



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

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM

Date: August 4, 2010

SUBJECT: Aldicarb. REVISED Acute Probabilistic Aggregate Dietary (Food and Drinking Water) Exposure and Risk Assessment Incorporating Revised FQPA Factor.

PC Code: 098301
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Risk Assessment Type: Dietary Aggregate
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Regulatory Action: Reregistration Follow-up
Case No.: 0140
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40 CFR: 180.269

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Note: A typographical error in the version dated 7/15/10 is corrected in this version.

Executive Summary

Acute aggregate dietary (food and drinking water) exposure and risk assessments were conducted using the Dietary Exposure Evaluation Model DEEM-FCID™, Version 2.03 which uses food consumption data from the U.S. Department of Agriculture's (USDA) Continuing Surveys of Food Intakes by Individuals (CSFII) from 1994-1996 and 1998. The analyses were

conducted to support the existing uses of aldicarb and incorporated new toxicity data that modified the Food Quality Protection Act (FQPA) safety factor.

The aldicarb acute dietary exposure assessments were highly refined, incorporating monitoring data from the USDA Pesticide Data Program (PDP) for grapefruit, oranges, orange juice, potatoes, frozen French fries, and sweet potatoes. The orange data were translated to lemons and limes, and the orange juice data were translated to all citrus juices.

For all other commodities, field trial data were used in the assessment, but residues were either very low or nondetectable (soybeans, cottonseed, peanuts, dry beans, and coffee). Sugarbeet and sugarcane were excluded from the assessments, since aldicarb residues would not be expected in the processed commodities as consumed; the existing tolerance for grain sorghum was used in the assessment, but did not contribute to estimated dietary exposure due to the low usage, the low tolerance, and the low consumption.

Percent crop treated (PCT) information was incorporated for all commodities. In addition, extensive processing/cooking data, generally indicating reduction of residues through boiling and juicing, were incorporated into the assessment.

Water was directly incorporated into the assessment. Estimated drinking water concentrations (EDWC) for groundwater were modeled using the Pesticide Root Zone Model (PRZM), and are based on the Georgia cotton/peanut and North Carolina cotton/peanut scenarios, reflecting maximum application rates and minimum well set-backs.

A chronic assessment was not conducted because the toxicity database for aldicarb indicates that cholinesterase inhibition (ChEI) is the most sensitive effect found, the magnitude of cholinesterase inhibition does not increase with continued exposure, and that cholinesterase inhibition is generally reversible within 24 hours at the levels relevant to the dietary risk assessment. The longer-term exposures could be considered as a series of acute exposures, with regard to cholinesterase inhibition. All other effects noted in the sub-chronic and chronic toxicity studies were observed at higher doses. Aldicarb is not carcinogenic.

This assessment assumes that aldicarb has a half-life of two hours in humans. HED also refined the acute aggregate risk from food and groundwater by incorporating the time and amounts consumed for each eating occasion from the USDA CSFII food diaries to estimate exposures and risks on each eating occasion throughout the day and factoring in the cholinesterase-inhibition half-life related to aldicarb exposure. The eating occasion results are based on several assumptions: (i) a 2 hour half-life, (ii) allocation of direct drinking water consumption based on 6 equal and fixed occasions, and (iii) no modifications to the amount of indirect drinking water consumed as reported in the CSFII diaries for infants. For additional characterization to account for variability within the population, HED also conducted the analyses at other half-lives, ranging from one minute to four hours.

The aggregate dietary exposure reflecting the existing uses exceeded the level of concern for infants, children ages 1-2, and children ages 3-5, with exposures at 800%, 440%, and 360%, respectively, of the acute PAD, assuming a half life of 2 hours. Potatoes, citrus, and water are

the greatest contributors to the aldicarb exposure. Even when potatoes and citrus are removed from the estimate, the aggregate (food and drinking water) exposure for infants, children ages 1-2, and children ages 3-5 exceeds the level of concern at 800%, 330%, and 290%, respectively, when incorporating the drinking water estimates from the scenario leading to the highest exposure (GA cotton/peanut).

I. Introduction

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

For acute and non-cancer chronic exposures, HED is concerned when estimated dietary risk exceeds 100% of the PAD. HED is generally concerned when estimated cancer risk exceeds one in one million. References which discuss the acute and chronic risk assessments in more detail are available on the EPA/pesticides web site: "Available Information on Assessing Exposure from Pesticides, A User's Guide," 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 aldicarb was conducted by C. Olinger (2/06/09, D299854).

