



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

**OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION**

Date: 22-DEC-2010

Subject: **Sulfentrazone – REVISED Acute and Chronic Aggregate Dietary (Food and Drinking Water) Exposure and Risk Assessments** for the Section 3 Registration Request to Add New Uses on: *Brassica*, Head and Stem, Subgroup 5A; *Brassica*, Leafy Greens, Subgroup 5B; Melon Subgroup 9A; Fruiting Vegetable, Group 8 and Okra; Pea, Succulent; Flax; Strawberry; Tuberous and Corm Vegetable, Subgroup 1C; and Miscellaneous Fruiting Vegetables.

PC Code: 129081

Decision No.: 388050

Petition No.: 7E7308

Risk Assessment Type: Dietary

TXR No.: NA

MRID No.: NA

DP Barcode: D384090

Registration Nos: 279-3220 & 279-3189

Regulatory Action: Amended Section 3

Case No.: 7231

CAS No.: 122836-35-5

40 CFR: §180.498

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NOTE: This document supersedes Memo, W. Wassell, 03-APR-2009 (D362644) and Memo, J. Van Alstine, 18-AUG-2010 (D364912). This assessment has been updated to include revisions to the acute reference dose for females 13-49 years old.

Executive Summary

Acute and chronic aggregate dietary (food and drinking water) exposure and risk assessments were conducted using the Dietary Exposure Evaluation Model - Food Consumption Intake Database (DEEM-FCID™, ver. 2.03). DEEM-FCID™ incorporates food consumption data from the United States Department of Agriculture (USDA) Continuing Surveys of Food Intakes by Individuals (CSFII; 1994-1996 and 1998). The revised assessment is being conducted in support of new uses on *Brassica*, head and stem, subgroup 5A; *Brassica*, leafy greens, subgroup 5B; melon subgroup 9A; fruiting vegetable, group 8 and okra; pea, succulent; flax; strawberry; tuberous and corm vegetable, subgroup 1C; and miscellaneous fruiting vegetables; and changes to the toxicological doses and endpoints for sulfentrazone.

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

The acute analysis assumed tolerance-level residues for all commodities, 100% crop treated (%CT), and DEEM™ (ver. 7.81) default processing factors (as necessary). The acute analysis also incorporated the drinking water estimates provided by the Environmental Fate and Effects Division (EFED). The resulting acute food plus water risk estimates are below HED's level of concern [$<100\%$ of the acute population-adjusted dose (aPAD)] at the 95th percentile of the exposure distribution for the U.S. general population (less than 1% aPAD), and all population subgroups. The aPAD is lower for females 13 to 49 years old. The population subgroup with the greatest risk was females 13 to 49 years old which utilized less than 3% of the aPAD.

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

The chronic analysis assumed tolerance-level residues, 100% CT, and DEEM™ (ver. 7.81) default processing factors (as necessary) for all commodities. The chronic analysis also incorporated the drinking water estimates provided by EFED. The resulting chronic risk estimates are below HED's level of concern. The most highly exposed population subgroup was children 1-2 years old, which utilized less than 4% of the chronic PAD (cPAD).

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

A cancer dietary assessment was not conducted because sulfentrazone is classified as "not likely to be carcinogenic to humans."

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 PAD. The PAD is equivalent to a point-of-departure [POD; e.g., no-observable-adverse-effect-level (NOAEL)] 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. 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).

The most recent sulfentrazone dietary exposure assessment was conducted by J. Van Alstine (18-AUG-2010; D364912).

II. Residue Information

Residues of Concern in Plants and Livestock: The HED Metabolism Assessment Review Committee (MARC) has determined that the parent compound, sulfentrazone, and the metabolite HMS [*N*-(2,4-dichloro-5-(4-(difluoromethyl)-4,5-dihydro-3-hydroxymethyl-5-oxo-1*H*-1,2,4-triazol-yl)phenyl)methanesulfonamide)] are the residues of concern in soybeans, and that sulfentrazone and its metabolites HMS and DMS [*N*-(2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-5-oxo-1*H*-1,2,4-triazol-1-yl]phenyl)methanesulfonamide] are the residues of concern in rotational crops (Memo, G. Kramer, 14-JUN-1996; D226434). HED has concluded that the results of the rotational crop metabolism studies may be translated to support preemergent uses on all types of crops. Additionally, sulfentrazone and its metabolites HMS and DMS were identified as the residues of concern in meat, milk, poultry, and eggs. The HED MARC recommended that parent and 3-carboxylic acid sulfentrazone are the residues of concern for the drinking-water assessment (Memo, G. Kramer *et al.*, 10-APR-2003; D288713). HED continues to consider the given metabolites and degradates to be the residues of concern for risk assessment.

Established/Recommended Tolerances: A tolerance is currently established under 40 CFR §180.498(a)(1) for the combined residues of sulfentrazone and its major metabolite, HMS, in/on soybean seed at 0.05 ppm. In addition, permanent tolerances are established under 40 CFR §180.498(a)(2) for the combined residues of sulfentrazone and its metabolites HMS and DMS in/on several food commodities; these established tolerances range from 0.15 ppm (various plant commodities) to 0.40 ppm (peanut meal). Time-limited tolerances for the combined residues of sulfentrazone and its metabolites HMS and DMS have been established under 40 CFR §180.498(b) in connection with Section 18 Emergency Exemptions; these include tolerances for residues in/on bean, succulent-seed without pod (lima bean and cowpea) at 0.1 ppm with a 12/31/07 expiration date, flax seed at 0.20 ppm with a 12/31/10 expiration date, and strawberry at 0.60 ppm with a 12/31/10 expiration date. Finally, tolerances are established under 40 CFR §180.498(d) for inadvertent and indirect combined residues of sulfentrazone and its metabolites HMS and DMS in/on cereal grain (excluding sweet corn) bran, forage, grain, hay, hulls, stover, and straw at 0.1-0.6 ppm as a result of the application of sulfentrazone to growing crops.

