

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460



OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MEMORANDUM

DATE: 16-APR-2008

SUBJECT: **Spirotetramat:** Acute and Chronic Dietary (Food and Drinking Water) Exposure and Risk Assessment for Residues on Citrus (Crop Group 10); Cucurbit Vegetables (Crop Group 9); Fruiting Vegetables (Crop Group 8); Grape (Crop Subgroup 13F); Hops; Leafy *Brassica* Vegetables (Crop Group 5); Leafy Non-*Brassica* Vegetables (Crop Group 4); Pome Fruit (Crop Group 11); Potato and Other Tuberos and Corm Vegetables (Crop Subgroup 1C); Stone Fruit (Crop Group 12); Tree Nuts (Crop Group 14); Onions; Strawberries; and Livestock Commodities. Decision No. 371317; 40 CFR 180.xxx.

PC Code: 392201

MRID Nos.: None

Petition No.: 6F7119

Assessment Type: None

TXR No.: None


DP No.: 339710


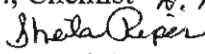
Registration Nos.: 264-xxx


Regulatory Action: Section 3 Registration


Reregistration Case No.: None

CAS No.: 382608-10-8

REVIEWER: George F. Kramer, Ph.D., Chemist 
Registration Action Branch 1 (RAB1)
Health Effects Division (HED) (7509P)

THROUGH: Douglas Dotson, Ph.D., Chemist 
Sheila Piper, Chemist 
Dietary Exposure Science Advisory Council (DESAC)
HED (7509P)

and
Dana M. Vogel, Branch Chief 
RAB1/HED (7509P)

TO: Jennifer R. Tyler, Risk Assessor
RAB1/HED (7509P)
and
 Rita Kumar/Meredith Laws, PM Team 01
Herbicide Branch/Registration Division (RD) (7505P)

Executive Summary

Acute and chronic dietary-exposure and risk assessments were conducted using the Dietary Exposure Evaluation Model (DEEM-FCID™, Version 2.03), which uses food consumption data from the USDA's Continuing Surveys of Food Intakes by Individuals (CSFII) from 1994-1996 and 1998. The analyses were performed to support a proposed Section 3 registration for the application of the new active ingredient (insecticide) spirotetramat (cis-3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro[4.5]dec-3-en-4-yl-ethyl carbonate) to citrus, cucurbit vegetables, fruiting vegetables, grapes, hops, leafy *Brassica* vegetables, leafy non-*Brassica* vegetables, pome fruit, tuberous and corm vegetables, stone fruit, and tree nuts.

Acute Dietary (Food and Drinking Water) Exposure Results and Characterization

The acute analysis assumed 100% crop treated (CT) and tolerance-level residues for all foods. DEEM™ 7.81 default processing factors were used for processed commodities. Dietary risk estimates were determined considering exposures from food plus drinking water using estimated drinking water concentrations (EDWCs) for surface water sources provided by the Environmental Fate and Effects Division (EFED). EDWC values were generated by the FQPA Index Reservoir Screening Tool (FIRST) for the Christmas tree application scenario, since this crop yielded the highest acute EDWC values. Ground water sources were not included, as the EDWCs for this water source are minimal in comparison to those for surface water. The resulting **acute dietary (food + water) risk estimates were ≤10% of the acute population-adjusted dose (aPAD) at the 95th percentile for the general U.S. population and all population subgroups; therefore, are not of concern to HED (i.e., <100% aPAD).** Children 1-2 years old were the most highly exposed population subgroup.

Chronic Dietary (Food and Drinking Water) Exposure Results and Characterization

A conservative chronic dietary assessment assuming tolerance-level residues, DEEM™ 7.81 default processing factors, and 100% CT was also conducted. The highest chronic EDWC (0.00137 ppb) was used for drinking water in this analysis. The chronic dietary risk assessment shows that for all included commodities, the **chronic dietary risk estimates are not of concern to HED (i.e., <100% chronic population-adjusted dose (cPAD)).** For the general U.S. population the exposure for food and water utilized 28% of the cPAD. The chronic dietary risk estimate for the highest reported exposed population subgroup, children 1-2 years old, is 77% of the cPAD.

Cancer

Spirotetramat was classified as "Not likely to be carcinogenic to humans;" therefore, a cancer dietary assessment was not performed.

I. Introduction

Dietary risk assessment incorporates both exposure and toxicity of a given pesticide. For acute and chronic assessments, the risk is expressed as a percentage of a maximum acceptable dose (i.e., the dose which HED has concluded will result in no unreasonable adverse health effects). This dose is referred to as the population adjusted dose (PAD). The PAD is equivalent to point of departure (POD, NOAEL, LOAEL, e.g.) divided by the required uncertainty or safety factors.

For acute and non-cancer chronic exposures, HED is concerned when estimated dietary risk exceeds 100% of the PAD. HED is generally concerned when estimated cancer risk exceeds one in one million. References which discuss the acute and chronic risk assessments in more detail are available on the EPA/pesticides web site: "Available Information on Assessing Exposure from Pesticides, A User's Guide," 6/21/2000, web link: <http://www.epa.gov/fedrgstr/EPA-PEST/2000/July/Day-12/6061.pdf>; or see SOP 99.6 (8/20/99).

Spirotetramat is a new active ingredient. Therefore, this document presents the first dietary risk assessment for spirotetramat conducted by HED.

II. Residue Information

Residues of Concern: The nature of the residue in plants, rotational crops, and livestock is adequately understood based on acceptable metabolism studies conducted on apple, lettuce, cotton, potato, rotational crops, lactating goats, and laying hens. The residues of concern for the tolerance expression and risk assessment for plant commodities are spirotetramat and its metabolites BYI 08330-enol, BYI 08330-ketohydroxy, BYI08330-enol-Glc, and BYI 08330-mono-hydroxy. Based on the currently proposed uses, the residues of concern for the tolerance expression for livestock commodities are spirotetramat and its metabolite BYI 08330-enol and the residues of concern for the risk assessment for livestock commodities are spirotetramat and its metabolites BYI 08330-enol and BYI 08330-enol-GA (Memo, J. Tyler *et al.*, 4/16/08; D333437).

Established Tolerances: There are currently no established U.S. tolerances for residues of spirotetramat.