II. Residue Information

Existing and reassessed tolerances for aldicarb residues in raw agricultural commodities (RACs) are expressed in terms of the combined residues of aldicarb and its cholinesterase-inhibiting metabolites aldicarb sulfoxide [2-methyl-2-(methylsulfinyl)propionaldehyde O-(methyl carbamoyl) oxime] and aldicarb sulfone [2-methyl-2-(methylsulfonyl)propionaldehyde O-(methyl carbamoyl) oxime] (40 CFR §180.269). Reassessed plant commodity tolerances range from 0.02 ppm (sugarcane) to 0.5 ppm (potatoes).

The residue chemistry database for aldicarb is largely complete (C. Swartz, Residue and Product Chemistry Chapters of the HED RED; DP Barcode D266396, 6/2/2000); additional studies have been required to determine appropriate tolerances for residues in grain sorghum forage, cottonseed, and cotton gin by-products (gin trash). Aldicarb is generally applied early in the growing season, and residues tend to be low or non-detectable in harvested RACs, with the exception of potatoes, sweet potatoes, and citrus commodities. In field trials for these commodities, aldicarb *per se* is typically at or just above the limit of detection (LOD); however, residues of aldicarb sulfoxide and/or aldicarb sulfone are detected more often and at higher levels than that of aldicarb. Aldicarb sulfoxide residues are found more frequently than the sulfone, and tend to be higher than sulfone residues when both are present. In monitoring data, aldicarb

per se is rarely detected. Aldicarb sulfoxide is considered to be as potent as the parent in terms of toxicity, while the sulfone is less potent.

Sugarbeet and sugarcane were excluded from the assessments, since aldicarb residues would not be expected in the processed commodities as consumed; the existing tolerance for sorghum was used in the assessment, but did not contribute to estimated dietary exposure due to the low usage, the low tolerance, and the low consumption.

In the past, monitoring data have shown that individual or combined aldicarb residues higher than the tolerance may occur in single potato (and sweet potato) tubers. Due to concerns for acute dietary risk associated with these higher residues, the registrant voluntarily canceled use on potatoes in 1990, and subsequently generated extensive field trial data, including both composite and single tuber residue measurements for aldicarb and its metabolites in potatoes. These data showed that residues in composite samples would not exceed the reassessed tolerance of 0.5 ppm provided positive displacement application (PDA) equipment is used during application of the pesticide. In addition, acute dietary exposure associated with residues in individual potatoes was considered below the Agency's level of concern. The use on potatoes was reinstated in 9/95, and all current labels specify use of PDA equipment for treatment of potatoes, citrus, and sweet potatoes.

In general, residue data submitted in support of registration and reregistration were generated using an analytical method, similar to the enforcement method, which converts all residues to aldicarb sulfone. For the more recent field trial data and for market basket and single tuber analyses, residue values for aldicarb *per se* and each of its metabolites were generated individually. Previous dietary assessments have converted the individual residues to aldicarb sulfone, but the toxicity endpoint is based on the toxicity of aldicarb *per se*. Therefore, after the risk was calculated, a correction was done to obtain the risk for aldicarb. **In this assessment, the residues are reported on an aldicarb basis, to allow for a direct comparison to the aldicarb toxicity, and to eliminate the correction.**

In the case of field trial data, which is reported on an aldicarb sulfone basis, or monitoring data where the residues had already been combined (on a sulfone basis), the conversion to the aldicarb basis is done using the following formula, which accounts for the differences in molecular weights:

$$\text{Aldicarb residues} = \text{aldicarb sulfone residues (ppm)} \times 0.86$$

In the case of the newer PDP monitoring data where the residues are reported individually, the total residue was then calculated as aldicarb using the following formula, which accounts for the difference in molecular weights of the parent and two metabolites:

$$\text{Total residue (as aldicarb)} = \text{aldicarb} + (\text{aldicarb sulfone} \times 0.86) + (\text{aldicarb sulfoxide} \times 0.92)$$

In order to incorporate non-detectable residues into the exposure assessment, HED used the current policy [refer to ChemSAC memo dated 5/19/98 and HED SOP 99.6] of assigning residue values of ½ LOD to these samples. If the residues were determined as the sulfone, then the ½

LOD for the total residue determined as the sulfone was used in the analysis. When the parent and metabolites were determined individually, using a ½ LOD of 0.005 ppm (i.e., LOD = 0.01 ppm) for aldicarb and each of its metabolites, for example, the combined ½ LOD is as follows:

$$\text{Total } \frac{1}{2} \text{ LOD residue (ppm)} = 0.005 + (0.005 \times 0.86) + (0.005 \times 0.92) = 0.0139 \text{ ppm}$$

A detailed discussion of use patterns, available field trial and monitoring data, and use of the data to calculate anticipated residues and generate residue distribution files for the acute dietary exposure assessments are found in Attachment 1.

