721
Imported Coffee Beans and Cantaloupe

Held up due to acute dietary risk.
(Note a proposed rule was published in Federal Register; however, a comment was received concerning the safety of a compound that uses over 500% of ADI. We have not yet been in a position to address this concern)

Petition - 6F1693
Potatoes*

Awaiting Bayer submission of field trial data that meets today's requirements. Also, Acute dietary risk.

Petition - 0F3894
Broccoli and cauliflower*
(Continuous section 18's have been issued to California for these uses)

Held up due to acute dietary risk.

Petition - 7F3523
Increased tolerance in peanut shells to 5.0 ppm
(So can apply to peanuts closer to harvest)

Held up due to acute dietary risk.

Petition - 0F3915
Walnuts and Prunes*

Held up due to Acute dietary risk.

Petition - 5F4556
Almonds and Pecans*

Company must submit additional file trial data for almond hulls. Also, Acute dietary risk.

***There are groundwater, non-target organism, and endangered species concerns for the pending new uses for fenamiphos. If the Agency is in a position to establish new tolerances, Bayer, RD and EFED will have to meet to identify risk mitigation measures under the new EFED paradigm to reduce risks to acceptable levels. SRRD is pushing forward with the RED to issue in June. All of these issues have to be addressed in the RED.**