



ASW

10/OPP#34145

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

23PP

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

October 13, 1999

MEMORANDUM

SUBJECT: Fenthion. List A Reregistration Case No. 0290/Chemical ID No. 053301. Acute and Chronic Dietary Exposure Analyses for the HED Revised Risk Assessment. No MRID #. DP Barcode No. D259939.

FROM: Christina Swartz, Chemist
Reregistration Branch 1
Health Effects Division (7509C)

Christina Swartz

THRU: David Soderberg/Thomas Bloem
Dietary Exposure Science Advisory Council

David Soderberg

and

Whang Phang, Ph.D., Branch Senior Scientist
Reregistration Branch 1
Health Effects Division (7509C)

Whang Phang

TO: William J. Hazel, Ph.D.
Reregistration Branch 1
Health Effects Division (7509C)

and

Beth Edwards/Susan Lewis
Reregistration Branch 1
Special Review and Reregistration Division (7508W)

Background/Action Requested

In conjunction with the preparation of the HED preliminary human health risk assessment for fenthion, acute and chronic dietary exposure analyses were generated using: the DEEM™ software; consumption data from USDA's 1989-1991 CSFII (Continuing Surveys of Food Intakes by Individuals); anticipated residues of fenthion in livestock commodities; and toxicology endpoints for dietary risk assessment selected in the 2/11/99 meeting of the Hazard

1923

Identification Assessment Review Committee (HIARC, J. Rowland, 6/2/99). The resulting dietary exposure estimates were above HED's level of concern for acute and chronic dietary risk (C. Swartz, 2/23/99, D253503).

Revised dietary exposure and risk analyses are required to incorporate revised toxicological endpoints for dietary risk assessment.

Summary/Conclusions

Revised acute probabilistic dietary and chronic dietary exposure analyses were conducted using the previously-generated anticipated residues in milk, beef and pork commodities. Fenthion acute and chronic dietary exposure and risk estimates exceed HED's level of concern for the general US population and various population subgroups, including infants and children. The most highly exposed population subgroup is children 1-6 years. At the 99.9th percentile of exposure, approximately 820% of the acute Population Adjusted Dose (aPAD) is consumed; approximately 270% of the chronic PAD (cPAD) is consumed. Results of the analyses indicate potential residues in beef meat and fat are the most significant contribution to estimated exposure and risk. A summary of estimated exposures is presented in Table 3.

Per-capita acute dietary risks for children 1-6 and 7-12 years fell below the Agency's level of concern (100% aPAD) between the 90th and 95th percentiles of exposure; risks for infants were below the level of concern between the 97.5th and 99th percentiles. Risks for females, males and the general US population were below the level of concern for acute exposure between the 95th and 97.5th percentiles.

Risk managers should be aware that the calculated dietary risks are considered to be upper-bound, since conservative estimates of fenthion residues in livestock commodities were used based on the 21-day pre-slaughter interval (PSI). HED used upper-bound residue estimates in both the acute and chronic analyses since there were no data reflecting a 1X application rate, and since the data reflecting a 21-day PSI were very limited and were based on low application rates (i.e., 0.1-0.2X). The usage data for livestock are not considered to be precise, due to the general scarcity of sources for usage in non-crop agricultural sites. Given the limitations of the both the residue and usage data, HED has relatively low confidence in these conservative risk estimates. Adequate data reflecting residues in livestock commodities from animals treated in accordance with registered labels would permit further refinement of the risk estimates, and a greater degree of confidence.

DETAILED CONSIDERATIONS

Hazard Information

Endpoints and doses for acute and chronic dietary risk assessment are summarized in HIARC reports dated 3/26/98, 12/1/98, 2/19/99 and 6/2/99. For the current risk assessment, the

2723

toxicological endpoints for dietary risk assessment are summarized in the fenthion Revised Human Health Risk Assessment (W. Hazel, 10/12/99).

The HED FQPA Safety Factor Committee evaluated the hazard and exposure database for fenthion with respect to the potential for increased sensitivity to infants and children. The Committee concluded that the additional 10X safety factor required to protect infants and children (FQPA, 1996) could be removed (reduced to 1X) for fenthion [refer to the "FQPA Safety Factor Recommendations For The Organophosphates," B. Tarplee and J. Rowland, 8/6/98].

Previous risk assessments evaluated dietary exposure with respect to the acute and chronic reference doses (RfDs). HED has revised the terms used to express dietary risk: an acute or chronic RfD which incorporates the FQPA safety factor (1X, 3X or 10X) is now referred to as the Population Adjusted Dose (PAD). Since the 10X factor has been removed for fenthion, the acute and chronic PADs (aPAD and cPAD) are equivalent to the respective RfDs.

Doses and endpoints for dietary risk assessment are summarized in Table 1.

Table 1. Fenthion Endpoints for Dietary Risk Assessment.

EXPOSURE SCENARIO	DOSE (mg/kg/day) ¹	STUDY/ENDPOINT ²	REFERENCE DOSE (mg/kg/day) ³
Acute Dietary	NOAEL=0.07 UF=100 FQPA=1X	2-Year Oral Monkey/ Plasma ChEI at 1 week at the LOAEL of 0.2 mg/kg/day	Acute RfD = 0.0007 Acute PAD (aPAD) = 0.0007
Chronic Dietary	NOAEL/LOAEL=0.02 (UF=300) FQPA=1X	2-Year Oral Monkey/ Plasma ChEI (threshold NOAEL/LOAEL)	Chronic RfD = 0.00007 Chronic PAD (cPAD) = 0.00007

¹ NOAEL = No Observed Adverse Effects Level; LOAEL = Lowest Observed Adverse Effects Level; The conventional UF consists of 10X for interspecies extrapolation and 10X for intra-species variability.

² ChEI = Cholinesterase Inhibition.