Recommended Tolerances: Based on the residue chemistry data submitted with the current petition, HED recommended for establishment of the following tolerances for the combined residues of spirotetramat and its metabolites BYI 08330-enol, BYI 08330-ketohydroxy, BYI08330-enol-Glc, and BYI 08330-mono-hydroxy expressed as spirotetramat equivalents in plant commodities and for the combined residues of spirotetramat and its metabolite BYI 08330-enol expressed as spirotetramat equivalents in livestock commodities (G. Kramer, 4/17/08; DP# 339694):

Table 1. Tolerance Summary for Spirotetramat.		
Commodity	Recommended Tolerance (ppm)	Correct Commodity Definition
Citrus, crop group 10	0.60	Fruit, citrus, group 10
Citrus, oil	6.0	
Leafy vegetables, crop group 4	9.0	Vegetable, leafy, except <i>Brassica</i> , group 4
Pome fruit, crop group 11	0.70	Fruit, pome, group 11
Apple pomace, wet	-	
Stone fruit, crop group 12	4.5	Fruit, stone, group 12
Grape, wine and table grape, Crop Group 13F	1.3	Small fruit vine climbing subgroup, except fuzzy kiwifruit, subgroup 13-07F
Grapes, raisins	3.0	Grape, raisin
Strawberry	0.40	
Bulb vegetables, onion, crop group 3A	0.30	Onion, bulb, subgroup 3A-07
Fruiting vegetables, crop group 8	2.5	Vegetable, fruiting, group 8
Tomato, dried	-	
Cucurbits, crop group 9	0.30	Vegetable, cucurbit, group 9
<i>Brassica</i> , head and stem, crop group 5A	2.5	<i>Brassica</i> , head and stem, subgroup 5A
Leafy <i>Brassica</i> , crop group 5B	8.0	<i>Brassica</i> , leafy greens, subgroup 5B
Potato, crop group 1C	0.60	Vegetable, tuberous and corm, subgroup 1C
Potato, flakes	1.6	
Tree Nuts, Crop Group 14	0.25	Nut, tree, group 14
Almond, hulls	9.0	
Hop (dried cones)	10	Hop, dried cones
Milk	0.01	
Cattle, meat	0.02	
Cattle, fat	0.02	
Cattle, liver	-	
Cattle, meat by products, except liver	0.02	Cattle, meat byproducts
Goat, meat	0.02	
Goat, fat	0.02	
Goat, liver		
Goat, meat by products, except liver	0.02	Goat, meat byproducts
Hog, meat	-	
Hog, fat	-	
Hog, liver	-	
Hog, meat by products, except liver	-	
Sheep, meat	0.02	

Commodity	Recommended Tolerance (ppm)	Correct Commodity Definition
Sheep, fat	0.02	
Sheep, liver	-	
Sheep, meat by products, except liver	0.02	Sheep, meat byproducts
Horse, meat	0.02	
Horse, fat	0.02	
Horse, liver	-	
Horse, meat by products, except liver	0.02	Horse, meat byproducts

Residue Data Used for Acute and Chronic Assessments: Both the acute and chronic assessments were based on the assumption of recommended tolerance-level residues and 100% CT for all commodities. The residue levels for livestock commodities were not adjusted for the additional metabolite of concern for the risk assessment (BYI 08330-enol-GA) as the tolerance-level values are sufficient to cover the total residues of spirotetramat, BYI 08330-enol, and BYI 08330-enol-GA (G. Kramer, 4/17/08; DP# 339694).

Processing Factors: DEEM™ 7.81 default processing factors were used for all processed commodities (where provided).

III. Drinking Water Data

The drinking water residues used in the dietary risk assessment were provided by EFED (DP # 345275, J. Meléndez, 1/22/08). Exposure to surface water is possible through surface water runoff, soil erosion and/or off-target spray drift. The mobility of spirotetramat is relatively high [K_d range 3.58-5.52 mL/g, K_{OC} range 184-437 mL/g_{OC} (moderately mobile)]; however, spirotetramat is labile under many conditions (especially, under aerobic soil metabolism conditions). The Tier I EDWCs for spirotetramat and for its major transformation products spirotetramat-enol and spirotetramat-ketohydroxy, calculated using FIRST (surface water, applications to Christmas trees) and SCI-GROW (groundwater, applications to pome fruits) were as follows: For spirotetramat surface water, the acute value is 0.208 ppb and the chronic value is 1.1×10^{-3} ppb. The groundwater screening concentration for both acute and chronic is 2.25×10^{-5} ppb. For spirotetramat-enol surface water, the acute value is 8.0×10^{-5} ppb and the chronic value is 1.7×10^{-5} ppb. The groundwater screening concentration for both acute and chronic is 1.64×10^{-5} ppb. For spirotetramat-ketohydroxy surface water, the acute value is 3.60×10^{-3} ppb and the chronic value is 2.50×10^{-4} ppb. The groundwater screening concentration for both acute and chronic is 3.57×10^{-4} ppb. For the total residues (spirotetramat and transformation products of concern), in surface water, the acute value is 0.212 ppb and the chronic value is 1.37×10^{-3} ppb. The groundwater screening concentration for both acute and chronic is 3.96×10^{-4} ppb.

Water residues (surface water EDWCs) were incorporated in DEEM-FCID into the food categories “water, direct, all sources” and “water, indirect, all sources” for both the acute and chronic assessment.

IV. DEEM-FCID™ Program and Consumption Information

Spirotetramat acute and chronic dietary exposure assessments were conducted using DEEM-FCID™, Version 2.03, which incorporates consumption data from USDA's CSFII, 1994-1996 and 1998. The 1994-96, 98 data are based on the reported consumption of more than 20,000 individuals over two non-consecutive survey days. Foods "as consumed" (e.g., apple pie) are linked to EPA-defined food commodities (e.g. apples, peeled fruit - cooked; fresh or N/S; baked; or wheat flour - cooked; fresh or N/S, baked) using publicly available recipe translation files developed jointly by USDA/ARS and EPA. For chronic exposure assessment, consumption data are averaged for the entire U.S. population and within population subgroups, but for acute exposure assessment are retained as individual consumption events. Based on analysis of the 1994-96, 98 CSFII consumption data, which took into account dietary patterns and survey respondents, HED concluded that it is most appropriate to report risk for the following population subgroups: the general U.S. population, all infants (<1 year old), children 1-2, children 3-5, children 6-12, youth 13-19, adults 20-49, females 13-49, and adults 50+ years old.

For chronic dietary exposure assessment, an estimate of the residue level in each food or food-form (e.g., orange or orange juice) on the food commodity residue list is multiplied by the average daily consumption estimate for that food/food form to produce a residue intake estimate. The resulting residue intake estimate for each food/food form is summed with the residue intake estimates for all other food/food forms on the commodity residue list to arrive at the total average estimated exposure. Exposure is expressed in mg/kg body weight/day and as a percent of the cPAD. This procedure is performed for each population subgroup.

For acute exposure assessments, individual one-day food consumption data are used on an individual-by-individual basis. The reported consumption amounts of each food item can be multiplied by a residue point estimate and summed to obtain a total daily pesticide exposure for a deterministic exposure assessment, or "matched" in multiple random pairings with residue values and then summed in a probabilistic assessment. The resulting distribution of exposures is expressed as a percentage of the aPAD on both a user (i.e., only those who reported eating relevant commodities/food forms) and a per-capita (i.e., those who reported eating the relevant commodities as well as those who did not) basis. In accordance with HED policy, per capita exposure and risk are reported for all tiers of analysis. However, for Tiers 1 and 2, any significant differences in user vs. per capita exposure and risk are specifically identified and noted in the risk assessment.

V. Toxicological Information

Table 2. Summary of Toxicological Doses and Endpoints for Spirotetramat for Use in Dietary Human Health Risk Assessments.

