UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

**OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES**

MEMORANDUM

DATE: 1 August 2007

SUBJECT: **Fluazinam** Acute and Chronic Aggregate Dietary (Food and Drinking Water) Exposure and Risk Assessments for the Section 3 Registration Action on Ginseng, Brassica Vegetables, Legume Vegetables, and Bushberries.

           PC Code: 129098   Decision Number: 372193
           DP Number: 340854

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THROUGH: Christina Swartz, Branch Chief
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              Health Effects Division (7509P)

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Executive Summary

Acute and chronic aggregate dietary (food and drinking water) exposure and risk assessments were conducted using the Dietary Exposure Evaluation Model DEEM-FCID™, Version 2.03 which use food consumption data from the U.S. Department of Agriculture's Continuing Surveys of Food Intakes by Individuals (CSFII) from 1994-1996 and 1998. The analyses were conducted as part of a human health aggregate risk assessment for the requested uses of fluazinam on ginseng, Brassica vegetables, legume vegetables, and bushberries. An assessment of cancer risk is not necessary for this chemical.

Both the acute and chronic analyses are based on tolerance-level residues, assume 100% crop treated, and incorporate modeled estimated drinking water concentrations (EDWCs). Therefore, the resulting exposure and risk estimates should be considered high-end and very conservative. Actual exposures and risks from fluazinam will likely be lower than the values presented in these analyses.

The acute risk estimates are below HED's level of concern for all population subgroups, including those of infants and children. Generally, HED is concerned when risk estimates exceed 100% of the population-adjusted dose (PAD). The acute risk estimate for the U.S. population, as a whole, is 1% of the acute PAD (aPAD). For females 13-49 years of age, the risk estimate is 8% of their aPAD. Risk estimates for all other population subgroups are less than 8% aPAD. Likewise, chronic risk estimates are below HED's level of concern for all population subgroups. The risk estimate for the U.S. population is 9% of the chronic PAD (cPAD). The highest risk estimate is for the "all infant" population subgroup at 16% cPAD.

These analyses indicate that there are no dietary exposure considerations that preclude establishing tolerances for fluazinam.

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. 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," 21 Jun 2000, web link: http://www.epa.gov/fedrgstr/EPA-PEST/2000/July/Day-12/6061.pdf ; or see SOP 99.6 (20 Aug 1999).

The most recent dietary risk assessment for fluazinam was conducted by W. Cutchin (22 Aug 2001, D276982).

II.   Residue Information

Fluazinam is currently registered in the U.S. for use on potato and peanut, each with a tolerance of 0.02 ppm [40 CFR 180.574]. In addition, there is a tolerance of 3.0 ppm for residues in/on wine grapes (no U.S. registration). The residues of concern for risk assessment are fluazinam and its metabolite AMGT, combined. Field trial data reflecting AMGT residues were not provided for brassica vegetables and legume vegetables; therefore, an upper-bound ratio of 0.35:1 (AMGT:fluazinam) was used to estimate the AMGT residue in these crops. AMGT is not formed in root and tuber crops and this factor was not used for residues in/on potato and ginseng. For bushberries, the mean ratio of the metabolite:parent residues (0.11:1) from field trials was used to estimate total residues of concern.   The residues used in the assessments are based on tolerance-level residues of fluazinam (Table 1) and should be considered high-end estimates. The residue estimates shown in Table 1 were used for both acute and chronic analyses. The assessment assumed 100% crop treated and used DEEM 7.76 default processing factors for processed commodities (*e.g.*, dried potato). A full listing of the residue inputs used in the analyses is included as Attachments 1 and 2.