Monitoring Data

Extensive monitoring data for aldicarb and its sulfoxide and sulfone metabolites have been generated in numerous commodities through the USDA PDP. The USDA PDP was specifically designed for risk assessment; analysts prepare samples in a manner similar to typical consumer practices, such as washing, coring/pitting, and/or peeling. The PDP samples are composites collected at large-scale distribution centers, just prior to sale in grocery stores, and are more likely to reflect “dinner plate” residues.

Previous assessments have used special monitoring studies (conducted by the registrant or PDP) that have analyzed individual units such as potatoes and oranges. However, these studies are over 10 years old and may not be representative of current practices. HED has used the most recent data generated by PDP in this assessment. Since the samples in recent PDP monitoring data are composites, there may be individual units (within the composite sample) that have higher residues, as well as individual units that have lower residues. The 1997 single serving PDP data showed that the residue in an individual potato could be twice as high as the residue in a 10 potato composite sample (C. Swartz, 9/10/02, D266397). A summary of the PDP monitoring data is presented in Table 1 below. All of the PDP data included in the table were used in this assessment, with the exception of the data for peanut butter. Although residues of aldicarb were never detected by PDP in peanut butter, the combined anticipated residue estimated from the field trial data is lower than that from PDP, because of the analytical method used in the field trials.

Table 1. Summary of PDP Data for Aldicarb, Aldicarb Sulfoxide, and Aldicarb Sulfone

Year	No. of Samples with Detectable Residues	Total No. of Samples Analyzed	Detect Rate	Max PCT	Average Aldicarb LOD	Average Sulfoxide LOD	Average Sulfone LOD	Average Combined ½ LODs	Range of Aldicarb Detects (No. of Detects)	Range of Aldicarb Sulfoxide Detects (No. of Detects)	Range of Aldicarb Sulfone Detects (No. of Detects)	
Potatoes												
2008	30	744	4.0	15	0.00357	0.00299	0.00415	0.00494	N/A	0.002-0.062 (14)	0.002-0.34 (30)	
2002	12	370	3.2	15	0.0177	0.0344	0.0327	0.0387	N/A	0.045-0.186 (12)	0.035-0.062 (2)	
2001	12	733	1.6	15	0.0177	0.0345	0.0350	0.0398	N/A	0.045-0.43 (12)	0.035-0.11 (9)	
2000	3	369	0.8	15	0.0177	0.0527	0.0595	0.0587	N/A	0.045-0.32 (3)	0.035-0.125 (2)	
Frozen Potatoes												
2007	32	800	4.0	15	0.00277	0.00284	0.00332	0.00412	N/A	0.002 - 0.021 (31)	0.002 - 0.004 (14)	
2006	61	744	8.2	15	0.00282	0.00222	0.00343	0.00390	N/A	0.002 - 0.039 (60)	0.002 - 0.02 (23)	
Sweet Potatoes												
2008	1	184	0.5	5	0.00912	0.00853	0.00971	0.0127	N/A	0.041 (1)	0.027 (1)	
2004	8	739	1.1	5	0.00912	0.00259	0.00406	0.00749	N/A	0.0027-0.077 (8)	0.003-0.06 (7)	
2003	8	734	1.1	5	0.0103	0.00897	0.00751	0.0125	N/A	0.0027-0.083 (8)	0.003-0.023 (4)	
Grapefruit												
2006	4	216	1.8	55	0.00708	0.005	0.009	0.00971	N/A	0.008 - 0.063 (4)	N/A	
2005	0	214	0	55	0.007	0.00699	0.00701	0.00973	N/A	N/A	N/A	
Orange												
2005	2	741	0.3	35	0.00910	0.00854	0.00971	0.0126	N/A	0.0304, 0.0147	N/A	
2004	0	742	0	35	0.0106	0.0149	0.0156	0.0188	N/A	N/A	N/A	
2001	4	745	0.5	35	0.012	0.00989	0.00817	0.0141	N/A	0.0119 - 0.0229	N/A	
2000	3	744	0.4	35	0.012	0.00994	0.00820	0.0141	N/A	0.0119	N/A	
Orange Juice												
2006	37	557	6.6	35	0.00496	0.00429	0.00544	0.00680	N/A	0.008 (9)	N/A	
2005	9	744	1.2	35	0.00922	0.00855	0.00971	0.0127	N/A	0.002-0.005 (37)	N/A	
2004	0	186	0	35	0.0106	0.0149	0.0132	0.0178	N/A	N/A	N/A	
Peanut Butter												
2006	0	662	0	40	0.01	0.01	0.01	0.0139	N/A	N/A	N/A	
2000	0	716	0	40	0.01	0.012	0.014	0.0165	N/A	N/A	N/A	

Average of ½ limits of detection (LODs) on an aldicarb basis for non Detects calculated using following formula:
Total residue (as aldicarb) = (½ aldicarb average LOD) + (1/2 aldicarb sulfone average LOD x 0.86) + (1/2 aldicarb sulfoxide average LOD x 0.92).