The proposed uses and the submitted data support the establishment of the following tolerances for the combined residues of sulfentrazone and its metabolites HMS and DMS in/on:

<i>Brassica</i> , head and stem, subgroup 5A.....	0.20 ppm
<i>Brassica</i> , leafy greens, subgroup 5B.....	0.40 ppm
Melon subgroup 9A	0.15 ppm
Vegetable, fruiting, group 8	0.15 ppm
Okra.....	0.15 ppm

Pea, succulent.....	0.15 ppm
Flax	0.15 ppm
Strawberry.....	0.15 ppm
Vegetable, tuberous and corm, subgroup 1C	0.15 ppm
Cocona	0.15 ppm
Eggplant, African.....	0.15 ppm
Eggplant, pea.....	0.15 ppm
Eggplant, scarlet.....	0.15 ppm
Goji berry	0.15 ppm
Huckleberry, garden.....	0.15 ppm
Martynia.....	0.15 ppm
Naranjilla.....	0.15 ppm
Roselle.....	0.15 ppm
Sunberry	0.15 ppm
Tomato, bush.....	0.15 ppm
Tomato, currant.....	0.15 ppm
Tomato, tree	0.15 ppm

Residues used in the Acute and Chronic Analyses: These analyses employed tolerance-level residues for all commodities, 100% CT, and DEEM™ (ver. 7.81) default processing factors. The following fruiting vegetables are not listed in DEEM-FCID™ and were therefore not included in the chronic assessment: cocona, African eggplant, pea eggplant, scarlet eggplant, goji berry, garden huckleberry, martynia, naranjilla, roselle, sunberry, bush tomato, and currant tomato. However, tree tomato is included in DEEM™ and was therefore included in the acute and chronic assessments.

III. Estimated Drinking Water Concentrations

Drinking water residues were incorporated directly into the acute and chronic dietary analyses (“water, direct, all sources” and “water, indirect, all sources”) and were provided by EFED (Memo, 9/15/2009, L. Liu, D366552). The estimated drinking water concentrations (EDWCs) were Tier 1 estimates for ground water using the SCI-GROW Model (Screening Concentration In Ground Water) and surface water using the FIRST Model [Food Quality Protection Act (FQPA) Index Reservoir Screening Tool] for sulfentrazone and its major degradate, 3-carboxylic acid sulfentrazone. The EDWCs were based on the use of sulfentrazone on sugarcane, cabbage, potatoes, mint, or horseradish.

For surface water, the acute (peak) sulfentrazone value is 32.0 ppb and the annual average value ranges from 0.5 ppb in alkaline or neutral waters (most common) to 5.1 ppb in acidic waters. The groundwater screening sulfentrazone concentration is 15.7 ppb. For 3-carboxylic acid sulfentrazone, the acute peak is 3.8 ppb and the annual average is 2.7 ppb. For 3-carboxylic acid sulfentrazone in groundwater, the concentration is 10.3 ppb. These values generally represent upper-bound conservative estimates of the total residue concentrations that might be found in surface water and groundwater due to the use of sulfentrazone on sugarcane, cabbage, potatoes, mint, or horseradish. These crops were chosen for this assessment because the label permits use of the maximum application rate (0.375 lb ai/A) and aerial application. Aerial application has the potential for most spray drift and is not compatible with incorporation which would reduce

surface water concentration values. EDWCs of 0.0358 ppm and 0.026 ppm were used in the acute and chronic analyses, respectively.

Chemical	Surface Water (ug/L)		Groundwater (ug/L)
	Acute	Chronic	Acute and Chronic
Sulfentrazone	32.0	5.1	15.7
3-Carboxylic Acid Sulfentrazone	3.8	2.7	10.3
Total	35.8	7.8	26.0

¹These crops were chosen for this assessment because the label permits use of the maximum application rate (0.375 pounds active ingredient per acre) and aerial application.

IV. DEEM-FCID™ Program and Consumption Information

Sulfentrazone acute and chronic dietary exposure and risk assessments were conducted using DEEM-FCID™ (Ver. 2.03), which incorporates consumption data from USDA’s CSFII, (1994-1996 and 1998 data). The 1994-1996, 1998 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 years old, children 3-5 years old, children 6-12 years old, youth 13-19 years old, adults 20-49 years old, females 13-49 years old, 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

The RAB1 toxicologists have reevaluated the sulfentrazone database and updated the endpoints as necessary. The toxicological endpoints selected for sulfentrazone are summarized below in Table 2.