Table 1. Summary of New-Use Food Crop Residue Levels Used in the Acute and Chronic Dietary Exposure Analyses.		
Crop/Crop Group	Recommended Tolerance Level, ppm	Residue Level for Dietary Exposure Assessment, ppm[a]
Ginseng	4.5	4.5[b]
Brassica Vegetables (Group 5)	0.01	0.0135
Edible Podded Legumes (except peas; Group 6A)	0.1	0.135
Succulent Shelled Pea and Bean (Group 6B)	0.04	0.054
Dried Shelled Pea and Bean (Group 6C)	0.02	0.027
Bushberries (Group 13B)	7.0	7.8[c]

[a] Residue level = recommended tolerance × 1.35 (from grape metabolism data)
[b] AMGT is not a significant residue in root and tuber crops and no correction is necessary for risk assessment
[c] Residue level = recommended tolerance × 1.11 (from field trial data)

III. Drinking Water Data

The drinking water residue used in the dietary risk assessment was provided by the Environmental Fate and Effects Division (EFED; J. Meléndez, D334948, 7 Feb 2007) and incorporated directly into this dietary assessment into the food categories "water, direct, all sources" and "water, indirect, all sources." The estimated drinking water concentration (EDWC) of 0.071 ppm is the estimated peak concentration from the FIRST model (for more information, see http://www.epa.gov/oppefed1/models/water/) and was used for the acute assessment. The chronic assessment uses the EDWC based on total residues of fluazinam in surface water (Table 2).

Table 2. Maximum Tier I Estimated Drinking Water Concentrations (EDWCs) for drinking water assessment based on ground application of fluazinam.			
Drinking Water Source (Model Used)	USE (Rate Modeled)	Maximum Estimated Drinking Water Concentration (EDWC; ppb)	
Groundwater (SCI-GROW) Fluazinam and Total Residues of Fluazinam	Bushberries (3.90 lb a.i./A)	Acute and Chronic	0.187

Table 2. Maximum Tier I Estimated Drinking Water Concentrations (EDWCs) for drinking water assessment based on ground application of fluazinam.

Drinking Water Source (Model Used)	USE (Rate Modeled)	Maximum Estimated Drinking Water Concentration (EDWC; ppb)	
Surface Water (FIRST) Fluazinam	Bushberries (3.90 lb a.i./A)	Acute	71.0
	Bushberries (3.90 lb a.i./A)	Chronic	0.7
Surface Water (FIRST) Total Residues of Fluazinam	Bushberries (3.90 lb a.i./A)	Acute	71.0
	Bushberries (3.90 lb a.i./A)	Chronic	17.7

IV.   DEEM-FCID™ Program and Consumption Information

Fluazinam acute and chronic dietary exposure assessments were conducted using the Dietary Exposure Evaluation Model software with the Food Commodity Intake Database DEEM-FCID™,Version 2.03 which incorporates consumption data from USDA's Continuing Surveys of Food Intakes by Individuals (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

Adequate toxicological data have been submitted to permit assessment of fluazinam. The data show that the primary target organ for fluazinam is the liver and that acute and chronic dietary assessments are appropriate. The data also support reducing the FQPA factor to 1X. Based on the available information, a dietary assessment of cancer risk is not necessary. Detailed toxicological considerations can be found in the human health risk assessment for fluazinam (K. Bailey *et al.*, D334949). The fluazinam doses and endpoints for dietary exposure assessments are summarized in Table 3.

Table 3. Toxicological Doses and Endpoints for Fluazinam for Use in Dietary Health Risk Assessments

Exposure/ Scenario	Point of Departure	Uncertainty/ FQPA Safety Factors	RfD, PAD, Level of Concern for Risk Assessment	Study and Toxicological Effects
Acute Dietary (General population)	NOAEL= 50 mg/kg/day	UF_A= 10x UF_H=10x FQPA SF=1x Total UF=100x	Acute RfD =0.5 mg/kg/day aPAD = 0.5mg/kg/day	Acute Neurotoxicity-Rats. LOAEL = 1000 mg/kg/day based on decreased motor activity and soft stools on day of dosing.
Acute Dietary (Females 13-49 years of age)	NOAEL (developmental) = 7 mg/kg/day	UF_A= 10x UF_H=10x FQPA SF=1x Total UF=100x	Acute RfD =0.07 mg/kg/day aPAD = 0.07mg/kg/day	Developmental Toxicity- Rabbits. Developmental LOAEL = 12 mg/kg/day based on increased incidence of total litter resorptions and possible increased incidence of fetal skeletal abnormalities.
Chronic Dietary (All Populations)	NOAEL= 1.1 mg/kg/day	UF_A= 10x UF_H=10x FQPA SF=1x Total UF=100x	Chronic RfD =0.011 mg/kg/day cPAD = 0.011mg/kg/day	Carcinogenicity-Mice. LOAEL = 10.7 mg/kg/day based on liver histopathology and increased liver weight.
Cancer (oral, dermal, inhalation)	Classification: "Suggestive evidence of carcinogenicity, but not sufficient to assess human carcinogenic potential"			