³ Reference Dose (RfD) = NOAEL/UF; PAD = RfD/FQPA factor.

Consumption Data

HED conducts dietary risk assessments using the Dietary Exposure Evaluation Model (DEEM™), which incorporates consumption data generated in USDA's CSFII, 1989-1991. For chronic dietary risk assessments, the three-day average of consumption for each sub-population

is combined with average residues in commodities to determine average exposure in mg/kg/day. For probabilistic acute dietary risk assessments, single day food consumption events are combined with a distribution of residue levels from field trial or monitoring data to generate a distribution of exposures in mg/kg/day.

Usage Information

Fenthion uses which can result in dietary exposure are limited to ear tag use, pour-on applications, and the veterinary feed-through uses for cattle and swine. Anticipated upper bound residue levels in livestock commodities were calculated using the limited available data. In previous dietary risk analyses, 100% of the cattle and swine were assumed to have been treated with fenthion. In order to further refine the exposure and risk estimates for fenthion, BEAD/OPP provided HED with upper bound estimates of the percentage of cattle and swine treated with fenthion (A. Halvorson memorandum dated 2/4/99). The BEAD estimates for dairy cattle, beef cattle, and swine are 4%, 12% and 9% of animals treated, respectively.

Percent crop or livestock treated data are generally incorporated into chronic dietary exposure analyses using Adjustment Factor 2 in the DEEM™ software. In acute analyses, the percent crop treated data are used to generate residue distribution files (RDFs); the percent crop not treated determines how many zero residue values can be added to the distribution.

Residue Data

Upper-bound estimates of fenthion residues in milk, beef and pork commodities were described in detail in the C. Olinger memo dated 9/30/97 (DP Barcode D238981), and were used in the previous and current DEEM™ analyses. No new data have been submitted.

Anticipated residues (ARs) were determined based on a 21-day pre-slaughter interval (PSI), which HED agreed could remain on existing labels in order to harmonize with the veterinary feed-through use established under the purview of the FDA [HED generally allows for a maximum PSI of 3 days]. The data currently available to assess potential residues in livestock commodities are considered to be limited. There are no data reflecting the 1X application rate; in addition, data reflecting the 21-day PSI are very limited and reflect very low application rates (0.1 - 0.2X). Therefore, the upper-bound residues were calculated such that EPA had a degree of certainty that residues in livestock commodities would not be higher. Due to the lack of adequate data, the upper-bound residues were used in both acute (one-day) and chronic (long-term) exposure estimates.

Fenthion residues in milk were monitored by USDA/PDP in 1996 and 1997; a total of 1,297 samples were analyzed with no detections. The limit of detection (LOD) for fenthion was 0.001 ppm for all USDA/PDP laboratories. The PDP monitoring data did not include all fenthion residues of concern, and could not be used quantitatively in the analysis. However, it should be noted that the upper-bound residue estimate for milk reflects non-detectable (<0.01 ppm)

residues as well. The potential for fenthion residues in milk is entirely due to ear tags, the only registered use for dairy cattle.

For acute dietary exposure analyses, HED currently defines commodities and associated food forms as non-blended (e.g., a single apple or pear), partially blended (e.g., juices, milk, and certain canned/frozen food forms) or blended (e.g., oils, grains). For non-blended and partially blended food forms, the residue inputs to the acute analysis are distributions; a point estimate is used for blended food forms. In the fenthion acute dietary exposure analysis, beef and pork commodities are considered to be non-blended, while milk is partially blended.

Residue distribution files (RDFs) were generated for milk, beef and pork commodities to be used in the acute analysis. Commodities from untreated livestock were assumed to have fenthion residues of 0 ppm, while the same commodities from treated animals (i.e., the % livestock treated) were assumed to bear the anticipated residues estimated at the 21-day PSI. In the chronic analysis, the ARs were corrected for the % livestock treated by entering the BEAD usage value as adjustment factor 2 in the DEEM™ software.

In both the acute and chronic exposure analyses, the DEEM™ default concentration factors were applied. The RDFs and residue inputs used in the analyses are shown in detail in Attachments 1-3. The residue inputs to the acute and chronic dietary exposure/risk analyses are summarized in Table 2.

Table 2. Fenthion Residue Inputs to the Acute and Chronic Dietary Exposure Analyses.

Commodity	Anticipated Residue (ppm) ¹	% Treated ²	Residue Distribution File (Acute Analysis) ³	Anticipated Residue (ppm) (Chronic Analysis) ⁴
Milk	0.005	4	4@0.005, 96Z	0.005
Beef, fat	2.0	12	12@2.0, 88Z	2.0
Beef, other ⁵	0.5	12	12@0.5, 88Z	0.5
Pork ⁶	0.1	9	9@0.1, 91Z	0.1

¹ Upper bound estimates of residues at a 21-day PSI; Refer to the 9/30/97 C. Olinger memo for details.

² Refer to the A. Halvorson memo dated 2/4/99.

³ The number of zeros (Z) corresponds to the percent of livestock not treated; the number of samples assumed to have the estimated AR was equivalent to the % treated.

⁴ The anticipated residue was entered into the DEEM™ analysis, with the adjustment for % crop treated included (as a percentage) as adjustment factor 2. Refer to the attachments for details.

⁵ The acute RDF and chronic AR were used for all beef commodities (other than fat) in the analyses.

The acute RDF and chronic AR were used for all pork commodities in the analyses.

Results

The revised acute and chronic dietary exposure and risk estimates exceed the Agency's level of concern for the general U.S. population and various population subgroups, including infants and children. The most highly exposed subgroup is children 1-6 years, with approximately 820 %aPAD (at the 99.9th percentile of exposure) and 270 %cPAD consumed. In the chronic analysis, infants were the only population subgroup for which chronic dietary risk was below the level of concern, at approximately 60%cPAD. The acute critical exposure contribution and the chronic critical commodity analyses show that estimated dietary risk is due to potential residues in beef meat and fat.