Exposure Scenario	Point of Departure	Uncertainty/ FQPA Safety Factors	RfD, PAD, Level of Concern for Risk Assessment	Study and <i>Relevant</i> Toxicological Effects
Acute Dietary (Females 13-49)	NOAEL = 14 mg/kg/day	UF _A = 10X UF _H = 10X FQPA SF = 1X	aRfD = aPAD = 0.14 mg/kg/day	2-Gen Reproductive Toxicity Study - Rat Offspring Toxicity LOAEL= 33 (M) and 40 (F) mg/kg/day based on reduced prenatal viability (fetal & litter), reduced litter size, increased no. of stillborn pups, reduced pup and litter postnatal survival and decreased pup body weights throughout lactation.
Acute Dietary (General population including infants and children)	NOAEL = 250 mg/kg/day	UF _A = 10X UF _H = 10X FQPA SF = 1X	aRfD = aPAD = 2.5 mg/kg/day	Acute-Neurotoxicity Study - Rat LOAEL = 750 mg/kg/day based on increased incidence of clinical signs and FOB parameters and decreased motor activity.
Chronic Dietary (all populations)	NOAEL= 10 mg/kg/day	UF _A = 10X UF _H = 10X FQPA SF = 1X	cRfD = cPAD = 0.10 mg/kg/day	Prenatal Developmental Toxicity - Rat Developmental LOAEL = 25 mg/kg/day, based upon decreased mean fetal weights, and retardation in skeletal development evidenced by an increased number of litters with any variation and by decreased number of caudal vertebral and metacarpal ossification sites.
Cancer (oral, dermal, inhalation)	Classification: sulfentrazone is classified as “not likely to be carcinogenic to humans.”			

NOAEL = no-observed adverse-effect level. LOAEL = lowest-observed adverse-effect level. 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_L = extrapolation for use of a LOAEL in the absence of a NOAEL. FQPA SF = FQPA Safety Factor. PAD = population-adjusted dose (a = acute, c = chronic). RfD = reference dose. MOE = margin of exposure, LOC = level of concern.

VI. Results/Discussion

Acute and chronic analyses were performed using DEEM-FCID™ (ver. 2.03). DEEM-FCID™ estimates the dietary exposure and risk of the U.S. population and various population subgroups. The results reported are for the general U.S. Population, all infants (<1 year old), children 1-2

years old, children 3-5 years old, children 6-12 years old, youth 13-19 years old, females 13-49 years old, adults 20-49 years old, and adults 50+ years old.

The resulting acute food plus water risk estimates are below HED’s level of concern (<100% aPAD) at the 95th percentile of the exposure distribution for the general U.S. population (less than 1% aPAD), and all population subgroups; the population subgroup with the greatest risk was females 13 to 49 years, which utilized less than 3% of the aPAD. See Table 3 below for a summary of the results of the acute assessment. The resulting chronic risk estimates are also below HED’s level of concern. The most highly exposed population was children 1-2 years old which utilized less than 4% of the cPAD. See Table 4 below for a summary of the results of the chronic assessment.

Table 3. Summary of Acute Dietary Exposure and Risk for Sulfentrazone at the 95th Percentile.¹			
Population Subgroup	aPAD (mg/kg/day)	Exposure (mg/kg/day)	%aPAD
General U.S. Population	2.5	0.004347	<1.0
All Infants (< 1 year old)		0.009388	<1.0
Children 1-2 years old		0.008187	<1.0
Children 3-5 years old		0.007476	<1.0
Children 6-12 years old		0.005284	<1.0
Youth 13-19 years old		0.003695	<1.0
Adults 20-49 years old		0.003341	<1.0
Adults 50+ years old		0.002942	<1.0
Females 13-49 years old	0.14	0.003256	2.3

¹The population with the greatest risk is bolded.

Table 4. Summary of Chronic Dietary Exposure and Risk for Sulfentrazone.¹			
Population Subgroup	cPAD (mg/kg/day)	Exposure (mg/kg/day)	%cPAD
General U.S. Population	0.10	0.001751	1.8
All Infants (< 1 year old)		0.003117	3.1
Children 1-2 years old		0.003565	3.6
Children 3-5 years old		0.003463	3.5
Children 6-12 years old		0.002404	2.4
Youth 13-19 years old		0.001660	1.7
Adults 20-49 years old		0.001492	1.5
Adults 50+ years old		0.001360	1.4
Females 13-49 years old		0.001451	1.5

¹The population with the greatest risk is bolded.

VII. Characterization of Inputs/Outputs

The unrefined acute and chronic analyses assumed tolerance-level residues for all commodities, 100% CT, and DEEMTM (ver. 7.81) default processing factors (as necessary). These analyses are considered conservative and could be refined through the use of anticipated-residue estimates

(ARs) for all commodities, %CT data for registered commodities, and empirical processing factors.

VIII. Conclusions

The acute and chronic dietary exposure and risk estimates for sulfentrazone are below HED's level of concern. For food and drinking water acute exposure, the population subgroup with the greatest risk was females 13 to 49 years old, which utilized less than 3% of the aPAD.

For food and drinking water chronic exposure, the most highly-exposed population subgroup was children 1-2 years old, which utilized less than 4% of the cPAD. The acute and chronic dietary exposure assessments support the new uses proposed for sulfentrazone.

Attachments

Attachment 1: DEEM-FCID™ Acute Residue File.

Attachment 2: DEEM-FCID™ Acute Exposure Estimates for the General Population Including Infants and Children.

Attachment 3: DEEM-FCID™ Chronic Residue File.

Attachment 4: DEEM-FCID™ Chronic Exposure Estimates.

RDI: DE SAC Reviewers: 19-NOV-2010; G. Kramer 17-NOV-2010

DP No.: D384090

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J. L. Van Alstine:S-10951:Potomac Yard:703-603-8866:7509P:RAB1

Attachment 1: DEEM-FCID™ Acute Residue File.