Point of Departure (POD) = A data point or an estimated point that is derived from observed dose-response data and used to mark the beginning of extrapolation to determine risk associated with lower environmentally relevant human exposures. 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). FQPA SF = FQPA Safety Factor. PAD = population adjusted dose (a = acute, c = chronic). RfD = reference dose. N/A = not applicable.

VI. Results/Discussion

As stated above, 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 4 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. Risk estimates for all population subgroups, for both the acute and the chronic analyses, are below HED's level of concern. Full listings of exposure and risk estimates are included in Attachments 3 (acute analysis) and 4 (chronic analysis).

Table 4. Summary of Acute and Chronic Exposure and Risk Estimates for Fluazinam.

Population Subgroup	Acute Assessment (95th Percentile)			Chronic Assessment		
	PAD, mg/day	Exposure Estimate, mg/day	% Pad	PAD, mg/day	Exposure Estimate, mg/day	% Pad
U.S. Population	0.5	0.006015	1	0.011	0.000953	9
All infants	0.5	0.015211	3	**0.011**	**0.001799**	**16**
Children 1-2 yrs	0.5	0.007019	1	0.011	0.001133	10
Children 3-5 yrs	0.5	0.006323	1	0.011	0.000996	9
Children 6-12 yrs	0.5	0.004439	1	0.011	0.000650	6
Youth 13-19 yrs	0.5	0.003344	1	0.011	0.000438	4
Adults 20-49 yrs	0.5	0.005903	1	0.011	0.000996	9
Adults 50+ yrs	0.5	0.006933	1	0.011	0.001123	10
Females 13-49 yrs	**0.07**	**0.005809**	**8**	0.011	0.001016	9

Assessments with the highest risk estimates are bolded

VII.   Characterization of Inputs/Outputs

Both the acute and chronic assessments are based on tolerance-level residues, with worst-case assumptions regarding levels of the metabolite AMGT. In addition, it was assumed that all crops with registered or requested uses of fluazinam were treated (*i.e.*, 100% crop treated). These assumptions result in highly conservative, health-protective estimates of exposure and risk.

VIII.   Conclusions

The exposure estimates derived by the dietary exposure model are likely to be overestimates of actual exposures that may occur. Even so, the aggregate (food + water) dietary risk estimates are below HED's level of concern for all population subgroups for both the acute and chronic exposure scenarios. There are no dietary exposure considerations that preclude registering the proposed uses and establishing tolerances at the levels recommended by HED.

IX.   List of Attachments

Attachment 1. Residue inputs for the acute dietary exposure assessments of fluazinam.
Attachment 2. Residue inputs for the chronic dietary exposure assessments of fluazinam.
Attachment 3. Summary of acute dietary exposure and risk analysis for fluazinam.
Attachment 4. Summary of chronic dietary exposure and risk analysis for fluazinam.

cc: M. Doherty (HED/RAB2), W. Drew (HED/RAB2)

Attachment 1. Residue inputs the acute dietary exposure assessments of fluazinam.