In order to further characterize dietary exposure and risk associated with fenthion residues in milk, acute and chronic exposure analyses were conducted using the PDP monitoring data. The results are not included herein, since acute and chronic risks did not differ from those generated using upper-bound residues. The results are consistent with the finding that potential residues in beef meat and fat contribute most significantly to estimated exposure.

Per-capita acute dietary risks for children 1-6 and 7-12 years fell below the Agency's level of concern (100% aPAD) between the 90th and 95th percentiles of exposure; risks for infants were below the level of concern between the 97.5th and 99th percentiles. Risks for females, males and the general US population were below the level of concern for acute exposure between the 95th and 97.5th percentiles. Calculated acute and chronic dietary risks are considered to be upper-bound estimates, since conservative estimates of fenthion residues in livestock commodities were used, based on the 21-day PSI. In addition, the usage data for livestock are not considered to be precise, due to the general scarcity of sources for usage in non-crop agricultural sites.

Results of the acute and chronic analyses are summarized in Table 3.

Table 3. Acute and Chronic Dietary Exposure/Risk Estimates for Fenthion.¹

Population Subgroup	Acute Assessment (99.9th %-ile)		Chronic Assessment	
	Exposure (mg/kg/day)	%aPAD	Exposure (mg/kg/day)	%cPAD
General US Population	0.003295	470	0.000095	140
All Infants (<1 yr)	0.004072	580	0.000042	60
Nursing Infants (<1 year old)	0.003413	490	0.000036	51
Non-Nursing Infants (<1 yr)	0.004422	630	0.000045	64
Children (1-6)	0.005743	820	0.000192	270
Children (7-12 years)	0.003752	540	0.000138	200
Females (13-19 years)	0.002902	410	0.000088	130
Females (13-50 years)	0.002374	340	0.000073	100
Males (13-19 years)	0.002673	380	0.000118	170
Males (20+ years)	0.002519	360	0.000088	130

¹ Detailed DEEM™ outputs are provided in the attachments; the acute population adjusted dose (aPAD) is 0.0007 mg/kg/day. The chronic PAD (cPAD) is 0.00007 mg/kg/day.

Attachments:

Attachment 1. Fenthion Residue Distribution Files.

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Attachment 3. Fenthion Chronic Dietary Exposure Analysis.

Dietary Exposure SAC Review: 10/5/99

cc: Reviewer, C. Swartz; List A File, SF, DRES Files

CSwartz:RRB1:CM2:Rm 722H:703 305 5877:10/5/99

7823

Attachment 1. Fenthion Residue Distribution Files (RDFs).

Beef Fat

TOTALZ=88
TOTALFREQ=1

12,2.0

Beef, Other Commodities

TOTALZ=88
TOTALFREQ=1

12,0.5

Pork, All Commodities

TOTALZ=91
TOTALFREQ=1

9,0.1

Milk, All Food Forms

TOTALZ=96
TOTALFREQ=1

4,0.005

8923

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

U.S. Environmental Protection Agency Ver. 6.78
 DEEM Acute analysis for FENTHION 1989-92 data
 Residue file name: C:\Dressac\053301a.R96 Adjust. #2 NOT used
 Analysis Date 10-12-1999 Residue file dated: 10-11-1999/20:34:32/8
 Reference dose: aRfD = 0.0007 mg/kg bw/day NOEL = 0.07 mg/kg bw/day
 Comment: Acute UF = 100X; Chronic UF = 300X. FQPA factor removed, therefore RfD = PAD

RDF indices and file names for Monte Carlo Analysis

- 1 C:\DRESSAC\Febeefot.rdf
- 2 C:\DRESSAC\Febeeffa.rdf
- 3 C:\DRESSAC\Feporkal.rdf
- 4 Femilk.RDF

Food Crop	Grp	Food Name	RESIDUE (ppm)	RDF #	Adj.FactorsCode	
					#1	#2
318 D		Milk-nonfat solids	0.005000	4	1.000	0.040
319 D		Milk-fat solids	0.005000	4	1.000	0.040
320 D		Milk sugar (lactose)	0.005000	4	1.000	0.040
321 M		Beef-meat byproducts	0.500000	1	1.000	0.120
322 M		Beef-other organ meats	0.500000	1	1.000	0.120
323 M		Beef-dried	0.500000	1	1.920	0.120
324 M		Beef-fat w/o bones	2.000000	2	1.000	0.120
325 M		Beef-kidney	0.500000	1	1.000	0.120
326 M		Beef-liver	0.500000	1	1.000	0.120
327 M		Beef-lean (fat/free) w/o bones	0.500000	1	1.000	0.120
342 M		Pork-meat byproducts	0.100000	3	1.000	0.090
343 M		Pork-other organ meats	0.100000	3	1.000	0.090
344 M		Pork-fat w/o bone	0.100000	3	1.000	0.090
345 M		Pork-kidney	0.100000	3	1.000	0.090
346 M		Pork-liver	0.100000	3	1.000	0.090
347 M		Pork-lean (fat free) w/o bone	0.100000	3	1.000	0.090
398 D		Milk-based water	0.005000	4	1.000	0.040

Summary of Residue Distribution Files (RDF) listed in C:\Dressac\053301a.R96

RDF #	File Name	N residues w freq's	N residues w/o freq's	N LODs	LOD Value	N Zeros
1	Febeefot.rdf	1	0	0	0	88
2	Febeeffa.rdf	1	0	0	0	88
3	Feporkal.rdf	1	0	0	0	91
4	Femilk.RDF	1	0	0	0	96