Filename: C:\Documents and Settings\jlangdsda\My Documents\Chemicals\Sulfentrazone\November 2010\Sent to Reviewers\129081-acute-2009-jml__01 DEC 2010.R98

Chemical: Sulfentrazone

RfD(Chronic): .1 mg/kg bw/day NOEL(Chronic): 0 mg/kg bw/day

RfD(Acute): 2.5 mg/kg bw/day NOEL(Acute): 0 mg/kg bw/day

Date created/last modified: 12-01-2010/09:50:36/8

Program ver. 2.03

EPA Code	Crop Grp	Commodity Name	Def Res (ppm)	Adj.Factors #1	Adj.Factors #2	Comment
01011900	1AB	Horseradish	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311; TLT 0.10 ppm, exp. 12/31/05				
01030150	1CD	Arrowroot, flour	0.150000	1.000	1.000	
01030151	1CD	Arrowroot, flour-babyfood	0.150000	1.000	1.000	
01030170	1CD	Artichoke, Jerusalem	0.150000	1.000	1.000	
01030820	1CD	Cassava	0.150000	1.000	1.000	
01030821	1CD	Cassava-babyfood	0.150000	1.000	1.000	
01031390	1CD	Dasheen, corm	0.150000	1.000	1.000	
01031660	1CD	Ginger	0.150000	1.000	1.000	
01031661	1CD	Ginger-babyfood	0.150000	1.000	1.000	
01031670	1CD	Ginger, dried	0.150000	1.000	1.000	
01032960	1C	Potato, chips	0.150000	1.000	1.000	
01032970	1C	Potato, dry (granules/ flakes)	0.150000	6.500	1.000	
01032971	1C	Potato, dry (granules/ flakes)-b	0.150000	6.500	1.000	
01032980	1C	Potato, flour	0.150000	6.500	1.000	
01032981	1C	Potato, flour-babyfood	0.150000	6.500	1.000	
01032990	1C	Potato, tuber, w/peel	0.150000	1.000	1.000	
01032991	1C	Potato, tuber, w/peel-babyfood	0.150000	1.000	1.000	
01033000	1C	Potato, tuber, w/o peel	0.150000	1.000	1.000	
01033001	1C	Potato, tuber, w/o peel-babyfood	0.150000	1.000	1.000	
01033660	1CD	Sweet potato	0.150000	1.000	1.000	
01033661	1CD	Sweet potato-babyfood	0.150000	1.000	1.000	
01033710	1CD	Tanier, corm	0.150000	1.000	1.000	
01033870	1CD	Turmeric	0.150000	1.000	1.000	
01034060	1CD	Yam, true	0.150000	1.000	1.000	
01034070	1CD	Yam bean	0.150000	1.000	1.000	
05010610	5A	Broccoli	0.200000	1.000	1.000	
05010611	5A	Broccoli-babyfood	0.200000	1.000	1.000	
05010620	5A	Broccoli, Chinese	0.200000	1.000	1.000	
05010640	5A	Brussels sprouts	0.200000	1.000	1.000	
05010690	5A	Cabbage	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311				
05010710	5A	Cabbage, Chinese, napa	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311				
05010720	5A	Cabbage, Chinese, mustard	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311				
05010830	5A	Cauliflower	0.200000	1.000	1.000	
05011960	5A	Kohlrabi	0.200000	1.000	1.000	
05020630	5B	Broccoli raab	0.400000	1.000	1.000	
05020700	5B	Cabbage, Chinese, bok choy	0.400000	1.000	1.000	1E0631
		Full comment: 1E06311				
05021170	5B	Collards	0.400000	1.000	1.000	
05021940	5B	Kale	0.400000	1.000	1.000	
05022290	5B	Mustard greens	0.400000	1.000	1.000	
05023180	5B	Rape greens	0.400000	1.000	1.000	
05023890	5B	Turnip, greens	0.400000	1.000	1.000	
06003470	6	Soybean, seed	0.050000	1.000	1.000	
06003480	6	Soybean, flour	0.050000	1.000	1.000	
06003481	6	Soybean, flour-babyfood	0.050000	1.000	1.000	
06003490	6	Soybean, soy milk	0.050000	1.000	1.000	
06003491	6	Soybean, soy milk-babyfood or in	0.050000	1.000	1.000	
06003500	6	Soybean, oil	0.050000	1.000	1.000	
06003501	6	Soybean, oil-babyfood	0.050000	1.000	1.000	
06010430	6A	Bean, snap, succulent	0.150000	1.000	1.000	
06010431	6A	Bean, snap, succulent-babyfood	0.150000	1.000	1.000	
06012570	6A	Pea, edible podded, succulent	0.150000	1.000	1.000	
06020310	6B	Bean, broad, succulent	0.150000	1.000	1.000	
06020330	6B	Bean, cowpea, succulent	0.100000	1.000	1.000	TLT, e