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U.S. Environmental Protection Agency                        Ver. 2.02
DEEM-FCID Acute analysis for FLUAZINAM
Residue file name: C:\Documents and Settings\mdoherty\My Documents\Chemistry Reviews\DEEM
Runs\Fluazinam\129098a.R98
Analysis Date 07-17-2007        Residue file dated: 07-17-2007/10:27:53/8
Reference dose (aRfD) = 0.5 mg/kg bw/day
Comment: aPAD of 0.5 kg/day is for general pop.  Female 13-49 aPAD = 0.07 mg/day
-------------------------------------------------------------------------------
  EPA    Crop                                  Def Res    Adj.Factors   Comment
  Code    Grp   Food Name                       (ppm)      #1     #2
-------- ---- ------------------------------ ---------- ------ ------ -------
06030300 6C   Bean, black, seed                0.027000  1.000  1.000
06020310 6B   Bean, broad, succulent           0.054000  1.000  1.000
06030320 6C   Bean, broad, seed                0.027000  1.000  1.000
06020330 6B   Bean, cowpea, succulent          0.054000  1.000  1.000
06030340 6C   Bean, cowpea, seed               0.027000  1.000  1.000
06030350 6C   Bean,  great northern, seed      0.027000  1.000  1.000
06030360 6C   Bean, kidney, seed               0.027000  1.000  1.000
06020370 6B   Bean, lima, succulent            0.054000  1.000  1.000
06030380 6C   Bean, lima, seed                 0.027000  1.000  1.000
06030390 6C   Bean, mung, seed                 0.027000  1.000  1.000
06030400 6C   Bean, navy, seed                 0.027000  1.000  1.000
06030410 6C   Bean, pink, seed                 0.027000  1.000  1.000
06030420 6C   Bean, pinto, seed                0.027000  1.000  1.000
06010430 6A   Bean, snap, succulent            0.135000  1.000  1.000
06010431 6A   Bean, snap, succulent-babyfood   0.135000  1.000  1.000
13020570 13B  Blueberry                        7.800000  1.000  1.000
13020571 13B  Blueberry-babyfood               7.800000  1.000  1.000
05010610 5A   Broccoli                         0.013500  1.000  1.000
05010611 5A   Broccoli-babyfood                0.013500  1.000  1.000
05010620 5A   Broccoli, Chinese                0.013500  1.000  1.000
05020630 5B   Broccoli raab                    0.013500  1.000  1.000
05010640 5A   Brussels sprouts                 0.013500  1.000  1.000
05010690 5A   Cabbage                          0.013500  1.000  1.000
05020700 5B   Cabbage, Chinese, bok choy       0.013500  1.000  1.000
05010710 5A   Cabbage, Chinese, napa           0.013500  1.000  1.000
05010720 5A   Cabbage, Chinese, mustard        0.013500  1.000  1.000
05010830 5A   Cauliflower                      0.013500  1.000  1.000
06030980 6C   Chickpea, seed                   0.027000  1.000  1.000
06030981 6C   Chickpea, seed-babyfood          0.027000  1.000  1.000
06030990 6C   Chickpea, flour                  0.027000  1.000  1.000
05021170 5B   Collards                         0.013500  1.000  1.000
13021360 13B  Currant                          7.800000  1.000  1.000
13021370 13B  Currant, dried                   7.800000  1.000  1.000
13021490 13B  Elderberry                       7.800000  1.000  1.000
01011680 1AB  Ginseng, dried                   4.500000  1.000  1.000
13021740 13B  Gooseberry                       7.800000  1.000  1.000
95001790 O    Grape, wine and sherry           3.000000  1.000  1.000
06031820 6C   Guar, seed                       0.027000  1.000  1.000
06031821 6C   Guar, seed-babyfood              0.027000  1.000  1.000
13021910 13B  Huckleberry                      7.800000  1.000  1.000
05021940 5B   Kale                             0.013500  1.000  1.000
05011960 5A   Kohlrabi                         0.013500  1.000  1.000
06032030 6C   Lentil, seed                     0.027000  1.000  1.000
05022290 5B   Mustard greens                   0.013500  1.000  1.000
06022550 6B   Pea, succulent                   0.054000  1.000  1.000
06022551 6B   Pea, succulent-babyfood          0.054000  1.000  1.000
06032560 6C   Pea, dry                         0.027000  1.000  1.000
06032561 6C   Pea, dry-babyfood                0.027000  1.000  1.000
06012570 6A   Pea, edible podded, succulent    0.135000  1.000  1.000
06032580 6C   Pea, pigeon, seed                0.027000  1.000  1.000
06022590 6B   Pea, pigeon, succulent           0.054000  1.000  1.000
95002630 O    Peanut                           0.020000  1.000  1.000
95002640 O    Peanut, butter                   0.020000  1.890  1.000
95002650 O    Peanut, oil                      0.020000  1.000  1.000
01032960 1C   Potato, chips                    0.020000  1.000  1.000
01032970 1C   Potato, dry (granules/ flakes)   0.020000  6.500  1.000
01032971 1C   Potato, dry (granules/ flakes)-b 0.020000  6.500  1.000
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01032980 1C   Potato, flour                      0.020000  1.000  1.000
01032981 1C   Potato, flour-babyfood             0.020000  1.000  1.000
01032990 1C   Potato, tuber, w/peel              0.020000  1.000  1.000
01032991 1C   Potato, tuber, w/peel-babyfood     0.020000  1.000  1.000
01033000 1C   Potato, tuber, w/o peel            0.020000  1.000  1.000
01033001 1C   Potato, tuber, w/o peel-babyfood   0.020000  1.000  1.000
05023180 5B   Rape greens                        0.013500  1.000  1.000
05023890 5B   Turnip, greens                     0.013500  1.000  1.000
86010000 O    Water, direct, all sources         0.071000  1.000  1.000
86020000 O    Water, indirect, all sources       0.071000  1.000  1.000
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Attachment 2. Residue inputs for the chronic dietary exposure assessments of fluazinam.