9823

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

U.S. Environmental Protection Agency Ver. 6.78
 DEEM ACUTE analysis for FENTHION (1989-92 data)
 Residue file: 053301a.R96 Adjustment factor #2 NOT used.
 Analysis Date: 10-11-1999/22:14:12 Residue file dated: 10-11-1999/20:34:32/8
 Acute Reference Dose (aRfD) = 0.000700 mg/kg body-wt/day
 NOEL (Acute) = 0.070000 mg/kg body-wt/day
 MC iterations = 1000 MC list in residue file MC seed = 1026
 Run Comment: Acute UF = 100X; Chronic UF = 300X. FQPA factor removed, therefore RfD = PAD

Summary calculations:

	95th Percentile			99th Percentile			99.9th Percentile		
	Exposure	% aRfD	MOE	Exposure	% aRfD	MOE	Exposure	% aRfD	MOE
U.S. pop - all seasons:	0.000603	86.21	115	0.001504	214.87	46	0.003295	470.72	21
All infants (<1 year):	0.000085	12.20	819	0.001386	197.97	50	0.004072	581.67	17
Nursing infants (<1 year):	0.000008	1.21	8241	0.001394	199.19	50	0.003413	487.57	20
Non-nursing infants (<1 yr):	0.000190	27.11	368	0.001269	181.28	55	0.004422	631.69	15
Children (1-6 years):	0.001209	172.70	57	0.002745	392.15	25	0.005743	820.47	12
Children (7-12 years):	0.000878	125.38	79	0.001956	279.45	35	0.003752	536.01	18
Females (13-19 yrs/np/nn):	0.000575	82.11	121	0.001295	185.03	54	0.002902	414.56	24
Females (20+ years/np/nn):	0.000459	65.53	152	0.001118	159.73	62	0.002201	314.44	31
Females (13-50 years):	0.000504	72.01	138	0.001186	169.43	59	0.002374	339.15	29
Males (13-19 years):	0.000743	106.19	94	0.001456	208.03	48	0.002673	381.84	26
Males (20+ years):	0.000573	81.89	122	0.001303	186.21	53	0.002519	359.84	27

10723

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

U.S. Environmental Protection Agency Ver. 6.78
 DEEM ACUTE analysis for FENTHION (1989-92 data)
 Residue file: 053301a.R96 Adjustment factor #2 NOT used.
 Analysis Date: 10-11-1999/22:14:11 Residue file dated: 10-11-1999/20:34:32/8
 Acute Reference Dose (aRfD) = 0.000700 mg/kg body-wt/day
 NOEL (Acute) = 0.070000 mg/kg body-wt/day
 MC iterations = 1000 MC list in residue file MC seed = 1026
 Run Comment: Acute UF = 100X; Chronic UF = 300X. FQPA factor removed, therefore RfD = PAD

U.S. pop - all seasons	Daily Exposure Analysis 1/ (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000095	0.000096
Standard Deviation	0.000311	0.000313
Margin of Exposure 2/	738	729
Percent of aRfD	13.55	13.71

Percent of Person-Days that are User-Days = 98.77%

Estimated percentile of user-days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000274	39.20	255
20.00	0.000000	0.00	>1,000,000	95.00	0.000608	86.80	115
30.00	0.000000	0.00	>1,000,000	97.50	0.000965	137.92	72
40.00	0.000000	0.00	>1,000,000	99.00	0.001509	215.51	46
50.00	0.000000	0.07	153,715	99.50	0.001987	283.79	35
60.00	0.000001	0.19	52,183	99.75	0.002484	354.80	28
70.00	0.000010	1.40	7,137	99.90	0.003302	471.68	21
80.00	0.000046	6.58	1,520				

Estimated percentile of per-capita days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000272	38.80	257
20.00	0.000000	0.00	>1,000,000	95.00	0.000603	86.21	115
30.00	0.000000	0.00	>1,000,000	97.50	0.000961	137.29	72
40.00	0.000000	0.00	>1,000,000	99.00	0.001504	214.87	46
50.00	0.000000	0.06	163,885	99.50	0.001981	282.95	35
60.00	0.000001	0.19	53,952	99.75	0.002477	353.91	28
70.00	0.000009	1.36	7,374	99.90	0.003295	470.72	21
80.00	0.000045	6.45	1,550				

1/ Analysis based on all three-day participant records in CSFII 1989-92 survey.
 2/ Margin of Exposure = NOEL/ Dietary Exposure.

All infants (<1 year)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000042	0.000079
Standard Deviation	0.000289	0.000393
Margin of Exposure	1,667	884
Percent of aRfD	6.00	11.30

Percent of Person-Days that are User-Days = 53.05%

11723

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

All Infants (cont'd)

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000047	6.64	1,505
20.00	0.000000	0.00	>1,000,000	95.00	0.000384	54.92	182
30.00	0.000000	0.00	>1,000,000	97.50	0.000969	138.40	72
40.00	0.000000	0.00	>1,000,000	99.00	0.001986	283.68	35
50.00	0.000000	0.00	>1,000,000	99.50	0.002980	425.66	23
60.00	0.000000	0.00	>1,000,000	99.75	0.003509	501.35	19
70.00	0.000000	0.00	>1,000,000	99.90	0.004881	697.24	14
80.00	0.000004	0.56	17,898				

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000009	1.26	7,942
20.00	0.000000	0.00	>1,000,000	95.00	0.000085	12.20	819
30.00	0.000000	0.00	>1,000,000	97.50	0.000452	64.53	154
40.00	0.000000	0.00	>1,000,000	99.00	0.001386	197.97	50
50.00	0.000000	0.00	>1,000,000	99.50	0.002100	300.02	33
60.00	0.000000	0.00	>1,000,000	99.75	0.003041	434.37	23
70.00	0.000000	0.00	>1,000,000	99.90	0.004072	581.67	17
80.00	0.000000	0.00	>1,000,000				

Nursing infants (<1 year)

Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User

Mean	0.000037	0.000186
Standard Deviation	0.000293	0.000639
Margin of Exposure	1,909	375
Percent of aRfD	5.24	26.60

Percent of Person-Days that are User-Days = 19.69%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000260	37.15	269
20.00	0.000000	0.00	>1,000,000	95.00	0.001413	201.80	49
30.00	0.000000	0.00	>1,000,000	97.50	0.002757	393.83	25
40.00	0.000000	0.00	>1,000,000	99.00	0.003245	463.55	21
50.00	0.000000	0.00	>1,000,000	99.50	0.003416	487.95	20
60.00	0.000000	0.00	>1,000,000	99.75	0.003501	500.15	19
70.00	0.000000	0.07	146,198	99.90	0.005158	736.91	13
80.00	0.000018	2.56	3,913				

12923

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Nursing Infants (cont'd)

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000000	0.00	>1,000,000
20.00	0.000000	0.00	>1,000,000	95.00	0.000008	1.21	8,241
30.00	0.000000	0.00	>1,000,000	97.50	0.000195	27.81	359
40.00	0.000000	0.00	>1,000,000	99.00	0.001394	199.19	50
50.00	0.000000	0.00	>1,000,000	99.50	0.002736	390.79	25
60.00	0.000000	0.00	>1,000,000	99.75	0.003157	451.01	22
70.00	0.000000	0.00	>1,000,000	99.90	0.003413	487.57	20
80.00	0.000000	0.00	>1,000,000				

Non-nursing infants (<1 yr)

Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User

Mean	0.000044	0.000066
Standard Deviation	0.000287	0.000349
Margin of Exposure	1,583	1,062
Percent of aRfD	6.32	9.41

Percent of Person-Days that are User-Days = 67.10%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000041	5.83	1,716
20.00	0.000000	0.00	>1,000,000	95.00	0.000333	47.60	210
30.00	0.000000	0.00	>1,000,000	97.50	0.000841	120.08	83
40.00	0.000000	0.00	>1,000,000	99.00	0.001477	211.00	47
50.00	0.000000	0.00	>1,000,000	99.50	0.002451	350.20	28
60.00	0.000000	0.00	>1,000,000	99.75	0.003651	521.54	19
70.00	0.000000	0.00	>1,000,000	99.90	0.004796	685.19	14
80.00	0.000003	0.44	22,702				

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000022	3.19	3,139
20.00	0.000000	0.00	>1,000,000	95.00	0.000190	27.11	368
30.00	0.000000	0.00	>1,000,000	97.50	0.000592	84.53	118
40.00	0.000000	0.00	>1,000,000	99.00	0.001269	181.28	55
50.00	0.000000	0.00	>1,000,000	99.50	0.001974	281.93	35
60.00	0.000000	0.00	>1,000,000	99.75	0.003063	437.51	22
70.00	0.000000	0.00	>1,000,000	99.90	0.004422	631.69	15
80.00	0.000000	0.01	>1,000,000				

13823

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Children (1-6 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000192	0.000192
Standard Deviation	0.000567	0.000568
Margin of Exposure	365	364
Percent of aRfD	27.37	27.44

Percent of Person-Days that are User-Days = 99.73%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000589	84.10	118
20.00	0.000000	0.00	>1,000,000	95.00	0.001211	172.94	57
30.00	0.000000	0.00	>1,000,000	97.50	0.001946	277.94	35
40.00	0.000000	0.00	>1,000,000	99.00	0.002746	392.35	25
50.00	0.000001	0.20	49,276	99.50	0.003534	504.93	19
60.00	0.000006	0.80	12,481	99.75	0.004399	628.42	15
70.00	0.000030	4.26	2,344	99.90	0.005746	820.81	12
80.00	0.000129	18.40	543				

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000587	83.93	119
20.00	0.000000	0.00	>1,000,000	95.00	0.001209	172.70	57
30.00	0.000000	0.00	>1,000,000	97.50	0.001944	277.66	36
40.00	0.000000	0.00	>1,000,000	99.00	0.002745	392.15	25
50.00	0.000001	0.20	49,944	99.50	0.003532	504.62	19
60.00	0.000006	0.79	12,582	99.75	0.004397	628.09	15
70.00	0.000030	4.24	2,360	99.90	0.005743	820.47	12
80.00	0.000128	18.32	545				

Children (7-12 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000138	0.000138
Standard Deviation	0.000393	0.000393
Margin of Exposure	507	506
Percent of aRfD	19.72	19.74

Percent of Person-Days that are User-Days = 99.89%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000429	61.35	163
20.00	0.000000	0.00	>1,000,000	95.00	0.000878	125.45	79
30.00	0.000000	0.00	>1,000,000	97.50	0.001318	188.24	53
40.00	0.000000	0.03	394,959	99.00	0.001957	279.51	35
50.00	0.000001	0.17	57,542	99.50	0.002444	349.16	28
60.00	0.000005	0.75	13,262	99.75	0.003007	429.58	23
70.00	0.000026	3.66	2,734	99.90	0.003753	536.08	18
80.00	0.000100	14.24	702				

14823

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Children 7-12 (cont'd.)