Exposure Scenario	Point of Departure	Uncertainty/FQPA Safety Factors	RfD, PAD, LOC for Risk Assessment	Study and Relevant Toxicological Effects
Acute Dietary (General Population, including Infants and Children)	NOAEL = 100 mg/kg	UF _A = 10X UF _H = 10X UF _{FQPA} = 1X	aRfD = aPAD = 1 mg/kg	Acute neurotoxicity (rat; gavage) LOAEL = 200 mg/kg based on clinical signs (M&F) and decreased motor activity (M).
Chronic Dietary (All populations)	NOAEL = 5 mg/kg/day	UF _A = 10X UF _H = 10X UF _{FQPA} = 1X	cRfD = cPAD = 0.05mg/kg/day	Chronic toxicity (dog; dietary) LOAEL = 20 mg/kg/day (M) based on thymus involution.
Cancer (oral, dermal, inhalation)	Classification: "Not Likely to be Carcinogenic to Humans" based on lack of evidence of carcinogenicity in two oral rodent carcinogenicity studies.			

Abbreviations: UF = uncertainty factor, UF_A = extrapolation from animal to human (interspecies), UF_H = potential variation in sensitivity among members of the human population (intraspecies), UF_{FQPA} = FQPA Safety Factor, NOAEL = no-observed adverse-effect level, LOAEL = lowest-observed adverse-effect level, RfD = reference dose (a = acute, c = chronic), PAD = population-adjusted dose, MOE = margin of exposure, LOC = level of concern.

VI. Results/Discussion

For acute and chronic assessments, HED is concerned when dietary risk exceeds 100% of the PAD. The DEEM-FCID™ analyses estimate the dietary exposure of the U.S. population and various population subgroups. The results reported in Table 3 are for the general U.S. population, all infants (<1 year old), children 1-2, children 3-5, children 6-12, youth 13-19, females 13-49, adults 20-49, and adults 50+ years.

Results of Acute and Chronic Dietary Exposure Analyses

The acute dietary exposure for food and drinking water utilized 4% of the aPAD for the U.S. population. The acute dietary exposure for the highest reported exposed population subgroup, children 1-2 years old, was 10% of the aPAD.

The chronic dietary exposure for food and drinking water utilized 28% of the cPAD for the U.S. population. The chronic dietary exposure for the highest reported exposed population subgroup, children 1-2 years old, was 77% of the cPAD.

Spirotetramat was classified as "Not likely to be carcinogenic to humans;" therefore, a cancer dietary assessment was not performed.

The results of the acute and chronic dietary exposure analyses are reported in Table 3.

Table 3. Summary of Dietary (Food and Drinking Water) Exposure Risk for Spirotetramat.				
Population Subgroup	Acute Dietary (95 th Percentile)		Chronic Dietary	
	Dietary Exposure (mg/kg/day)	% aPAD	Dietary Exposure (mg/kg/day)	% cPAD
General U.S. Population	0.042364	4.2	0.013768	28
All Infants (<1 year old)	0.081433	8.1	0.019464	39
Children 1-2 years old	0.102892	10	0.038373	77
Children 3-5 years old	0.080506	8.1	0.029638	59
Children 6-12 years old	0.050723	5.1	0.018032	36
Youth 13-19 years old	0.035371	3.5	0.011795	24
Adults 20-49 years old	0.033504	3.4	0.011145	22
Adults 50+ years old	0.033253	3.3	0.011139	22
Females 13-49 years old	0.033564	3.4	0.011180	22

*The values for the highest exposed population for each type of risk assessment are bolded.

These analyses are considered to be very conservative dietary exposure assessments. Residues in foods were assumed to be equivalent to the tolerance levels. Tolerance-level residues should always exceed the residue levels found on food commodities at the time of consumption. When field trials are performed, the maximum allowable application rate is used and crops are harvested at the minimum PHI. Samples are stored frozen until analysis to ensure minimal degradation of residues. In actual practice, however, growers will not usually use the maximum application rates for economic reasons. In addition, most crops are not harvested and immediately stored frozen. Also, 100% CT was assumed. For these reasons, HED is confident that this analysis does not underestimate risk to the general U.S. population or any population subgroup. Further refinement to the analyses could be made through the use of anticipated residues, empirical processing factors, and incorporation of percentages of crops treated with spirotetramat. Since risk estimates are not of concern to HED, a more highly refined analysis is not needed at this time.

VII. Conclusions

Acute and chronic dietary exposure and risk assessments were conducted for the proposed food uses and permanent tolerances of spirotetramat, including potential exposure from drinking water.

The acute dietary (food + drinking water) exposure to spirotetramat is below HED’s level of concern for the general U.S. population and all population subgroups. The acute dietary

exposure for the highest reported exposed population subgroup, children 1-2 years old, was 10% of the aPAD.

The chronic dietary (food + drinking water) exposure to spirotetramat is below HED's level of concern for the general U.S. population and all population subgroups. The chronic dietary exposure utilized 28% cPAD for the general U.S. population and 77% of the cPAD for children 1-2 years old, the most highly exposed population subgroup.

VIII. List of Attachments

- Attachment 1: Acute Food plus Water Residue Input File
- Attachment 2: Acute Results File
- Attachment 3: Chronic Food plus Water Residue Input File
- Attachment 4: Chronic Results File

Attachment 1: Acute Food plus Water Residue Input File

U.S. Environmental Protection Agency
DEEM-FCID Acute analysis for SPIROTETRAMAT
Residue file name: C:\Documents and
Settings\gkramer\GK\##SPIROTETRAMAT\Spirotetramataacute.R98
Analysis Date 04-11-2008 Residue file dated: 04-11-2008/11:05:45/8
Reference dose (aRfD) = 1 mg/kg bw/day
Comment: + emp proc fact