Processing Factors

Processing factors (PFs) for aldicarb in juices, dried potatoes, cooked potato food forms, dry beans, soybean oil, peanut oil, cottonseed oil, sugarcane, and sugar beet have been generated in processing/cooking studies submitted in support of reregistration. The studies were considered to be acceptable and appropriate for use in risk assessment and tolerance reassessment. The processing/cooking studies indicate a general reduction of residues; since residues are systemic, the reduction in residues is not related to removal of certain inedible commodity fractions, e.g., peel. Application of the aldicarb processing factors to specific food forms in DEEM™ (using Adjustment Factor 1) is described in Table 2.

Table 2. Summary of Aldicarb Processing Factors (PFs) Used in the Dietary Exposure Analyses		
Commodity/Processed Food Form	PF ¹	Application of PF to Relevant Food Forms in DEEM™
Potatoes/dry	0.3	Cooked, boiled, canned, canned:boiled, frozen:cooked
Potatoes/fried	0.62	Potatoes/white-peeled - fried, frozen:fried Potatoes/white-peel only - fried Potatoes/white-whole - fried Sweet potatoes:Fried
	0.19	Potatoes/dry – fried
Potatoes/boiled, cooked	0.5	Potatoes/white-peeled - boiled, canned:cooked; canned:boiled; frozen:cooked Potatoes/white-whole - boiled Sweet potato - boiled, canned:cooked, canned:boiled
	0.15	Potatoes/white-dry - boiled, canned:boiled
Beans, dry	0.05	Baked, boiled, fried, canned:cooked; canned:boiled; cooked:NFS
Peanut/oil	0.18	Peanut/Oil
Soybean/oil	0.3	Soybean/Oil
Cottonseed/oil	0.1	Cottonseed/Oil
Sugarcane/sugar beet	NA	NA

¹ Processing factors were entered into the DEEM™ software as Adjustment Factor 1. The only processed commodity in this assessment for which a DEEM™ default factors was used was peanut butter (1.89).

Usage Information

A revised Screening Level Usage Analysis (SLUA) report dated 4/15/10 for the existing uses was provided and is attached to this document. In addition, the Biological and Economic Analysis Division (BEAD) also estimated the percent crop treated for imported coffee (J. Alsadek, DP No. 376699, 5/6/2010). These memoranda may be found in Attachments 2 and 3.

Residue Input Summary

A summary of residue inputs may be found in Table 3 below. Detailed information on the residue inputs, as well as the residue data file distributions for food commodities, is presented in Attachment 1.

Table3. Summary of Residue Inputs for Aldicarb Acute Dietary Exposure Analyses

Commodity	Max. % CT ¹	Data Source ²	Commodity Classification ³	Food Forms ⁴	Acute RDF ⁵ (RDF #)	Residue Value, ppm ⁶	Processing Factor	Acute AR, ppm ⁷
Beans (dry)	<2.5	FT	B	Baked, boiled, fried, canned; cooked; canned; boiled; cooked; NFS	N/A	0.00855	0.05	0.0000107
Coffee Beans	1	FT/PS	B	Boiled; cooked; NFS	N/A	0.00855	N/A	0.0000855
Cottonseed	35	FT/PS	B	Cottonseed meal	N/A	0.1	0.5	0.0175
Grapefruit - Peeled Fruit	55	PDP	NB PB	Cottonseed oil Uncooked, Cooked (NFS) Canned (NFS)	N/A	0.1	0.1	0.0035
Grapefruit - peel	55	PDP	PB	Peel	4 detects+ 232 ½ LODs + 194 zeroes RDF114	N/A	N/A	N/A
Grapefruit - Juice	55	PDP - Orange Juice	PB	Uncooked, cooked, frozen, canned, juice concentrate	46 detects+ 772 ½ LODs + 669 zeroes RDF109	N/A	N/A	N/A
Lemon	<2.5	PDP - Orange Juice	NB PB	Peeled fruit: uncooked; cooked Peeled fruit: canned; Peel: uncooked, baked, boiled, canned, frozen	9 detects+ 65 ½ LODs + 2898 zeroes RDF112	N/A	N/A	N/A
Lemon - Juice	<2.5	PDP - Orange Juice	PB	canned, frozen; juice concentrate: frozen, cooked, baked, boiled, canned	46 detects+ 0 ½ LODs + 1441 zeroes RDF110	N/A	N/A	N/A
Limes	<2.5	PDP - Orange Juice	NB PB	Peeled fruit Peel: baked, boiled;	9 detects+ 65 ½ LODs + 2898 zeroes RDF112	N/A	N/A	N/A
Lime - Juice	<2.5	PDP - Orange Juice	PB	Juice: uncooked, canned, frozen; Juice concentrate: cooked, frozen	46 detects+ 0 ½ LODs + 1441 zeroes RDF110	N/A	N/A	N/A
Orange - Peeled fruit	35	PDP	NB PB	Uncooked, Cooked (NFS) Canned (NFS); Orange Peel: Uncooked; Cooked (NFS); Boiled; Canned (NFS); Frozen (NFS)	9 detects+ 1031 ½ LODs + 1932 zeroes RDF111	N/A	N/A	N/A