Full comment: TLT, exp. 12/31/04						
06020370	6B	Bean, lima, succulent	0.150000	1.000	1.000	
06022550	6B	Pea, succulent	0.150000	1.000	1.000	
06022551	6B	Pea, succulent-babyfood	0.150000	1.000	1.000	
06022590	6B	Pea, pigeon, succulent	0.150000	1.000	1.000	
06030300	6C	Bean, black, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030320	6C	Bean, broad, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030340	6C	Bean, cowpea, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030350	6C	Bean, great northern, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030360	6C	Bean, kidney, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030380	6C	Bean, lima, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030390	6C	Bean, mung, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030400	6C	Bean, navy, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030410	6C	Bean, pink, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030420	6C	Bean, pinto, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030980	6C	Chickpea, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030981	6C	Chickpea, seed-babyfood	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06030990	6C	Chickpea, flour	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06031820	6C	Guar, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06031821	6C	Guar, seed-babyfood	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06032030	6C	Lentil, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06032560	6C	Pea, dry	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06032561	6C	Pea, dry-babyfood	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
06032580	6C	Pea, pigeon, seed	0.150000	1.000	1.000	2F0639
Full comment: 2F06391						
08001480	8	Eggplant	0.150000	1.000	1.000	
08002340	8	Okra	0.150000	1.000	1.000	
08002700	8	Pepper, bell	0.150000	1.000	1.000	
08002701	8	Pepper, bell-babyfood	0.150000	1.000	1.000	
08002710	8	Pepper, bell, dried	0.150000	1.000	1.000	
08002711	8	Pepper, bell, dried-babyfood	0.150000	1.000	1.000	
08002720	8	Pepper, nonbell	0.150000	1.000	1.000	New, S
Full comment: New, Section 18						
08002721	8	Pepper, nonbell-babyfood	0.150000	1.000	1.000	New, S
Full comment: New, Section 18						
08002730	8	Pepper, nonbell, dried	0.150000	1.000	1.000	New, S
Full comment: New, Section 18						
08003740	8	Tomatillo	0.150000	1.000	1.000	
08003750	8	Tomato	0.150000	1.000	1.000	
08003751	8	Tomato-babyfood	0.150000	1.000	1.000	
08003760	8	Tomato, paste	0.150000	5.400	1.000	
08003761	8	Tomato, paste-babyfood	0.150000	5.400	1.000	
08003770	8	Tomato, puree	0.150000	3.300	1.000	
08003771	8	Tomato, puree-babyfood	0.150000	3.300	1.000	
08003780	8	Tomato, dried	0.150000	14.300	1.000	
08003781	8	Tomato, dried-babyfood	0.150000	14.300	1.000	
08003790	8	Tomato, juice	0.150000	1.500	1.000	
09010750	9A	Cantaloupe	0.150000	1.000	1.000	
09010800	9A	Casaba	0.150000	1.000	1.000	
09011870	9A	Honeydew melon	0.150000	1.000	1.000	
09013990	9A	Watermelon	0.150000	1.000	1.000	
09014000	9A	Watermelon, juice	0.150000	1.000	1.000	
15000250	15	Barley, pearled barley	0.100000	1.000	1.000	Inadve

15000251	15	Barley, pearled barley-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000260	15	Barley, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000261	15	Barley, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000270	15	Barley, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000650	15	Buckwheat	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000660	15	Buckwheat, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15001200	15	Corn, field, flour	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001201	15	Corn, field, flour-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001210	15	Corn, field, meal	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001211	15	Corn, field, meal-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001220	15	Corn, field, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15001230	15	Corn, field, starch	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001231	15	Corn, field, starch-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001240	15	Corn, field, syrup	0.150000	1.500	1.000	2F0639
		Full comment: 2F06391				
15001241	15	Corn, field, syrup-babyfood	0.150000	1.500	1.000	2F0639
		Full comment: 2F06391				
15001250	15	Corn, field, oil	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001251	15	Corn, field, oil-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001260	15	Corn, pop	0.100000	1.000	1.000	2F0639
		Full comment: 2F06391				
15002260	15	Millet, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002310	15	Oat, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002320	15	Oat, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002321	15	Oat, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002330	15	Oat, groats/rolled oats	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002331	15	Oat, groats/rolled oats-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003230	15	Rice, white	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003231	15	Rice, white-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003240	15	Rice, brown	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003241	15	Rice, brown-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003250	15	Rice, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003251	15	Rice, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003260	15	Rice, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003261	15	Rice, bran-babyfood	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003280	15	Rye, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003290	15	Rye, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003440	15	Sorghum, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				

15003450	15	Sorghum, syrup	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003810	15	Triticale, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003811	15	Triticale, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004010	15	Wheat, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004011	15	Wheat, grain-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004020	15	Wheat, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004021	15	Wheat, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004030	15	Wheat, germ	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004040	15	Wheat, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004050	15	Wild rice	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
20001630	20	Flaxseed, oil	0.150000	1.000	1.000	
20003640	20	Sunflower, seed	0.200000	1.000	1.000	
20003650	20	Sunflower, oil	0.200000	1.000	1.000	
20003651	20	Sunflower, oil-babyfood	0.200000	1.000	1.000	
86010000	O	Water, direct, all sources	0.035800	1.000	1.000	
86020000	O	Water, indirect, all sources	0.035800	1.000	1.000	
95000190	O	Asparagus	0.150000	1.000	1.000	2E0650
		Full comment: 2E06500				
95002630	O	Peanut	0.200000	1.000	1.000	0F0611
		Full comment: 0F06116				
95002640	O	Peanut, butter	0.200000	1.890	1.000	0F0611
		Full comment: 0F06116				
95002650	O	Peanut, oil	0.200000	1.000	1.000	0F0611
		Full comment: 0F06116				
95002750	O	Peppermint	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95002760	O	Peppermint, oil	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95003520	O	Spearmint	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95003530	O	Spearmint, oil	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95003590	O	Strawberry	0.150000	1.000	1.000	
95003591	O	Strawberry-babyfood	0.150000	1.000	1.000	
95003600	O	Strawberry, juice	0.150000	1.000	1.000	
95003601	O	Strawberry, juice-babyfood	0.150000	1.000	1.000	
95003620	O	Sugarcane, sugar	0.150000	1.000	1.000	
95003621	O	Sugarcane, sugar-babyfood	0.150000	1.000	1.000	
95003630	O	Sugarcane, molasses	0.200000	1.000	1.000	
95003631	O	Sugarcane, molasses-babyfood	0.200000	1.000	1.000	
95003800	O	Tomato, Tree	0.150000	1.000	1.000	