Ver. 2.02

EPA Code	Crop Grp	Food Name	Def Res (ppm)	Adj.Factors		Comment
				#1	#2	
14000030	14	Almond	0.250000	1.000	1.000	
14000031	14	Almond-babyfood	0.250000	1.000	1.000	
14000040	14	Almond, oil	0.250000	1.000	1.000	
14000041	14	Almond, oil-babyfood	0.250000	1.000	1.000	
04010050	4A	Amaranth, leafy	9.000000	1.000	1.000	
11000070	11	Apple, fruit with peel	0.700000	1.000	1.000	
11000080	11	Apple, peeled fruit	0.700000	1.000	1.000	
11000081	11	Apple, peeled fruit-babyfood	0.700000	1.000	1.000	
11000090	11	Apple, dried	0.700000	8.000	1.000	
11000091	11	Apple, dried-babyfood	0.700000	8.000	1.000	
11000100	11	Apple, juice	0.700000	1.300	1.000	
11000101	11	Apple, juice-babyfood	0.700000	1.300	1.000	
11000110	11	Apple, sauce	0.700000	1.000	1.000	
11000111	11	Apple, sauce-babyfood	0.700000	1.000	1.000	
12000120	12	Apricot	4.500000	1.000	1.000	
12000121	12	Apricot-babyfood	4.500000	1.000	1.000	
12000130	12	Apricot, dried	4.500000	6.000	1.000	
12000140	12	Apricot, juice	4.500000	1.000	1.000	
12000141	12	Apricot, juice-babyfood	4.500000	1.000	1.000	
01030150	1CD	Arrowroot, flour	0.600000	1.000	1.000	
01030151	1CD	Arrowroot, flour-babyfood	0.600000	1.000	1.000	
01030170	1CD	Artichoke, Jerusalem	0.600000	1.000	1.000	
04010180	4A	Arugula	9.000000	1.000	1.000	
09020210	9B	Balsam pear	0.300000	1.000	1.000	
21000440	M	Beef, meat	0.020000	1.000	1.000	
21000441	M	Beef, meat-babyfood	0.020000	1.000	1.000	
21000450	M	Beef, meat, dried	0.020000	1.920	1.000	
21000460	M	Beef, meat byproducts	0.020000	1.000	1.000	
21000461	M	Beef, meat byproducts-babyfood	0.020000	1.000	1.000	
21000470	M	Beef, fat	0.020000	1.000	1.000	
21000471	M	Beef, fat-babyfood	0.020000	1.000	1.000	
21000480	M	Beef, kidney	0.020000	1.000	1.000	
21000490	M	Beef, liver	0.020000	1.000	1.000	
21000491	M	Beef, liver-babyfood	0.020000	1.000	1.000	
14000590	14	Brazil nut	0.250000	1.000	1.000	
05010610	5A	Broccoli	2.500000	1.000	1.000	
05010611	5A	Broccoli-babyfood	2.500000	1.000	1.000	
05010620	5A	Broccoli, Chinese	2.500000	1.000	1.000	
05020630	5B	Broccoli raab	8.000000	1.000	1.000	
05010640	5A	Brussels sprouts	2.500000	1.000	1.000	
14000680	14	Butternut	0.250000	1.000	1.000	
05010690	5A	Cabbage	2.500000	1.000	1.000	
05020700	5B	Cabbage, Chinese, bok choy	8.000000	1.000	1.000	
05010710	5A	Cabbage, Chinese, napa	2.500000	1.000	1.000	
05010720	5A	Cabbage, Chinese, mustard	2.500000	1.000	1.000	
09010750	9A	Cantaloupe	0.300000	1.000	1.000	
04020760	4B	Cardoon	9.000000	1.000	1.000	
09010800	9A	Casaba	0.300000	1.000	1.000	
14000810	14	Cashew	0.250000	1.000	1.000	
01030820	1CD	Cassava	0.600000	1.000	1.000	
01030821	1CD	Cassava-babyfood	0.600000	1.000	1.000	
05010830	5A	Cauliflower	2.500000	1.000	1.000	
04020850	4B	Celery	9.000000	1.000	1.000	

04020851	4B	Celery-babyfood	9.000000	1.000	1.000
04020860	4B	Celery, juice	9.000000	1.000	1.000
04020870	4B	Celtuce	9.000000	1.000	1.000
09020880	9B	Chayote, fruit	0.300000	1.000	1.000
12000900	12	Cherry	4.500000	1.000	1.000
12000901	12	Cherry-babyfood	4.500000	1.000	1.000
12000910	12	Cherry, juice	4.500000	1.500	1.000
12000911	12	Cherry, juice-babyfood	4.500000	1.500	1.000
14000920	14	Chestnut	0.250000	1.000	1.000
09021020	9B	Chinese waxgourd	0.300000	1.000	1.000
04011040	4A	Chrysanthemum, garland	9.000000	1.000	1.000
10001060	10	Citrus citron	0.600000	1.000	1.000
10001070	10	Citrus hybrids	0.600000	1.000	1.000
10001080	10	Citrus, oil	6.000000	1.000	1.000
05021170	5B	Collards	8.000000	1.000	1.000
11001290	11	Crabapple	0.700000	1.000	1.000
04011330	4A	Cress, garden	9.000000	1.000	1.000
04011340	4A	Cress, upland	9.000000	1.000	1.000
09021350	9B	Cucumber	0.300000	1.000	1.000
04011380	4A	Dandelion, leaves	9.000000	1.000	1.000
01031390	1CD	Dasheen, corm	0.600000	1.000	1.000
08001480	8	Eggplant	2.500000	1.000	1.000
04011500	4A	Endive	9.000000	1.000	1.000
04021520	4B	Fennel, Florence	9.000000	1.000	1.000
14001550	14	Filbert	0.250000	1.000	1.000
14001560	14	Filbert, oil	0.250000	1.000	1.000
03001640	3	Garlic	0.300000	1.000	1.000
03001650	3	Garlic, dried	0.300000	1.000	1.000
03001651	3	Garlic, dried-babyfood	0.300000	1.000	1.000
01031660	1CD	Ginger	0.600000	1.000	1.000
01031661	1CD	Ginger-babyfood	0.600000	1.000	1.000
01031670	1CD	Ginger, dried	0.600000	1.000	1.000
23001690	M	Goat, meat	0.020000	1.000	1.000
23001700	M	Goat, meat byproducts	0.020000	1.000	1.000
23001710	M	Goat, fat	0.020000	1.000	1.000
23001720	M	Goat, kidney	0.020000	1.000	1.000
23001730	M	Goat, liver	0.020000	1.000	1.000
13021740	13B	Gooseberry	1.300000	1.000	1.000
95001750	O	Grape	1.300000	1.000	1.000
95001760	O	Grape, juice	1.300000	1.200	1.000
95001761	O	Grape, juice-babyfood	1.300000	1.200	1.000
95001770	O	Grape, leaves	1.300000	1.000	1.000
95001780	O	Grape, raisin	3.000000	1.000	1.000
95001790	O	Grape, wine and sherry	1.300000	1.000	1.000
10001800	10	Grapefruit	0.600000	1.000	1.000
10001810	10	Grapefruit, juice	0.600000	2.100	1.000
14001850	14	Hickory nut	0.250000	1.000	1.000
09011870	9A	Honeydew melon	0.300000	1.000	1.000
95001880	O	Hop	10.000000	1.000	1.000
24001890	M	Horse, meat	0.020000	1.000	1.000
05021940	5B	Kale	8.000000	1.000	1.000
05011960	5A	Kohlrabi	2.500000	1.000	1.000
10001970	10	Kumquat	0.600000	1.000	1.000
10001990	10	Lemon	0.600000	1.000	1.000
10002000	10	Lemon, juice	0.600000	2.000	1.000
10002001	10	Lemon, juice-babyfood	0.600000	2.000	1.000
10002010	10	Lemon, peel	0.600000	1.000	1.000
04012040	4A	Lettuce, head	9.000000	1.000	1.000
04012050	4A	Lettuce, leaf	9.000000	1.000	1.000
10002060	10	Lime	0.600000	1.000	1.000
10002070	10	Lime, juice	0.600000	2.000	1.000
10002071	10	Lime, juice-babyfood	0.600000	2.000	1.000
11002100	11	Loquat	0.700000	1.000	1.000
14002130	14	Macadamia nut	0.250000	1.000	1.000
28002210	M	Meat, game	0.020000	1.000	1.000
27002220	D	Milk, fat	0.010000	1.000	1.000
27002221	D	Milk, fat - baby food/infant for	0.010000	1.000	1.000