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Commodity	Max % CT ¹	Data Source ²	Commodity Classification ³	Food Forms ⁴	Acute RDF ⁵ (RDF #)	Residue Value, ppm	Processing Factor	Acute AR, ppm ⁷	
Orange Juice	35	PDP	PB	Uncooked, cooked, frozen, canned, juice concentrate	46 detects + 474 ½ LODs + 967 zeroes RDF106	N/A	N/A	N/A	
Peanuts	40	FT/PS	B	Hulled	N/A	0.0047	N/A	0.00188	
				Butter	N/A	0.0047	1.89	0.00355	
				Peanuts, oil	N/A	0.0047	0.18	0.000338	
Pecans	<2.5	FT	PB	Unbaked, baked, boiled	22 detects + 858 zeroes RDF104	N/A	N/A	N/A	
Potatoes/white- dry and flour	15	PDP/PS	B	Uncooked; Cooked; Baked; Frozen, Baked; Dried (NFS and Boiled)	N/A	0.00639	0.3	0.00192	
				Cooked; Boiled; Baked	N/A	0.00639	0.19	0.00121	
				Cooked; Fried	N/A	0.00639	0.15	0.000959	
Potatoes/ white- peeled; peel only; whole; unspecified	15	PDP/PS	NB	Uncooked; Baked; Cooked (NFS)	57 detects + 275 ½ LOD + 1884 zeroes RDF 108	N/A	N/A	N/A	
				Cooked Fried		N/A	0.62	N/A	
				Cooked; boiled		N/A	0.5	N/A	
				Canned; Cooked; Canned; Boiled		N/A	0.5	N/A	
Potatoes/ white- peeled - Frozen	15	PDP/PS	PB	Frozen: Cooked; Frozen: Baked;	93 detects + 139 ½ LOD + 1312 zeroes RDF 113	N/A	N/A	N/A	
				Frozen: Fried		N/A	0.62	N/A	
Sorghum, grain	<2.5	FT	B	Boiled, syrup	N/A	0.2	N/A	0.005	
Soybeans	<2.5	FT/PS	B	Soybean flour (defatted, full fat); mature seeds, dry; protein isolate; sprouted seeds)	N/A	0.00855	N/A	0.000214	
Sugarcane	<2.5	FT/PS	B	Soybean oil	N/A	0.00855	0.3	0.0000641	
				Sugar-cane, refined; sugar-cane/molasses	Processing studies indicate that processing into sugar and molasses removes aldicarb residues, so the residues in sugar and molasses are assumed to be zero.				
				Sugar beet, refined; sugar beet/molasses					
Sugar beets	10	FT/PS	B	Boiled	17 detects + 66 LODs + 1574	N/A	0.5	N/A	
Sweet potato	5	PDP/PS	NB	Fried		N/A	0.62	N/A	

Table 3. Summary of Residue Inputs for Aldicarb Acute Dietary Exposure Analyses

Commodity	Max % CT ¹	Data Source ²	Commodity Classification ³	Food Forms ⁴	Acute RDF ⁵ (RDF #)	Residue Value, ppm ⁶	Processing Factor	Acute AR, ppm ⁷
			NB	Cooked, baked	zeroes	N/A	N/A	N/A
			PB	Canned: cooked, boiled	RDF107	N/A	0.5	N/A

¹ BEAD estimated percent crop treated; Max. = estimated Maximum (for acute exposure).

² FT = Field Trials; PS = Processing Study; PDP = USDA Pesticide Data Program (monitoring data).

³ Refer to HED SOP99.6. NB = Not Blended; PB = Partially Blended; B = Blended.

⁴ Food forms shown in the table are taken directly from the DEEM™ software. NFS = not further specified.

⁵ RDF = Residue Distribution File. Det. = detect; LOD = residues at 1/2 LOD; Z = zeroes.

⁶ Reported for Blended commodities only, as aldicarb.

⁷ For blended commodities, a point estimate was used for the acute analysis, with the %CT and processing factor incorporated into the AR.