Attachment 2: DEEM-FCID™ Acute Exposure Estimates for the General Population including Infants and Children.¹

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for SULFENTRAZONE (1994-98 data)
 Residue file: 129081-acute-2009-jml__01 DEC 2010.R98
 Adjustment factor #2 used.
 Analysis Date: 12-01-2010/09:52:09 Residue file dated: 12-01-2010/09:50:36/8
 Daily totals for food and foodform consumption used.
 Run Comment: ""

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.004347	0.17	0.007110	0.28	0.011882	0.48
All infants:	0.009388	0.38	0.013235	0.53	0.020709	0.83
Children 1-2 yrs:	0.008187	0.33	0.011436	0.46	0.018298	0.73
Children 3-5 yrs:	0.007476	0.30	0.010856	0.43	0.017357	0.69
Children 6-12 yrs:	0.005284	0.21	0.007704	0.31	0.010870	0.43
Youth 13-19 yrs:	0.003695	0.15	0.005772	0.23	0.010982	0.44
Adults 20-49 yrs:	0.003341	0.13	0.004837	0.19	0.008144	0.33
Adults 50+ yrs:	0.002942	0.12	0.004081	0.16	0.006160	0.25
Females 13-49 yrs:	0.003256	0.13 ²	0.004506	0.18	0.007684	0.31

¹ The aPAD for the general population including infants and children = 2.5 mg/kg bw/day. The aPAD for females 13-49 years old = 0.14 mg/kg bw/day.
² This value was calculated by DEEM™ using an aPAD of 2.5 mg/kg bw/day. The % aPAD reported in Table 3 was adjusted to account for the lower aPAD (0.14 mg/kg bw/day) for females 13-49 years old using the following formula: % aPAD = (Exposure/aPAD)*100% = (0.003256/0.14)*100% = 2.3%.

Attachment 3: DEEM-FCID™ Chronic Residue File.

Filename: C:\Documents and Settings\jlangsa\My Documents\Chemicals\Sulfentrazone\November 2010\Sent to Reviewers\129081-chronic-2009-jml__01 DEC 2010.R98

Chemical: Sulfentrazone

RfD(Chronic): .1 mg/kg bw/day NOEL(Chronic): 0 mg/kg bw/day

RfD(Acute): 2.5 mg/kg bw/day NOEL(Acute): 0 mg/kg bw/day

Date created/last modified: 12-01-2010/09:51:00/8

Program ver. 2.03

EPA Code	Crop Grp	Commodity Name	Def Res (ppm)	Adj.Factors #1	Adj.Factors #2	Comment
01011900	1AB	Horseradish	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311; TLT 0.10 ppm, exp. 12/31/05				
01030150	1CD	Arrowroot, flour	0.150000	1.000	1.000	
01030151	1CD	Arrowroot, flour-babyfood	0.150000	1.000	1.000	
01030170	1CD	Artichoke, Jerusalem	0.150000	1.000	1.000	
01030820	1CD	Cassava	0.150000	1.000	1.000	
01030821	1CD	Cassava-babyfood	0.150000	1.000	1.000	
01031390	1CD	Dasheen, corm	0.150000	1.000	1.000	
01031660	1CD	Ginger	0.150000	1.000	1.000	
01031661	1CD	Ginger-babyfood	0.150000	1.000	1.000	
01031670	1CD	Ginger, dried	0.150000	1.000	1.000	
01032960	1C	Potato, chips	0.150000	1.000	1.000	
01032970	1C	Potato, dry (granules/ flakes)	0.150000	6.500	1.000	
01032971	1C	Potato, dry (granules/ flakes)-b	0.150000	6.500	1.000	
01032980	1C	Potato, flour	0.150000	6.500	1.000	
01032981	1C	Potato, flour-babyfood	0.150000	6.500	1.000	
01032990	1C	Potato, tuber, w/peel	0.150000	1.000	1.000	
01032991	1C	Potato, tuber, w/peel-babyfood	0.150000	1.000	1.000	
01033000	1C	Potato, tuber, w/o peel	0.150000	1.000	1.000	
01033001	1C	Potato, tuber, w/o peel-babyfood	0.150000	1.000	1.000	
01033660	1CD	Sweet potato	0.150000	1.000	1.000	
01033661	1CD	Sweet potato-babyfood	0.150000	1.000	1.000	
01033710	1CD	Tanier, corm	0.150000	1.000	1.000	
01033870	1CD	Turmeric	0.150000	1.000	1.000	
01034060	1CD	Yam, true	0.150000	1.000	1.000	
01034070	1CD	Yam bean	0.150000	1.000	1.000	
05010610	5A	Broccoli	0.200000	1.000	1.000	
05010611	5A	Broccoli-babyfood	0.200000	1.000	1.000	
05010620	5A	Broccoli, Chinese	0.200000	1.000	1.000	
05010640	5A	Brussels sprouts	0.200000	1.000	1.000	
05010690	5A	Cabbage	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311				
05010710	5A	Cabbage, Chinese, napa	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311				
05010720	5A	Cabbage, Chinese, mustard	0.200000	1.000	1.000	1E0631
		Full comment: 1E06311				
05010830	5A	Cauliflower	0.200000	1.000	1.000	
05011960	5A	Kohlrabi	0.200000	1.000	1.000	
05020630	5B	Broccoli raab	0.400000	1.000	1.000	
05020700	5B	Cabbage, Chinese, bok choy	0.400000	1.000	1.000	1E0631
		Full comment: 1E06311				
05021170	5B	Collards	0.400000	1.000	1.000	
05021940	5B	Kale	0.400000	1.000	1.000	
05022290	5B	Mustard greens	0.400000	1.000	1.000	
05023180	5B	Rape greens	0.400000	1.000	1.000	
05023890	5B	Turnip, greens	0.400000	1.000	1.000	
06003470	6	Soybean, seed	0.050000	1.000	1.000	
06003480	6	Soybean, flour	0.050000	1.000	1.000	
06003481	6	Soybean, flour-babyfood	0.050000	1.000	1.000	
06003490	6	Soybean, soy milk	0.050000	1.000	1.000	
06003491	6	Soybean, soy milk-babyfood or in	0.050000	1.000	1.000	
06003500	6	Soybean, oil	0.050000	1.000	1.000	
06003501	6	Soybean, oil-babyfood	0.050000	1.000	1.000	
06010430	6A	Bean, snap, succulent	0.150000	1.000	1.000	
06010431	6A	Bean, snap, succulent-babyfood	0.150000	1.000	1.000	
06012570	6A	Pea, edible podded, succulent	0.150000	1.000	1.000	
06020310	6B	Bean, broad, succulent	0.150000	1.000	1.000	
06020330	6B	Bean, cowpea, succulent	0.100000	1.000	1.000	TLT, e
		Full comment: TLT, exp. 12/31/04				