27012230	D	Milk, nonfat solids	0.010000	1.000	1.000
27012231	D	Milk, nonfat solids-baby food/in	0.010000	1.000	1.000
27022240	D	Milk, water	0.010000	1.000	1.000
27022241	D	Milk, water-babyfood/infant form	0.010000	1.000	1.000
27032251	D	Milk, sugar (lactose)-baby food/	0.010000	1.000	1.000
05022290	5B	Mustard greens	8.000000	1.000	1.000
12002300	12	Nectarine	4.500000	1.000	1.000
08002340	8	Okra	2.500000	1.000	1.000
03002370	3	Onion, dry bulb	0.300000	1.000	1.000
03002371	3	Onion, dry bulb-babyfood	0.300000	1.000	1.000
03002380	3	Onion, dry bulb, dried	0.300000	9.000	1.000
03002381	3	Onion, dry bulb, dried-babyfood	0.300000	9.000	1.000
10002400	10	Orange	0.600000	1.000	1.000
10002410	10	Orange, juice	0.600000	1.800	1.000
10002411	10	Orange, juice-babyfood	0.600000	1.800	1.000
10002420	10	Orange, peel	0.600000	1.000	1.000
04012480	4A	Parsley, leaves	9.000000	1.000	1.000
12002600	12	Peach	4.500000	1.000	1.000
12002601	12	Peach-babyfood	4.500000	1.000	1.000
12002610	12	Peach, dried	4.500000	7.000	1.000
12002611	12	Peach, dried-babyfood	4.500000	7.000	1.000
12002620	12	Peach, juice	4.500000	1.000	1.000
12002621	12	Peach, juice-babyfood	4.500000	1.000	1.000
11002660	11	Pear	0.700000	1.000	1.000
11002661	11	Pear-babyfood	0.700000	1.000	1.000
11002670	11	Pear, dried	0.700000	6.250	1.000
11002680	11	Pear, juice	0.700000	1.000	1.000
11002681	11	Pear, juice-babyfood	0.700000	1.000	1.000
14002690	14	Pecan	0.250000	1.000	1.000
08002700	8	Pepper, bell	2.500000	1.000	1.000
08002701	8	Pepper, bell-babyfood	2.500000	1.000	1.000
08002710	8	Pepper, bell, dried	2.500000	1.000	1.000
08002711	8	Pepper, bell, dried-babyfood	2.500000	1.000	1.000
08002720	8	Pepper, nonbell	2.500000	1.000	1.000
08002721	8	Pepper, nonbell-babyfood	2.500000	1.000	1.000
08002730	8	Pepper, nonbell, dried	2.500000	1.000	1.000
14002820	14	Pistachio	0.250000	1.000	1.000
12002850	12	Plum	4.500000	1.000	1.000
12002851	12	Plum-babyfood	4.500000	1.000	1.000
12002860	12	Plum, prune, fresh	4.500000	1.000	1.000
12002861	12	Plum, prune, fresh-babyfood	4.500000	1.000	1.000
12002870	12	Plum, prune, dried	4.500000	5.000	1.000
12002871	12	Plum, prune, dried-babyfood	4.500000	5.000	1.000
12002880	12	Plum, prune, juice	4.500000	1.400	1.000
12002881	12	Plum, prune, juice-babyfood	4.500000	1.400	1.000
01032960	1C	Potato, chips	0.600000	6.500	1.000
01032970	1C	Potato, dry (granules/ flakes)	1.600000	1.000	1.000
01032971	1C	Potato, dry (granules/ flakes)-b	1.600000	1.000	1.000
01032980	1C	Potato, flour	1.600000	1.000	1.000
01032981	1C	Potato, flour-babyfood	1.600000	1.000	1.000
01032990	1C	Potato, tuber, w/peel	0.600000	1.000	1.000
01032991	1C	Potato, tuber, w/peel-babyfood	0.600000	1.000	1.000
01033000	1C	Potato, tuber, w/o peel	0.600000	1.000	1.000
01033001	1C	Potato, tuber, w/o peel-babyfood	0.600000	1.000	1.000
10003070	10	Pummelo	0.600000	1.000	1.000
09023080	9B	Pumpkin	0.300000	1.000	1.000
09023090	9B	Pumpkin, seed	0.300000	1.000	1.000
11003100	11	Quince	0.700000	1.000	1.000
04013130	4A	Radicchio	9.000000	1.000	1.000
05023180	5B	Rape greens	8.000000	1.000	1.000
04023220	4B	Rhubarb	9.000000	1.000	1.000
03003380	3	Shallot	0.300000	1.000	1.000
26003390	M	Sheep, meat	0.020000	1.000	1.000
26003391	M	Sheep, meat-babyfood	0.020000	1.000	1.000
26003400	M	Sheep, meat byproducts	0.020000	1.000	1.000
26003410	M	Sheep, fat	0.020000	1.000	1.000
26003411	M	Sheep, fat-babyfood	0.020000	1.000	1.000

26003420	M	Sheep, kidney	0.020000	1.000	1.000
26003430	M	Sheep, liver	0.020000	1.000	1.000
04013550	4A	Spinach	9.000000	1.000	1.000
04013551	4A	Spinach-babyfood	9.000000	1.000	1.000
09023560	9B	Squash, summer	0.300000	1.000	1.000
09023561	9B	Squash, summer-babyfood	0.300000	1.000	1.000
09023570	9B	Squash, winter	0.300000	1.000	1.000
09023571	9B	Squash, winter-babyfood	0.300000	1.000	1.000
95003590	O	Strawberry	0.400000	1.000	1.000
95003591	O	Strawberry-babyfood	0.400000	1.000	1.000
95003600	O	Strawberry, juice	0.400000	1.000	1.000
95003601	O	Strawberry, juice-babyfood	0.400000	1.000	1.000
01033660	1CD	Sweet potato	0.600000	1.000	1.000
01033661	1CD	Sweet potato-babyfood	0.600000	1.000	1.000
04023670	4B	Swiss chard	9.000000	1.000	1.000
10003690	10	Tangerine	0.600000	1.000	1.000
10003700	10	Tangerine, juice	0.600000	2.300	1.000
01033710	1CD	Tanier, corm	0.600000	1.000	1.000
08003740	8	Tomatillo	2.500000	1.000	1.000
08003750	8	Tomato	2.500000	1.000	1.000
08003751	8	Tomato-babyfood	2.500000	1.000	1.000
08003760	8	Tomato, paste	2.500000	5.400	1.000
08003761	8	Tomato, paste-babyfood	2.500000	5.400	1.000
08003770	8	Tomato, puree	2.500000	3.300	1.000
08003771	8	Tomato, puree-babyfood	2.500000	3.300	1.000
08003780	8	Tomato, dried	2.500000	14.300	1.000
08003781	8	Tomato, dried-babyfood	2.500000	14.300	1.000
08003790	8	Tomato, juice	2.500000	1.500	1.000
01033870	1CD	Turmeric	0.600000	1.000	1.000
05023890	5B	Turnip, greens	8.000000	1.000	1.000
14003910	14	Walnut	0.250000	1.000	1.000
86010000	O	Water, direct, all sources	0.000212	1.000	1.000
86020000	O	Water, indirect, all sources	0.000212	1.000	1.000
09013990	9A	Watermelon	0.300000	1.000	1.000
09014000	9A	Watermelon, juice	0.300000	1.000	1.000
01034060	1CD	Yam, true	0.600000	1.000	1.000
01034070	1CD	Yam bean	0.600000	1.000	1.000