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U.S. Environmental Protection Agency                          Ver. 2.00
DEEM-FCID Chronic analysis for FLUAZINAM                      1994-98 data
Residue file: C:\Documents and Settings\mdoherty\My Documents\Chemistry Reviews\DEEM
Runs\Fluazinam\129098c.R98
                                                 Adjust. #2 NOT used
Analysis Date 07-17-2007        Residue file dated: 07-17-2007/10:28:39/8
Reference dose (RfD) = 0.011 mg/kg bw/day
Comment:aPAD of 0.5 kg/day is for general pop.  Female 13-49 aPAD = 0.07 mg/day
------------------------------------------------------------------------------
Food Crop                                    Residue     Adj.Factors    Comment
EPA Code  Grp  Food Name                      (ppm)
                                                        #1       #2
--------  ----  ------------------------------ ---------- ------   ------   -------
06030300 6C   Bean, black, seed               0.027000   1.000    1.000
06020310 6B   Bean, broad, succulent          0.054000   1.000    1.000
06030320 6C   Bean, broad, seed               0.027000   1.000    1.000
06030330 6B   Bean, cowpea, succulent         0.054000   1.000    1.000
06030340 6C   Bean, cowpea, seed              0.027000   1.000    1.000
06030350 6C   Bean,  great northern, seed     0.027000   1.000    1.000
06030360 6C   Bean, kidney, seed              0.027000   1.000    1.000
06020370 6B   Bean, lima, succulent           0.054000   1.000    1.000
06030380 6C   Bean, lima, seed                0.027000   1.000    1.000
06030390 6C   Bean, mung, seed                0.027000   1.000    1.000
06030400 6C   Bean, navy, seed                0.027000   1.000    1.000
06030410 6C   Bean, pink, seed                0.027000   1.000    1.000
06030420 6C   Bean, pinto, seed               0.027000   1.000    1.000
06010430 6A   Bean, snap, succulent           0.135000   1.000    1.000
06010431 6A   Bean, snap, succulent-babyfood  0.135000   1.000    1.000
13020570 13B  Blueberry                       7.800000   1.000    1.000
13020571 13B  Blueberry-babyfood              7.800000   1.000    1.000
05010610 5A   Broccoli                        0.013500   1.000    1.000
05010611 5A   Broccoli-babyfood               0.013500   1.000    1.000
05010620 5A   Broccoli, Chinese               0.013500   1.000    1.000
05020630 5B   Broccoli raab                   0.013500   1.000    1.000
05010640 5A   Brussels sprouts                0.013500   1.000    1.000
05010690 5A   Cabbage                         0.013500   1.000    1.000
05020700 5B   Cabbage, Chinese, bok choy      0.013500   1.000    1.000
05010710 5A   Cabbage, Chinese, napa          0.013500   1.000    1.000
05010720 5A   Cabbage, Chinese, mustard       0.013500   1.000    1.000
05010830 5A   Cauliflower                     0.013500   1.000    1.000
06030980 6C   Chickpea, seed                  0.027000   1.000    1.000