06020370	6B	Bean, lima, succulent	0.150000	1.000	1.000	2E0649
		Full comment: 2E06498				
06022550	6B	Pea, succulent	0.150000	1.000	1.000	
06022551	6B	Pea, succulent-babyfood	0.150000	1.000	1.000	
06022590	6B	Pea, pigeon, succulent	0.150000	1.000	1.000	
06030300	6C	Bean, black, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030320	6C	Bean, broad, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030340	6C	Bean, cowpea, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030350	6C	Bean, great northern, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030360	6C	Bean, kidney, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030380	6C	Bean, lima, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030390	6C	Bean, mung, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030400	6C	Bean, navy, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030410	6C	Bean, pink, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030420	6C	Bean, pinto, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030980	6C	Chickpea, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030981	6C	Chickpea, seed-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06030990	6C	Chickpea, flour	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06031820	6C	Guar, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06031821	6C	Guar, seed-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06032030	6C	Lentil, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06032560	6C	Pea, dry	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06032561	6C	Pea, dry-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
06032580	6C	Pea, pigeon, seed	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
08001480	8	Eggplant	0.150000	1.000	1.000	
08002340	8	Okra	0.150000	1.000	1.000	
08002700	8	Pepper, bell	0.150000	1.000	1.000	
08002701	8	Pepper, bell-babyfood	0.150000	1.000	1.000	
08002710	8	Pepper, bell, dried	0.150000	1.000	1.000	
08002711	8	Pepper, bell, dried-babyfood	0.150000	1.000	1.000	
08002720	8	Pepper, nonbell	0.150000	1.000	1.000	New, S
		Full comment: New, Section 18				
08002721	8	Pepper, nonbell-babyfood	0.150000	1.000	1.000	New, S
		Full comment: New, Section 18				
08002730	8	Pepper, nonbell, dried	0.150000	1.000	1.000	New, S
		Full comment: New, Section 18				
08003740	8	Tomatillo	0.150000	1.000	1.000	
08003750	8	Tomato	0.150000	1.000	1.000	
08003751	8	Tomato-babyfood	0.150000	1.000	1.000	
08003760	8	Tomato, paste	0.150000	5.400	1.000	
08003761	8	Tomato, paste-babyfood	0.150000	5.400	1.000	
08003770	8	Tomato, puree	0.150000	3.300	1.000	
08003771	8	Tomato, puree-babyfood	0.150000	3.300	1.000	
08003780	8	Tomato, dried	0.150000	14.300	1.000	
08003781	8	Tomato, dried-babyfood	0.150000	14.300	1.000	
08003790	8	Tomato, juice	0.150000	1.500	1.000	
09010750	9A	Cantaloupe	0.150000	1.000	1.000	
09010800	9A	Casaba	0.150000	1.000	1.000	
09011870	9A	Honeydew melon	0.150000	1.000	1.000	
09013990	9A	Watermelon	0.150000	1.000	1.000	
09014000	9A	Watermelon, juice	0.150000	1.000	1.000	
15000250	15	Barley, pearled barley	0.100000	1.000	1.000	Inadve