Attachment 2: Acute Results File

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for SPIROTETRAMAT (1994-98 data)
 Residue file: Spirotetramataacute.R98 Adjustment factor #2 used.
 Analysis Date: 04-11-2008/11:06:43 Residue file dated: 04-11-2008/11:05:45/8
 Daily totals for food and foodform consumption used.
 Run Comment: "+ emp proc fact"

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.042364	4.24	0.075058	7.51	0.150682	15.07
All infants:	0.081433	8.14	0.137192	13.72	0.226737	22.67
Children 1-2 yrs:	0.102892	10.29	0.157398	15.74	0.348357	34.84
Children 3-5 yrs:	0.080506	8.05	0.127017	12.70	0.214229	21.42
Children 6-12 yrs:	0.050723	5.07	0.084724	8.47	0.145681	14.57
Youth 13-19 yrs:	0.035371	3.54	0.051140	5.11	0.094282	9.43
Adults 20-49 yrs:	0.033504	3.35	0.052050	5.20	0.086105	8.61
Adults 50+ yrs:	0.033253	3.33	0.052226	5.22	0.073776	7.38
Females 13-49 yrs:	0.033564	3.36	0.049652	4.97	0.071191	7.12

Attachment 3: Chronic Food plus Water Residue Input File

U.S. Environmental Protection Agency Ver. 2.00
 DEEM-FCID Chronic analysis for SPIROTETRAMAT 1994-98 data
 Residue file: C:\Documents and Settings\gkramer\GK\##SPIROTETRAMAT\Spirotetramatchronic.R98
 Adjust. #2 used
 Analysis Date 04-11-2008 Residue file dated: 04-11-2008/10:56:38/8
 Reference dose (RfD) = 0.05 mg/kg bw/day

Food Crop EPA Code	Grp	Food Name	Residue (ppm)	Adj. Factors		Comment
				#1	#2	
14000030	14	Almond	0.250000	1.000	1.000	
14000031	14	Almond-babyfood	0.250000	1.000	1.000	
14000040	14	Almond, oil	0.250000	1.000	1.000	
14000041	14	Almond, oil-babyfood	0.250000	1.000	1.000	
04010050	4A	Amaranth, leafy	9.000000	1.000	1.000	
11000070	11	Apple, fruit with peel	0.700000	1.000	1.000	
11000080	11	Apple, peeled fruit	0.700000	1.000	1.000	
11000081	11	Apple, peeled fruit-babyfood	0.700000	1.000	1.000	
11000090	11	Apple, dried	0.700000	8.000	1.000	
11000091	11	Apple, dried-babyfood	0.700000	8.000	1.000	
11000100	11	Apple, juice	0.700000	1.300	1.000	
11000101	11	Apple, juice-babyfood	0.700000	1.300	1.000	
11000110	11	Apple, sauce	0.700000	1.000	1.000	
11000111	11	Apple, sauce-babyfood	0.700000	1.000	1.000	
12000120	12	Apricot	4.500000	1.000	1.000	
12000121	12	Apricot-babyfood	4.500000	1.000	1.000	
12000130	12	Apricot, dried	4.500000	6.000	1.000	
12000140	12	Apricot, juice	4.500000	1.000	1.000	
12000141	12	Apricot, juice-babyfood	4.500000	1.000	1.000	
01030150	1CD	Arrowroot, flour	0.600000	1.000	1.000	
01030151	1CD	Arrowroot, flour-babyfood	0.600000	1.000	1.000	
01030170	1CD	Artichoke, Jerusalem	0.600000	1.000	1.000	
04010180	4A	Arugula	9.000000	1.000	1.000	
09020210	9B	Balsam pear	0.300000	1.000	1.000	
21000440	M	Beef, meat	0.020000	1.000	1.000	
21000441	M	Beef, meat-babyfood	0.020000	1.000	1.000	
21000450	M	Beef, meat, dried	0.020000	1.920	1.000	
21000460	M	Beef, meat byproducts	0.020000	1.000	1.000	
21000461	M	Beef, meat byproducts-babyfood	0.020000	1.000	1.000	
21000470	M	Beef, fat	0.020000	1.000	1.000	
21000471	M	Beef, fat-babyfood	0.020000	1.000	1.000	
21000480	M	Beef, kidney	0.020000	1.000	1.000	
21000490	M	Beef, liver	0.020000	1.000	1.000	
21000491	M	Beef, liver-babyfood	0.020000	1.000	1.000	
14000590	14	Brazil nut	0.250000	1.000	1.000	
05010610	5A	Broccoli	2.500000	1.000	1.000	
05010611	5A	Broccoli-babyfood	2.500000	1.000	1.000	
05010620	5A	Broccoli, Chinese	2.500000	1.000	1.000	
05020630	5B	Broccoli raab	8.000000	1.000	1.000	
05010640	5A	Brussels sprouts	2.500000	1.000	1.000	
14000680	14	Butternut	0.250000	1.000	1.000	
05010690	5A	Cabbage	2.500000	1.000	1.000	
05020700	5B	Cabbage, Chinese, bok choy	8.000000	1.000	1.000	
05010710	5A	Cabbage, Chinese, napa	2.500000	1.000	1.000	
05010720	5A	Cabbage, Chinese, mustard	2.500000	1.000	1.000	
09010750	9A	Cantaloupe	0.300000	1.000	1.000	
04020760	4B	Cardoon	9.000000	1.000	1.000	
09010800	9A	Casaba	0.300000	1.000	1.000	
14000810	14	Cashew	0.250000	1.000	1.000	
01030820	1CD	Cassava	0.600000	1.000	1.000	
01030821	1CD	Cassava-babyfood	0.600000	1.000	1.000	
05010830	5A	Cauliflower	2.500000	1.000	1.000	