06030981 6C   Chickpea, seed-babyfood         0.027000   1.000    1.000
06030990 6C   Chickpea, flour                 0.027000   1.000    1.000
05021170 5B   Collards                        0.013500   1.000    1.000
13021360 13B  Currant                         7.800000   1.000    1.000
13021370 13B  Currant, dried                  7.800000   1.000    1.000
13021490 13B  Elderberry                      7.800000   1.000    1.000
01011680 1AB  Ginseng, dried                  4.500000   1.000    1.000
13021740 13B  Gooseberry                      7.800000   1.000    1.000
95001790 O    Grape, wine and sherry          3.000000   1.000    1.000
06031820 6C   Guar, seed                      0.027000   1.000    1.000
06031821 6C   Guar, seed-babyfood             0.027000   1.000    1.000
13021910 13B  Huckleberry                     7.800000   1.000    1.000
05021940 5B   Kale                            0.013500   1.000    1.000
05011960 5A   Kohlrabi                        0.013500   1.000    1.000
06032030 6C   Lentil, seed                    0.027000   1.000    1.000
05022290 5B   Mustard greens                  0.013500   1.000    1.000
06022550 6B   Pea, succulent                  0.054000   1.000    1.000
06022551 6B   Pea, succulent-babyfood         0.054000   1.000    1.000
06032560 6C   Pea, dry                        0.027000   1.000    1.000
06032561 6C   Pea, dry-babyfood               0.027000   1.000    1.000
06012570 6A   Pea, edible podded, succulent   0.135000   1.000    1.000
06032580 6C   Pea, pigeon, seed               0.027000   1.000    1.000
06022590 6B   Pea, pigeon, succulent          0.054000   1.000    1.000
95002630 O    Peanut                          0.020000   1.000    1.000
95002640 O    Peanut, butter                  0.020000   1.890    1.000
95002650 O    Peanut, oil                     0.020000   1.000    1.000
01032960 1C   Potato, chips                   0.020000   1.000    1.000
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01032970 1C   Potato, dry (granules/ flakes)       0.020000   6.500   1.000
01032971 1C   Potato, dry (granules/ flakes)-b     0.020000   6.500   1.000
01032980 1C   Potato, flour                        0.020000   1.000   1.000
01032981 1C   Potato, flour-babyfood               0.020000   1.000   1.000
01032990 1C   Potato, tuber, w/peel                0.020000   1.000   1.000
01032991 1C   Potato, tuber, w/peel-babyfood       0.020000   1.000   1.000
01033000 1C   Potato, tuber, w/o peel              0.020000   1.000   1.000
01033001 1C   Potato, tuber, w/o peel-babyfood     0.020000   1.000   1.000
05023180 5B   Rape greens                          0.013500   1.000   1.000
05023890 5B   Turnip, greens                       0.013500   1.000   1.000
86010000 O    Water, direct, all sources           0.017700   1.000   1.000
86020000 O    Water, indirect, all sources         0.017700   1.000   1.000
```

Attachment 3. Summary of acute dietary exposure and risk analysis for fluazinam.