III. Drinking Water Data

In association with the RED, the Environmental Fate and Effects Division (EFED) described the potential for aldicarb and its environmental degradates to reach drinking water in the following memorandum: “Drinking Water Exposure Assessment for Total Aldicarb Residues (Parent, Aldicarb Sulfoxide, and Aldicarb Sulfone) Based on the N-Methyl Carbamate Cumulative Risk Assessment” (D333309, 10/23/06, J. Angier and N. Thurman).

Typical application rates were used in the PRZM modeling of groundwater as described in the 10/23/06 memo. The full distribution of values from the modeling leading to the highest water concentrations, the GA Coastal Plain peanut/cotton scenario with a 500 ft. well setback, was used in this assessment. Additional sensitivity runs were conducted using the NC coastal plain peanut/cotton scenario with a 300 ft. well setback. The estimated percentages for the 50th percentile to the maximum value of the distribution are presented in Table 4. The model and its description are available at the EPA internet site: <http://www.epa.gov/oppefed1/models/water/>.

The distribution of estimated drinking water concentrations (EDWCs) produced by PRZMS is directly proportional to the application rate. Therefore, in order to obtain distributions for application rates other than the typical rate, the entire distribution can be multiplied by a factor based on the proportion of the new rate to the typical rate (personal communication, N. Thurman, 11/20/08). Therefore, a factor was included in DEEM-FCIDTM as factor #1 to adjust from the typical application rate to the maximum application rate. The maximum application rate for peanuts is 4.04x the rate used in the scenarios described in Table 4. Therefore a factor of 4.04 was included as factor 1 in the residue file for the analyses representing the maximum application rates.

The distribution of EDWCs is reported as aldicarb sulfone equivalents. In order to convert the distribution to aldicarb equivalents, a factor of 0.86 was included as factor #2 in DEEM-FCIDTM.

Table 4. Estimated concentrations of total aldicarb residues in private, shallow (30-ft) wells. Concentrations represent typical application rates in high leaching potential soils at the typical rate of 1 kg/ha.

Scenario	Well setback	Concentrations, µg/L						
		Maximum	99 th %ile	95 th %ile	90 th %ile	80 th %ile	75 th %ile	50 th %ile
GA Coastal Plain Peanuts/ cotton	500 ft	3.7	3.4	2.9	2.7	2.5	2.4	1.8
NC Coastal Plain Peanuts/ cotton	300 ft	1.3	1.2	1.1	1.0	0.9	0.8	0.6

IV. DEEM-FCIDTM Program and Consumption Information

Aldicarb acute dietary exposure assessments were conducted using the Dietary Exposure Evaluation Model software with the Food Commodity Intake Database DEEM-FCIDTM, 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 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.

The acute adverse effect of cholinesterase inhibition tends to reverse itself within hours following exposure to aldicarb. The available toxicological data, as described in Section V below, indicates that aldicarb has an estimated half-life for red blood cell (RBC) cholinesterase (ChE) inhibition of two hours based on data from rats and human subjects. Since the food diaries used by DEEM-FCID™ (Version 2.03) Model are based on total daily intake, the estimated risks produced by this software are overestimates, to the extent that foods and drinking water are consumed throughout the day, rather than during only one event. To provide a better approximation of the potential exposure leading to peak RBC ChE inhibition, potential exposure from food and/or water to aldicarb was computed incrementally throughout the day. This computation was made by incorporating information on the time of day and amounts consumed during each occasion from the USDA CSFII food diaries. The potential for accumulation of toxicity was accounted for by computing the degree to which exposures could be discounted between exposure occasions, assuming a two-hour half-life. Additional sensitivity runs were conducted assuming a one minute, one hour, and four hour half-life. Further discussion of the methodology used to compute the exposure based on the eating and drinking occasions may be found in a 2006 memo by S. Nako (D299889, 11/1/2006).

V. Toxicological Information

The Agency evaluated the toxicity profile for aldicarb and considered the human acute oral study to be appropriate for assessment of the acute dietary exposure and risks. A chronic assessment

was not conducted because the toxicity database for aldicarb indicates that cholinesterase inhibition is the most sensitive effect found, the magnitude of cholinesterase inhibition does not increase with continued exposure, and that cholinesterase inhibition is generally reversible within 24 hours at the levels relevant to the dietary risk assessment. The longer-term exposures could be considered as a series of acute exposures, with regard to cholinesterase inhibition. All other effects noted in the sub-chronic and chronic toxicity studies were observed at higher doses. Aldicarb is not carcinogenic.