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000429	61.30	163
20.00	0.000000	0.00	>1,000,000	95.00	0.000878	125.38	79
30.00	0.000000	0.00	>1,000,000	97.50	0.001317	188.18	53
40.00	0.000000	0.03	397,474	99.00	0.001956	279.45	35
50.00	0.000001	0.17	57,803	99.50	0.002444	349.08	28
60.00	0.000005	0.75	13,305	99.75	0.003006	429.50	23
70.00	0.000026	3.65	2,740	99.90	0.003752	536.01	18
80.00	0.000100	14.22	703				

Females (13-19 yrs/np/nn)

Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User

Mean	0.000088	0.000089
Standard Deviation	0.000274	0.000275
Margin of Exposure	792	788
Percent of aRfD	12.61	12.67

Percent of Person-Days that are User-Days = 99.50%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000263	37.62	265
20.00	0.000000	0.00	>1,000,000	95.00	0.000576	82.34	121
30.00	0.000000	0.00	>1,000,000	97.50	0.000859	122.77	81
40.00	0.000000	0.00	>1,000,000	99.00	0.001297	185.24	53
50.00	0.000001	0.07	135,487	99.50	0.001676	239.39	41
60.00	0.000002	0.24	40,917	99.75	0.002028	289.74	34
70.00	0.000012	1.70	5,883	99.90	0.002905	414.98	24
80.00	0.000050	7.08	1,412				

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000262	37.47	266
20.00	0.000000	0.00	>1,000,000	95.00	0.000575	82.11	121
30.00	0.000000	0.00	>1,000,000	97.50	0.000858	122.57	81
40.00	0.000000	0.00	>1,000,000	99.00	0.001295	185.03	54
50.00	0.000001	0.07	138,976	99.50	0.001674	239.12	41
60.00	0.000002	0.24	41,499	99.75	0.002026	289.49	34
70.00	0.000012	1.68	5,960	99.90	0.002902	414.56	24
80.00	0.000049	7.03	1,423				

15723

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Females (20+ years/np/nn)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000065	0.000066
Standard Deviation	0.000220	0.000221
Margin of Exposure	1,071	1,061
Percent of aRfD	9.34	9.42

Percent of Person-Days that are User-Days = 99.14%

Estimated percentile of user-days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000162	23.18	431
20.00	0.000000	0.00	>1,000,000	95.00	0.000461	65.90	151
30.00	0.000000	0.00	>1,000,000	97.50	0.000718	102.54	97
40.00	0.000000	0.00	>1,000,000	99.00	0.001120	160.07	62
50.00	0.000000	0.03	362,692	99.50	0.001399	199.81	50
60.00	0.000001	0.09	112,845	99.75	0.001743	248.94	40
70.00	0.000004	0.57	17,398	99.90	0.002204	314.83	31
80.00	0.000023	3.25	3,080				

Estimated percentile of per-capita days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000161	23.00	434
20.00	0.000000	0.00	>1,000,000	95.00	0.000459	65.53	152
30.00	0.000000	0.00	>1,000,000	97.50	0.000716	102.22	97
40.00	0.000000	0.00	>1,000,000	99.00	0.001118	159.73	62
50.00	0.000000	0.03	379,140	99.50	0.001396	199.47	50
60.00	0.000001	0.09	115,609	99.75	0.001740	248.51	40
70.00	0.000004	0.56	17,789	99.90	0.002201	314.44	31
80.00	0.000022	3.20	3,124				

Females (13-50 years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000073	0.000074
Standard Deviation	0.000238	0.000239
Margin of Exposure	958	949
Percent of aRfD	10.44	10.53

Percent of Person-Days that are User-Days = 99.12%

Estimated percentile of user-days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000199	28.47	351
20.00	0.000000	0.00	>1,000,000	95.00	0.000507	72.40	138
30.00	0.000000	0.00	>1,000,000	97.50	0.000774	110.54	90
40.00	0.000000	0.00	>1,000,000	99.00	0.001188	169.79	58
50.00	0.000000	0.04	262,791	99.50	0.001482	211.76	47
60.00	0.000001	0.11	88,545	99.75	0.001844	263.45	37
70.00	0.000006	0.91	10,981	99.90	0.002377	339.60	29
80.00	0.000030	4.28	2,337				

16823

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Females (13-50 years), cont'd

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000198	28.26	353
20.00	0.000000	0.00	>1,000,000	95.00	0.000504	72.01	138
30.00	0.000000	0.00	>1,000,000	97.50	0.000771	110.20	90
40.00	0.000000	0.00	>1,000,000	99.00	0.001186	169.43	59
50.00	0.000000	0.04	275,014	99.50	0.001480	211.39	47
60.00	0.000001	0.11	90,683	99.75	0.001841	262.99	38
70.00	0.000006	0.89	11,244	99.90	0.002374	339.15	29
80.00	0.000030	4.22	2,370				

Males (13-19 years)

Daily Exposure Analysis
(mg/kg body-weight/day)
per Capita per User

Mean	0.000118	0.000118
Standard Deviation	0.000310	0.000310
Margin of Exposure	593	592
Percent of aRfD	16.85	16.89

Percent of Person-Days that are User-Days = 99.80%

Estimated percentile of user-days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000411	58.76	170
20.00	0.000000	0.00	>1,000,000	95.00	0.000744	106.29	94
30.00	0.000000	0.00	>1,000,000	97.50	0.001092	156.07	64
40.00	0.000000	0.02	554,702	99.00	0.001457	208.10	48
50.00	0.000001	0.13	76,757	99.50	0.001811	258.76	38
60.00	0.000004	0.56	17,936	99.75	0.002261	322.99	30
70.00	0.000021	3.04	3,293	99.90	0.002673	381.92	26
80.00	0.000096	13.76	726				

Estimated percentile of per-capita days exceeding calculated exposure
in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000411	58.67	170
20.00	0.000000	0.00	>1,000,000	95.00	0.000743	106.19	94
30.00	0.000000	0.00	>1,000,000	97.50	0.001092	155.97	64
40.00	0.000000	0.02	561,446	99.00	0.001456	208.03	48
50.00	0.000001	0.13	77,425	99.50	0.001811	258.66	38
60.00	0.000004	0.55	18,047	99.75	0.002260	322.86	30
70.00	0.000021	3.02	3,310	99.90	0.002673	381.84	26
80.00	0.000096	13.72	728				

17923

Attachment 2. Fenthion Probabilistic Acute Dietary Exposure Analysis.