```
U.S. Environmental Protection Agency                        Ver. 2.02
DEEM-FCID ACUTE Analysis for FLUAZINAM                      (1994-98 data)
Residue file: 129098a.R98                   Adjustment factor #2 NOT used.
Analysis Date: 07-17-2007/10:31:43   Residue file dated: 07-17-2007/10:27:53/8
Acute Pop Adjusted Dose (aPAD) varies with population; see individual reports
Daily totals for food and foodform consumption used.
Run Comment: "aPAD of 0.5 kg/day is for general pop.  Female 13-49 aPAD = 0.07
 mg/day"
===============================================================================

Summary calculations (per capita):

                   95th Percentile     99th Percentile     99.9th Percentile
                  Exposure   % aPAD   Exposure   % aPAD   Exposure   % aPAD
                  ---------- -------- ---------- -------- ---------- --------
U.S. Population:
                   0.006015    1.20    0.016307    3.26    0.034661    6.93
All infants:
                   0.015211    3.04    0.025064    5.01    0.054080   10.82
Children 1-2 yrs:
                   0.007019    1.40    0.012500    2.50    0.043972    8.79
Children 3-5 yrs:
                   0.006323    1.26    0.010539    2.11    0.043124    8.62
Children 6-12 yrs:
                   0.004439    0.89    0.007210    1.44    0.020699    4.14
Youth 13-19 yrs:
                   0.003344    0.67    0.006779    1.36    0.018525    3.70
Adults 20-49 yrs:
                   0.005903    1.18    0.017222    3.44    0.034739    6.95
Adults 50+ yrs:
                   0.006933    1.39    0.017895    3.58    0.037081    7.42
Females 13-49 yrs:
                   0.005809    8.30    0.018964   27.09    0.035119   50.17
```

Attachment 4. Summary of chronic dietary exposure and risk analysis for fluazinam.

```
U.S. Environmental Protection Agency                      Ver. 2.00
DEEM-FCID Chronic analysis for FLUAZINAM                  (1994-98 data)
Residue file name: C:\Documents and Settings\mdoherty\My Documents\Chemistry Reviews\DEEM
Runs\Fluazinam\129098c.R98
                                          Adjustment factor #2 NOT used.
Analysis Date 07-17-2007/10:29:17    Residue file dated: 07-17-2007/10:28:39/8
Reference dose (RfD, Chronic) = .011 mg/kg bw/day
COMMENT 1: aPAD of 0.5 kg/day is for general pop.  Female 13-49 aPAD = 0.07 mg/day
===============================================================================
                    Total exposure by population subgroup
-------------------------------------------------------------------------------


                                          Total Exposure
                                  -----------------------------------
            Population                mg/kg           Percent of
            Subgroup               body wt/day           Rfd
-----------------------------------  -------------   ---------------
U.S. Population (total)                0.000953            8.7%

U.S. Population (spring season)        0.000916            8.3%
U.S. Population (summer season)        0.001044            9.5%
U.S. Population (autumn season)        0.000942            8.6%
U.S. Population (winter season)        0.000905            8.2%

Northeast region                      0.001055            9.6%
Midwest region                        0.000848            7.7%
Southern region                       0.000806            7.3%
Western region                        0.001206           11.0%

Hispanics                             0.000735            6.7%
Non-hispanic whites                   0.001064            9.7%
Non-hispanic blacks                   0.000546            5.0%
Non-hisp/non-white/non-black          0.000809            7.4%

All infants (< 1 year)                0.001799           16.4%
Nursing infants                       0.000957            8.7%
Non-nursing infants                   0.002118           19.3%
Children 1-6  yrs                     0.001014            9.2%
Children 7-12 yrs                     0.000617            5.6%

Females 13-19 (not preg or nursing)   0.000429            3.9%
Females 20+ (not preg or nursing)     0.001178           10.7%
Females 13-50 yrs                     0.000992            9.0%
Females 13+ (preg/not nursing)        0.000526            4.8%
Females 13+ (nursing)                 0.000633            5.8%

Males 13-19 yrs                       0.000445            4.0%
Males 20+ yrs                         0.000914            8.3%
Seniors 55+                           0.001145           10.4%

Children 1-2 yrs                      0.001133           10.3%
Children 3-5 yrs                      0.000996            9.1%
Children 6-12 yrs                     0.000650            5.9%
Youth 13-19 yrs                       0.000438            4.0%
Adults 20-49 yrs                      0.000996            9.1%
Adults 50+ yrs                        0.001123           10.2%
Females 13-49 yrs                     0.001016            9.2%


-------------------------------------------------------------------------------
```