The intentional dosing human toxicity study used in this dietary assessment has been reviewed by EPA's Human Studies Review Board (HSRB), as required by EPA's Human Subjects Protections rule, 40 CFR Part 26 (effective April 7, 2006). The Agency presented the human oral study to the HSRB at a meeting on April 2 – 4, 2006. The HSRB discussed the study extensively during this meeting and concluded that the cholinesterase data from the aldicarb human study were reliable for use in the aldicarb single chemical, aggregate risk assessment. Additionally, it was concluded that there was no clear and convincing evidence of significant deficiencies in the ethical procedures that could have resulted in serious harm (based on the knowledge available at the time the study was conducted), nor that information provided to participants seriously impaired their informed consent.

Recently the registrant submitted a Comparative Cholinesterase Assay (CCA), which the Agency has reviewed (L. Taylor, 7/13/10, D376136) and used to modify the FQPA factor for aldicarb (C. Olinger D299879, 7/14/10). A summary of the doses and endpoints relevant to dietary exposure assessment are shown in Table 5 below.

Exposure Scenario	Point of Departure	Uncertainty/FQPA Safety Factors¹	RfD, PAD, Level of Concern	Study and Toxicological Effects
Acute Dietary: General US Population	BMDL ₁₀ = 0.013 mg/kg	FQPA SF = 4.8X = UF _{CS} UF _H = 10 UF _{interspecies} = 1x	Acute RfD = 0.001 mg/kg/day aPAD = 0.00027 mg/kg/day	human study RBC ChEI [MRID Nos. 43829602, 45068601, 43442302, 43442305, & 42373001]
Chronic Dietary: General US Population	A quantitative chronic assessment was not conducted because the toxicity database for aldicarb indicates that the magnitude of ChEI does not increase with continued exposure, due to the reversibility of ChEI (< 24 hours). The longer-term exposures could be considered as a series of acute exposures.			
Cancer	Aldicarb is classified as not likely to be carcinogenic to humans, based on the lack of evidence of carcinogenicity in studies in rats and mice and the absence of a mutagenicity concern. Therefore, a dietary exposure assessment for cancer risk assessment is not required.			

¹ 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_H = potential variation in sensitivity among members of the human population (intraspecies). UF_{interspecies} = extrapolation of rodent to human is not warranted due to the PoD based on human RBC cholinesterase data. FQPA SF = FQPA Safety Factor. PAD = population adjusted dose (a = acute, c = chronic). RfD = reference dose. UF_{CS} = uncertainty factor based on the comparative sensitivity of the young, based

on the CCA study. N/A = not applicable. BMDL₁₀ = Benchmark Dose estimate based on the lower 95% confidence interval where 10% ChEI would be observed.

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 6 are for the general U.S. Population, all infants (<1 year old), children 1-2, children 3-5, children 6-12, youth 13-19, females 13-49, adults 20-49, and adults 50+ years.

Results of Acute Dietary Exposure Analysis

Results for food alone and food and drinking water are reported in Table 6 at the 99.9th percentile of exposure.

Table 6. Results of Acute Dietary (Food and Drinking Water) Exposure Analysis Using DEEM-FCID™ at the 99.9th Percentile of Exposure Using Drinking Water Concentrations from GA Cotton/Peanut 500 ft Well Set-back Scenario					
Population Subgroup	aPAD (mg/kg/day)	Food Alone		Food and Drinking Water/ GA Cotton/Peanut Scenario	
		Exposure (mg/kg/day)	% aPAD as aldicarb	Exposure (mg/kg/day)	% aPAD as aldicarb
General U.S. Population	0.00027	0.000423	160	0.00176	650
All Infants (< 1 year old)	0.00027	0.000731	270	0.00428	1600
Children 1-2 years old	0.00027	0.000866	320	0.00218	810
Children 3-5 years old	0.00027	0.000737	270	0.00195	720
Children 6-12 years old	0.00027	0.000459	170	0.00127	470
Youth 13-19 years old	0.00027	0.000370	140	0.00133	500
Adults 20-49 years old	0.00027	0.000312	120	0.00138	510
Adults 50+ years old	0.00027	0.000289	110	0.00103	380
Females 13-49 years old	0.00027	0.000304	110	0.00134	500

Bolded Values indicate dietary exposures exceeding the level of concern, 100% of the aPAD.

Since the risks exceed the level of concern, additional sensitivity runs removing various crops, were conducted to determine the foods leading to the highest exposures. The results of these analyses are presented in Tables 7 and 8. A brief description of each scenario is provided below:

- 1) Food and water: all commodities for which a tolerance is established; GA cotton/peanut scenario for groundwater, with a 500 ft. well set-back;
- 2) Food alone: all commodities for which a tolerance is established;
- 3) Food alone: all commodities with current registrations; registrations for several commodities were cancelled as a result of the RED (note that the dietary analysis indicates that these commodities are minor contributors to the food exposure);
- 4) Food alone: all commodities for which a tolerance is established with potatoes removed;
- 5) Food alone: all commodities for which a tolerance is established with potatoes and sweet potatoes removed;
- 6) Food alone: all commodities for which a tolerance is established with citrus removed;
- 7) Food alone: all commodities for which a tolerance is established with citrus and potatoes removed;
- 8) Food and water: all commodities for which a tolerance is established with citrus and potatoes removed; GA cotton/peanut scenario for groundwater, with a 500 ft. well set-back; and
- 9) Food and water: all commodities for which a tolerance is established with citrus and potatoes removed; NC cotton/peanut scenario for groundwater, with a 300 ft. well set-back.