Males (20+ years)	Daily Exposure Analysis (mg/kg body-weight/day)	
	per Capita	per User
Mean	0.000088	0.000089
Standard Deviation	0.000263	0.000264
Margin of Exposure	793	789
Percent of aRfD	12.60	12.66

Percent of Person-Days that are User-Days = 99.51%

Estimated percentile of user-days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000286	40.83	244
20.00	0.000000	0.00	>1,000,000	95.00	0.000575	82.09	121
30.00	0.000000	0.00	>1,000,000	97.50	0.000866	123.67	80
40.00	0.000000	0.00	>1,000,000	99.00	0.001305	186.42	53
50.00	0.000000	0.07	149,022	99.50	0.001666	237.95	42
60.00	0.000001	0.20	50,944	99.75	0.001971	281.61	35
70.00	0.000010	1.50	6,673	99.90	0.002521	360.10	27
80.00	0.000049	6.99	1,429				

Estimated percentile of per-capita days exceeding calculated exposure in mg/kg body-wt/day and corresponding

Perc.	Exposure	% aRfD	MOE	Perc.	Exposure	% aRfD	MOE
10.00	0.000000	0.00	>1,000,000	90.00	0.000285	40.66	245
20.00	0.000000	0.00	>1,000,000	95.00	0.000573	81.89	122
30.00	0.000000	0.00	>1,000,000	97.50	0.000864	123.46	80
40.00	0.000000	0.00	>1,000,000	99.00	0.001303	186.21	53
50.00	0.000000	0.07	152,779	99.50	0.001664	237.70	42
60.00	0.000001	0.19	51,613	99.75	0.001970	281.40	35
70.00	0.000010	1.48	6,760	99.90	0.002519	359.84	27
80.00	0.000049	6.94	1,441				

18723

Attachment 3. Fenthion Chronic Dietary Exposure Analysis.

U.S. Environmental Protection Agency
 DEEM Chronic analysis for FENTHION
 Residue file: C:\Dressac\053301c.R96
 Analysis Date 10-03-1999
 Reference dose (RfD) = 0.00007 mg/kg bw/day
 Comment: Acute UF = 100; Chronic UF = 300 (FQPA SF Removed, Therefore RfD = PAD)

Ver. 6.76
 1989-92 data
 Adjust. #2 used

Residue file dated: 10-03-1999/06:03:51/8

Food Code	Crop Grp	Food Name	RESIDUE (ppm)	Adj. Factors	
				#1	#2
318	D	Milk-nonfat solids	0.000500	1.000	0.040
319	D	Milk-fat solids	0.000500	1.000	0.040
320	D	Milk sugar (lactose)	0.000500	1.000	0.040
321	M	Beef-meat byproducts	0.500000	1.000	0.120
322	M	Beef-other organ meats	0.500000	1.000	0.120
323	M	Beef-dried	0.500000	1.920	0.120
324	M	Beef-fat w/o bones	2.000000	1.000	0.120
325	M	Beef-kidney	0.500000	1.000	0.120
326	M	Beef-liver	0.500000	1.000	0.120
327	M	Beef-lean (fat/free) w/o bones	0.500000	1.000	0.120
342	M	Pork-meat byproducts	0.100000	1.000	0.090
343	M	Pork-other organ meats	0.100000	1.000	0.090
344	M	Pork-fat w/o bone	0.100000	1.000	0.090
345	M	Pork-kidney	0.100000	1.000	0.090
346	M	Pork-liver	0.100000	1.000	0.090
347	M	Pork-lean (fat free) w/o bone	0.100000	1.000	0.090
398	D	Milk-based water	0.000500	1.000	0.040

19923

Attachment 3. Fenthion Chronic Dietary Exposure Analysis.

U.S. Environmental Protection Agency Ver. 6.76
 DEEM Chronic analysis for FENTHION (1989-92 data)
 Residue file name: C:\Dressac\053301c.R96 Adjustment factor #2 used.
 Analysis Date 10-11-1999/20:52:38 Residue file dated: 10-11-1999/20:51:58/8
 Reference dose (RfD, CHRONIC) = .00007 mg/kg bw/day
 COMMENT 1: Acute UF =100; Chronic UF = 300 (FQPA SF Removed, Therefore RfD = PAD)

=====

Total exposure by population subgroup

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.000095	135.6%
U.S. Population (spring season)	0.000095	135.5%
U.S. Population (summer season)	0.000096	137.7%
U.S. Population (autumn season)	0.000096	137.5%
U.S. Population (winter season)	0.000092	131.3%
Northeast region	0.000086	122.6%
Midwest region	0.000103	147.3%
Southern region	0.000101	143.8%
Western region	0.000085	120.9%
Hispanics	0.000109	156.4%
Non-hispanic whites	0.000094	133.8%
Non-hispanic blacks	0.000093	132.4%
Non-hisp/non-white/non-black)	0.000095	135.6%
All infants (< 1 year)	0.000042	60.0%
Nursing infants	0.000036	51.4%
Non-nursing infants	0.000045	63.6%
Children 1-6 yrs	0.000192	274.7%
Children 7-12 yrs	0.000138	196.9%
Females 13-19(not preg or nursing)	0.000088	126.1%
Females 20+ (not preg or nursing)	0.000065	93.5%
Females 13-50 yrs	0.000073	104.7%
Females 13+ (preg/not nursing)	0.000075	106.6%
Females 13+ (nursing)	0.000062	89.1%
Males 13-19 yrs	0.000118	167.9%
Males 20+ yrs	0.000088	126.0%
Seniors 55+	0.000063	90.0%
Pacific Region	0.000081	116.3%

20723

Attachment 3. Fenthion Chronic Dietary Exposure Analysis.