04020850	4B	Celery	9.000000	1.000	1.000
04020851	4B	Celery-babyfood	9.000000	1.000	1.000
04020860	4B	Celery, juice	9.000000	1.000	1.000
04020870	4B	Celtuce	9.000000	1.000	1.000
09020880	9B	Chayote, fruit	0.300000	1.000	1.000
12000900	12	Cherry	4.500000	1.000	1.000
12000901	12	Cherry-babyfood	4.500000	1.000	1.000
12000910	12	Cherry, juice	4.500000	1.500	1.000
12000911	12	Cherry, juice-babyfood	4.500000	1.500	1.000
14000920	14	Chestnut	0.250000	1.000	1.000
09021020	9B	Chinese waxgourd	0.300000	1.000	1.000
04011040	4A	Chrysanthemum, garland	9.000000	1.000	1.000
10001060	10	Citrus citron	0.600000	1.000	1.000
10001070	10	Citrus hybrids	0.600000	1.000	1.000
10001080	10	Citrus, oil	6.000000	1.000	1.000
05021170	5B	Collards	8.000000	1.000	1.000
11001290	11	Crabapple	0.700000	1.000	1.000
04011330	4A	Cress, garden	9.000000	1.000	1.000
04011340	4A	Cress, upland	9.000000	1.000	1.000
09021350	9B	Cucumber	0.300000	1.000	1.000
04011380	4A	Dandelion, leaves	9.000000	1.000	1.000
01031390	1CD	Dasheen, corm	0.600000	1.000	1.000
08001480	8	Eggplant	2.500000	1.000	1.000
04011500	4A	Endive	9.000000	1.000	1.000
04021520	4B	Fennel, Florence	9.000000	1.000	1.000
14001550	14	Filbert	0.250000	1.000	1.000
14001560	14	Filbert, oil	0.250000	1.000	1.000
03001640	3	Garlic	0.300000	1.000	1.000
03001650	3	Garlic, dried	0.300000	1.000	1.000
03001651	3	Garlic, dried-babyfood	0.300000	1.000	1.000
01031660	1CD	Ginger	0.600000	1.000	1.000
01031661	1CD	Ginger-babyfood	0.600000	1.000	1.000
01031670	1CD	Ginger, dried	0.600000	1.000	1.000
23001690	M	Goat, meat	0.020000	1.000	1.000
23001700	M	Goat, meat byproducts	0.020000	1.000	1.000
23001710	M	Goat, fat	0.020000	1.000	1.000
23001720	M	Goat, kidney	0.020000	1.000	1.000
23001730	M	Goat, liver	0.020000	1.000	1.000
13021740	13B	Gooseberry	1.300000	1.000	1.000
95001750	O	Grape	1.300000	1.000	1.000
95001760	O	Grape, juice	1.300000	1.200	1.000
95001761	O	Grape, juice-babyfood	1.300000	1.200	1.000
95001770	O	Grape, leaves	1.300000	1.000	1.000
95001780	O	Grape, raisin	3.000000	1.000	1.000
95001790	O	Grape, wine and sherry	1.300000	1.000	1.000
10001800	10	Grapefruit	0.600000	1.000	1.000
10001810	10	Grapefruit, juice	0.600000	2.100	1.000
14001850	14	Hickory nut	0.250000	1.000	1.000
09011870	9A	Honeydew melon	0.300000	1.000	1.000
95001880	O	Hop	10.000000	1.000	1.000
24001890	M	Horse, meat	0.020000	1.000	1.000
05021940	5B	Kale	8.000000	1.000	1.000
05011960	5A	Kohlrabi	2.500000	1.000	1.000
10001970	10	Kumquat	0.600000	1.000	1.000
10001990	10	Lemon	0.600000	1.000	1.000
10002000	10	Lemon, juice	0.600000	2.000	1.000
10002001	10	Lemon, juice-babyfood	0.600000	2.000	1.000
10002010	10	Lemon, peel	0.600000	1.000	1.000
04012040	4A	Lettuce, head	9.000000	1.000	1.000
04012050	4A	Lettuce, leaf	9.000000	1.000	1.000
10002060	10	Lime	0.600000	1.000	1.000
10002070	10	Lime, juice	0.600000	2.000	1.000
10002071	10	Lime, juice-babyfood	0.600000	2.000	1.000
11002100	11	Loquat	0.700000	1.000	1.000
14002130	14	Macadamia nut	0.250000	1.000	1.000
28002210	M	Meat, game	0.020000	1.000	1.000
27002220	D	Milk, fat	0.010000	1.000	1.000

27002221	D	Milk, fat - baby food/infant for	0.010000	1.000	1.000
27012230	D	Milk, nonfat solids	0.010000	1.000	1.000
27012231	D	Milk, nonfat solids-baby food/in	0.010000	1.000	1.000
27022240	D	Milk, water	0.010000	1.000	1.000
27022241	D	Milk, water-babyfood/infant form	0.010000	1.000	1.000
27032251	D	Milk, sugar (lactose)-baby food/	0.010000	1.000	1.000
05022290	5B	Mustard greens	8.000000	1.000	1.000
12002300	12	Nectarine	4.500000	1.000	1.000
08002340	8	Okra	2.500000	1.000	1.000
03002370	3	Onion, dry bulb	0.300000	1.000	1.000
03002371	3	Onion, dry bulb-babyfood	0.300000	1.000	1.000
03002380	3	Onion, dry bulb, dried	0.300000	9.000	1.000
03002381	3	Onion, dry bulb, dried-babyfood	0.300000	9.000	1.000
10002400	10	Orange	0.600000	1.000	1.000
10002410	10	Orange, juice	0.600000	1.800	1.000
10002411	10	Orange, juice-babyfood	0.600000	1.800	1.000
10002420	10	Orange, peel	0.600000	1.000	1.000
04012480	4A	Parsley, leaves	9.000000	1.000	1.000
12002600	12	Peach	4.500000	1.000	1.000
12002601	12	Peach-babyfood	4.500000	1.000	1.000
12002610	12	Peach, dried	4.500000	7.000	1.000
12002611	12	Peach, dried-babyfood	4.500000	7.000	1.000
12002620	12	Peach, juice	4.500000	1.000	1.000
12002621	12	Peach, juice-babyfood	4.500000	1.000	1.000
11002660	11	Pear	0.700000	1.000	1.000
11002661	11	Pear-babyfood	0.700000	1.000	1.000
11002670	11	Pear, dried	0.700000	6.250	1.000
11002680	11	Pear, juice	0.700000	1.000	1.000
11002681	11	Pear, juice-babyfood	0.700000	1.000	1.000
14002690	14	Pecan	0.250000	1.000	1.000
08002700	8	Pepper, bell	2.500000	1.000	1.000
08002701	8	Pepper, bell-babyfood	2.500000	1.000	1.000
08002710	8	Pepper, bell, dried	2.500000	1.000	1.000
08002711	8	Pepper, bell, dried-babyfood	2.500000	1.000	1.000
08002720	8	Pepper, nonbell	2.500000	1.000	1.000
08002721	8	Pepper, nonbell-babyfood	2.500000	1.000	1.000
08002730	8	Pepper, nonbell, dried	2.500000	1.000	1.000
14002820	14	Pistachio	0.250000	1.000	1.000
12002850	12	Plum	4.500000	1.000	1.000
12002851	12	Plum-babyfood	4.500000	1.000	1.000
12002860	12	Plum, prune, fresh	4.500000	1.000	1.000
12002861	12	Plum, prune, fresh-babyfood	4.500000	1.000	1.000
12002870	12	Plum, prune, dried	4.500000	5.000	1.000
12002871	12	Plum, prune, dried-babyfood	4.500000	5.000	1.000
12002880	12	Plum, prune, juice	4.500000	1.400	1.000
12002881	12	Plum, prune, juice-babyfood	4.500000	1.400	1.000
01032960	1C	Potato, chips	0.600000	6.500	1.000
01032970	1C	Potato, dry (granules/ flakes)	1.600000	1.000	1.000
01032971	1C	Potato, dry (granules/ flakes)-b	1.600000	1.000	1.000
01032980	1C	Potato, flour	1.600000	1.000	1.000
01032981	1C	Potato, flour-babyfood	1.600000	1.000	1.000
01032990	1C	Potato, tuber, w/peel	0.600000	1.000	1.000
01032991	1C	Potato, tuber, w/peel-babyfood	0.600000	1.000	1.000
01033000	1C	Potato, tuber, w/o peel	0.600000	1.000	1.000
01033001	1C	Potato, tuber, w/o peel-babyfood	0.600000	1.000	1.000
10003070	10	Pummelo	0.600000	1.000	1.000
09023080	9B	Pumpkin	0.300000	1.000	1.000
09023090	9B	Pumpkin, seed	0.300000	1.000	1.000
11003100	11	Quince	0.700000	1.000	1.000
04013130	4A	Radicchio	9.000000	1.000	1.000
05023180	5B	Rape greens	8.000000	1.000	1.000
04023220	4B	Rhubarb	9.000000	1.000	1.000
03003380	3	Shallot	0.300000	1.000	1.000
26003390	M	Sheep, meat	0.020000	1.000	1.000
26003391	M	Sheep, meat-babyfood	0.020000	1.000	1.000
26003400	M	Sheep, meat byproducts	0.020000	1.000	1.000
26003410	M	Sheep, fat	0.020000	1.000	1.000