15000251	15	Barley, pearled barley-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000260	15	Barley, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000261	15	Barley, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000270	15	Barley, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000650	15	Buckwheat	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15000660	15	Buckwheat, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15001200	15	Corn, field, flour	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001201	15	Corn, field, flour-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001210	15	Corn, field, meal	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001211	15	Corn, field, meal-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001220	15	Corn, field, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15001230	15	Corn, field, starch	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001231	15	Corn, field, starch-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001240	15	Corn, field, syrup	0.150000	1.500	1.000	2F0639
		Full comment: 2F06391				
15001241	15	Corn, field, syrup-babyfood	0.150000	1.500	1.000	2F0639
		Full comment: 2F06391				
15001250	15	Corn, field, oil	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001251	15	Corn, field, oil-babyfood	0.150000	1.000	1.000	2F0639
		Full comment: 2F06391				
15001260	15	Corn, pop	0.100000	1.000	1.000	2F0639
		Full comment: 2F06391				
15002260	15	Millet, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002310	15	Oat, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002320	15	Oat, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002321	15	Oat, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002330	15	Oat, groats/rolled oats	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15002331	15	Oat, groats/rolled oats-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003230	15	Rice, white	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003231	15	Rice, white-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003240	15	Rice, brown	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003241	15	Rice, brown-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003250	15	Rice, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003251	15	Rice, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003260	15	Rice, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003261	15	Rice, bran-babyfood	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003280	15	Rye, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003290	15	Rye, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003440	15	Sorghum, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				

15003450	15	Sorghum, syrup	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003810	15	Triticale, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15003811	15	Triticale, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004010	15	Wheat, grain	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004011	15	Wheat, grain-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004020	15	Wheat, flour	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004021	15	Wheat, flour-babyfood	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004030	15	Wheat, germ	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004040	15	Wheat, bran	0.150000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
15004050	15	Wild rice	0.100000	1.000	1.000	Inadve
		Full comment: Inadvertent tol.				
20001630	20	Flaxseed, oil	0.150000	1.000	1.000	
20003640	20	Sunflower, seed	0.200000	1.000	1.000	
20003650	20	Sunflower, oil	0.200000	1.000	1.000	
20003651	20	Sunflower, oil-babyfood	0.200000	1.000	1.000	
86010000	O	Water, direct, all sources	0.026000	1.000	1.000	
86020000	O	Water, indirect, all sources	0.026000	1.000	1.000	
95000190	O	Asparagus	0.150000	1.000	1.000	2E0650
		Full comment: 2E06500				
95002630	O	Peanut	0.200000	1.000	1.000	0F0611
		Full comment: 0F06116				
95002640	O	Peanut, butter	0.200000	1.890	1.000	0F0611
		Full comment: 0F06116				
95002650	O	Peanut, oil	0.200000	1.000	1.000	0F0611
		Full comment: 0F06116				
95002750	O	Peppermint	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95002760	O	Peppermint, oil	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95003520	O	Spearmint	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95003530	O	Spearmint, oil	0.300000	1.000	1.000	1E0631
		Full comment: 1E06311				
95003590	O	Strawberry	0.150000	1.000	1.000	
95003591	O	Strawberry-babyfood	0.150000	1.000	1.000	
95003600	O	Strawberry, juice	0.150000	1.000	1.000	
95003601	O	Strawberry, juice-babyfood	0.150000	1.000	1.000	
95003620	O	Sugarcane, sugar	0.150000	1.000	1.000	
95003621	O	Sugarcane, sugar-babyfood	0.150000	1.000	1.000	
95003630	O	Sugarcane, molasses	0.200000	1.000	1.000	
95003631	O	Sugarcane, molasses-babyfood	0.200000	1.000	1.000	
95003800	O	Tomato, Tree	0.150000	1.000	1.000	

Attachment 4: DEEM-FCID™ Chronic Exposure Estimates.

U.S. Environmental Protection Agency Ver. 2.00
 DEEM-FCID Chronic analysis for SULFENTRAZONE (1994-98 data)
 Residue file name: C:\Documents and Settings\jlangsd\My Documents\Chemicals\Sulfentrazone\November
 2010\Sent to Reviewers\129081-chronic-2009-jml__01 DEC 2010.R98
 Adjustment factor #2 used.
 Analysis Date 12-01-2010/10:00:17 Residue file dated: 12-01-2010/09:51:00/8
 Reference dose (RfD, Chronic) = .1 mg/kg bw/day

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 Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.001751	1.8%
U.S. Population (spring season)	0.001760	1.8%
U.S. Population (summer season)	0.001841	1.8%
U.S. Population (autumn season)	0.001701	1.7%
U.S. Population (winter season)	0.001700	1.7%
Northeast region	0.001667	1.7%
Midwest region	0.001810	1.8%
Southern region	0.001696	1.7%
Western region	0.001849	1.8%
Hispanics	0.001922	1.9%
Non-hispanic whites	0.001704	1.7%
Non-hispanic blacks	0.001782	1.8%
Non-hisp/non-white/non-black	0.002025	2.0%
All infants (< 1 year)	0.003117	3.1%
Nursing infants	0.001240	1.2%
Non-nursing infants	0.003829	3.8%
Children 1-6 yrs	0.003430	3.4%
Children 7-12 yrs	0.002286	2.3%
Females 13-19 (not preg or nursing)	0.001519	1.5%
Females 20+ (not preg or nursing)	0.001400	1.4%
Females 13-50 yrs	0.001534	1.5%
Females 13+ (preg/not nursing)	0.001513	1.5%
Females 13+ (nursing)	0.001853	1.9%
Males 13-19 yrs	0.001796	1.8%
Males 20+ yrs	0.001485	1.5%
Seniors 55+	0.001352	1.4%
Children 1-2 yrs	0.003565	3.6%
Children 3-5 yrs	0.003463	3.5%
Children 6-12 yrs	0.002404	2.4%
Youth 13-19 yrs	0.001660	1.7%
Adults 20-49 yrs	0.001492	1.5%
Adults 50+ yrs	0.001360	1.4%
Females 13-49 yrs	0.001451	1.5%