U.S. Environmental Protection Agency Ver. 6.76
 DEEM Chronic analysis for FENTHION (1989-92 data)
 Residue file name: C:\Dressac\053301c.R96 Adjustment factor #2 used.
 Analysis Date 10-11-1999/20:53:12 Residue file dated: 10-11-1999/20:51:58/8
 Reference dose (RfD, CHRONIC) = .00007 mg/kg bw/day
 COMMENT 1: Acute UF =100; Chronic UF = 300 (FQPA SF Removed, Therefore RfD = PAD)

=====

Complete commodity contribution analysis for
 U.S. Population (total)

Crop Group = (M) Meat

Food Name	Residue (ppm)	Adjustment Factors		Exposure Analysis	
				mg/kg body wt/day	Percent of RfD
Beef-meat byproducts	0.500000	1.000	0.120	0.0000006	0.9%
Beef-other organ meats	0.500000	1.000	0.120	0.0000002	0.3%
Beef-dried	0.500000	1.920	0.120	no exposure	
Beef-fat w/o bones	2.000000	1.000	0.120	0.0000428	61.1%
Beef-kidney	0.500000	1.000	0.120	0.0000000	0.0%
Beef-liver	0.500000	1.000	0.120	0.0000003	0.4%
Beef-lean (fat/free) w/o bones	0.500000	1.000	0.120	0.0000456	65.2%
Pork-meat byproducts	0.100000	1.000	0.090	0.0000000	0.0%
Pork-other organ meats	0.100000	1.000	0.090	0.0000000	0.0%
Pork-fat w/o bone	0.100000	1.000	0.090	0.0000010	1.4%
Pork-kidney	0.100000	1.000	0.090	no exposure	
Pork-liver	0.100000	1.000	0.090	0.0000000	0.0%
Pork-lean (fat free) w/o bone	0.100000	1.000	0.090	0.0000030	4.3%
Crop group subtotal				0.0000935	133.5%

Crop Group = (D) Dairy Products

Food Name	Residue (ppm)	Adjustment Factors		Exposure Analysis	
				mg/kg body wt/day	Percent of RfD
Milk-nonfat solids	0.005000	1.000	0.040	0.0000001	0.1%
Milk-fat solids	0.005000	1.000	0.040	0.0000001	0.1%
Milk sugar (lactose)	0.005000	1.000	0.040	0.0000001	0.1%
Milk-based water	0.005000	1.000	0.040	0.0000012	1.7%
Crop group subtotal				0.0000014	2.0%
Population subgroup total				0.0000949	135.6%

=====

2/7/23

Attachment 3. Fenthion Chronic Dietary Exposure Analysis.

Critical Commodity Contribution Analysis for
U.S. Population (total)

Total Exposure = .0000949 mg/kg bw/day

Crop groups with total exposure contribution > 10%
Foods/Foodforms with exposure contribution > 10%

Crop group Food Foodform	Exposure Analysis		
	mg/kg body wt/day	% of Total Exposure	Percent of RfD
Crop Group = (M) Meat			
Beef-fat w/o bones	0.0000428	45.10%	61.14%
Beef-lean (fat/free) w/o bones	0.0000456	48.06%	65.16%
Total for crop group	0.0000935	98.49%	133.53%
Total for crop groups listed above:	0.0000935	98.49%	133.5%

Complete commodity contribution analysis for
Children 1-6 yrs

Crop Group = (M) Meat

Food Name	Residue (ppm)	Adjustment Factors	Exposure Analysis	
			mg/kg body wt/day	Percent of RfD
Beef-meat byproducts	0.500000	1.000 0.120	0.0000018	2.6%
Beef-other organ meats	0.500000	1.000 0.120	0.0000003	0.4%
Beef-dried	0.500000	1.920 0.120	no exposure	
Beef-fat w/o bones	2.000000	1.000 0.120	0.0000918	131.2%
Beef-kidney	0.500000	1.000 0.120	no exposure	
Beef-liver	0.500000	1.000 0.120	0.0000002	0.3%
Beef-lean (fat/free) w/o bones	0.500000	1.000 0.120	0.0000857	122.5%
Pork-meat byproducts	0.100000	1.000 0.090	0.0000000	0.1%
Pork-other organ meats	0.100000	1.000 0.090	0.0000000	0.0%
Pork-fat w/o bone	0.100000	1.000 0.090	0.0000017	2.4%
Pork-kidney	0.100000	1.000 0.090	no exposure	
Pork-liver	0.100000	1.000 0.090	0.0000000	0.0%
Pork-lean (fat free) w/o bone	0.100000	1.000 0.090	0.0000053	7.5%
Crop group subtotal			0.0001869	267.1%

Crop Group = (D) Dairy Products

Food Name	Residue (ppm)	Adjustment Factors	Exposure Analysis	
			mg/kg body wt/day	Percent of RfD
Milk-nonfat solids	0.005000	1.000 0.040	0.0000003	0.4%
Milk-fat solids	0.005000	1.000 0.040	0.0000002	0.3%
Milk sugar (lactose)	0.005000	1.000 0.040	0.0000003	0.4%
Milk-based water	0.005000	1.000 0.040	0.0000046	6.6%
Crop group subtotal			0.0000054	7.7%
Population subgroup total			0.0001923	274.7%

22 9/23

Attachment 3. Fenthion Chronic Dietary Exposure Analysis.

Critical Commodity Contribution Analysis for
 Children 1-6 yrs
 Total Exposure = .0001923 mg/kg bw/day
 Crop groups with total exposure contribution > 10%
 Foods/Foodforms with exposure contribution > 10%

Crop group Food Foodform	-----Exposure Analysis-----		
	mg/kg body wt/day	% of Total Exposure	Percent of RfD
Crop Group = (M) Meat			
Beef-fat w/o bones	0.0000918	47.74%	131.16%
Beef-lean (fat/free) w/o bones	0.0000857	44.58%	122.49%
Total for crop group	0.0001869	97.21%	267.06%
Total for crop groups listed above:	0.0001869	97.21%	267.1%

23823