26003411	M	Sheep, fat-babyfood	0.020000	1.000	1.000
26003420	M	Sheep, kidney	0.020000	1.000	1.000
26003430	M	Sheep, liver	0.020000	1.000	1.000
04013550	4A	Spinach	9.000000	1.000	1.000
04013551	4A	Spinach-babyfood	9.000000	1.000	1.000
09023560	9B	Squash, summer	0.300000	1.000	1.000
09023561	9B	Squash, summer-babyfood	0.300000	1.000	1.000
09023570	9B	Squash, winter	0.300000	1.000	1.000
09023571	9B	Squash, winter-babyfood	0.300000	1.000	1.000
95003590	O	Strawberry	0.400000	1.000	1.000
95003591	O	Strawberry-babyfood	0.400000	1.000	1.000
95003600	O	Strawberry, juice	0.400000	1.000	1.000
95003601	O	Strawberry, juice-babyfood	0.400000	1.000	1.000
01033660	1CD	Sweet potato	0.600000	1.000	1.000
01033661	1CD	Sweet potato-babyfood	0.600000	1.000	1.000
04023670	4B	Swiss chard	9.000000	1.000	1.000
10003690	10	Tangerine	0.600000	1.000	1.000
10003700	10	Tangerine, juice	0.600000	2.300	1.000
01033710	1CD	Tanier, corm	0.600000	1.000	1.000
08003740	8	Tomatillo	2.500000	1.000	1.000
08003750	8	Tomato	2.500000	1.000	1.000
08003751	8	Tomato-babyfood	2.500000	1.000	1.000
08003760	8	Tomato, paste	2.500000	5.400	1.000
08003761	8	Tomato, paste-babyfood	2.500000	5.400	1.000
08003770	8	Tomato, puree	2.500000	3.300	1.000
08003771	8	Tomato, puree-babyfood	2.500000	3.300	1.000
08003780	8	Tomato, dried	2.500000	14.300	1.000
08003781	8	Tomato, dried-babyfood	2.500000	14.300	1.000
08003790	8	Tomato, juice	2.500000	1.500	1.000
01033870	1CD	Turmeric	0.600000	1.000	1.000
05023890	5B	Turnip, greens	8.000000	1.000	1.000
14003910	14	Walnut	0.250000	1.000	1.000
86010000	O	Water, direct, all sources	0.000001	1.000	1.000
86020000	O	Water, indirect, all sources	0.000001	1.000	1.000
09013990	9A	Watermelon	0.300000	1.000	1.000
09014000	9A	Watermelon, juice	0.300000	1.000	1.000
01034060	1CD	Yam, true	0.600000	1.000	1.000
01034070	1CD	Yam bean	0.600000	1.000	1.000

Attachment 4: Chronic Results File

U.S. Environmental Protection Agency Ver. 2.00
 DEEM-FCID Chronic analysis for SPIROTETRAMAT (1994-98 data)
 Residue file name: C:\Documents and
 Settings\gkramer\GK\##SPIROTETRAMAT\Spirotetramatchronic.R98

Adjustment factor #2 used.

Analysis Date 04-11-2008/10:58:22 Residue file dated: 04-11-2008/10:56:38/8
 Reference dose (RfD, Chronic) = .05 mg/kg bw/day

=====

Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.013768	27.5%
U.S. Population (spring season)	0.013719	27.4%
U.S. Population (summer season)	0.014034	28.1%
U.S. Population (autumn season)	0.013509	27.0%
U.S. Population (winter season)	0.013824	27.6%
Northeast region	0.014911	29.8%
Midwest region	0.013745	27.5%
Southern region	0.012585	25.2%
Western region	0.014648	29.3%
Hispanics	0.014991	30.0%
Non-hispanic whites	0.013474	26.9%
Non-hispanic blacks	0.013561	27.1%
Non-hisp/non-white/non-black	0.016250	32.5%
All infants (< 1 year)	0.019464	38.9%
Nursing infants	0.010241	20.5%
Non-nursing infants	0.022966	45.9%
Children 1-6 yrs	0.031597	63.2%
Children 7-12 yrs	0.016971	33.9%
Females 13-19 (not preg or nursing)	0.011620	23.2%
Females 20+ (not preg or nursing)	0.011196	22.4%
Females 13-50 yrs	0.011805	23.6%
Females 13+ (preg/not nursing)	0.011851	23.7%
Females 13+ (nursing)	0.012050	24.1%
Males 13-19 yrs	0.011911	23.8%
Males 20+ yrs	0.011070	22.1%
Seniors 55+	0.011124	22.2%
Children 1-2 yrs	0.038373	76.7%
Children 3-5 yrs	0.029638	59.3%
Children 6-12 yrs	0.018032	36.1%
Youth 13-19 yrs	0.011795	23.6%
Adults 20-49 yrs	0.011145	22.3%
Adults 50+ yrs	0.011139	22.3%
Females 13-49 yrs	0.011180	22.4%