As described above, an eating occasion analysis was also conducted for the three most highly exposed subgroups, infants, children 1-2, and children 3-5. Results of this analysis at the 99.9th level of exposure are presented in Tables 9, 10, and 11.

Food alone would only pass when potatoes and citrus are removed. However, the aggregate food and water assessment, when potatoes and citrus are removed, still exceeds the level of concern for infants. The sensitivity analyses indicate that water is the most significant contributor to the exposure for infants, while potatoes and citrus are most significant for children.

At the time of this memorandum, estimated drinking water concentrations were not available for scenarios associated with dry beans, sweet potatoes, sugar beets, and peanuts/cotton grown outside of the south east coastal plain area.

Chronic Aggregate Risk Assessment

A quantitative chronic aggregate assessment was not conducted as explained in Section V, Toxicological Information.

Table 7. Results of Acute Dietary (Food Alone) Exposure Analysis Using DEEM-FCID™ at the 99.9 th Percentile of Exposure With Various Food Commodities Removed									
Population Subgroup	aPAD (mg/kg/day)	Food Alone/RED Commodities Removed		Food Alone/ Potatoes Removed		Food Alone/ Potatoes and Sweet Potatoes Removed		Food Alone/ Citrus Removed	
		Exposure (mg/kg/day)	% aPAD	Exposure (mg/kg/day)	% aPAD	Exposure (mg/kg/day)	% aPAD	Exposure (mg/kg/day)	% aPAD
General U.S. Population	0.00027	0.000424	160	0.000296	110	0.000295	110	0.000319	120
All Infants (< 1 year old)	0.00027	0.000736	270	0.000359	130	0.000352	130	0.000365	140
Children 1-2 years old	0.00027	0.000864	320	0.000678	250	0.000683	250	0.000617	230
Children 3-5 years old	0.00027	0.000737	270	0.000523	190	0.000524	190	0.000519	190
Children 6-12 years old	0.00027	0.000465	170	0.000297	110	0.000297	110	0.000391	140
Youth 13-19 years old	0.00027	0.000364	130	0.000241	89	0.000239	88	0.000347	130
Adults 20-49 years old	0.00027	0.000316	120	0.000202	75	0.000201	75	0.000265	98
Adults 50+ years old	0.00027	0.000288	110	0.000131	48	0.000130	48	0.000279	100
Females 13-49 years old	0.00027	0.000305	110	0.000202	75	0.000203	75	0.000255	94

Bolded Values indicate dietary exposures exceeding the level of concern, 100% of the aPAD.

Table 8. Results of Acute Dietary (Food and Drinking Water) Exposure Analysis Using DEEM-FCID™ at the 99.9th Percentile of Exposure With Potatoes and Citrus Removed and Two Drinking Water Scenarios							
Population Subgroup	aPAD (mg/kg/day)	Food Alone/ Potatoes and Citrus Removed		Food and Drinking Water/Potatoes and Citrus Removed/GA Cotton Peanut 500ft Water Scenario		Food and Drinking Water/Potatoes and Citrus Removed/NC Cotton Peanut 300ft Water Scenario	
		Exposure (mg/kg/day)	% aPAD	Exposure (mg/kg/day)	% aPAD	Exposure (mg/kg/day)	% aPAD
General U.S. Population	0.00027	0.000012	4	0.00172	640	0.000581	200
All Infants (< 1 year old)	0.00027	0.000044	16	0.00428	1600	0.00144	530
Children 1-2 years old	0.00027	0.000027	10	0.00198	730	0.000666	250
Children 3-5 years old	0.00027	0.000021	8	0.00183	680	0.000610	230
Children 6-12 years old	0.00027	0.000012	4	0.00119	440	0.000403	150
Youth 13-19 years old	0.00027	0.000008	3	0.00129	480	0.000422	160
Adults 20-49 years old	0.00027	0.000007	3	0.00134	500	0.000454	170
Adults 50+ years old	0.00027	0.000008	3	0.000989	370	0.000329	120
Females 13-49 years old	0.00027	0.000006	2	0.00131	490	0.000444	160

Bolded Values indicate dietary exposures exceeding the level of concern, 100% of the aPAD.

Table 9. Infants: DEEM™-Based Eating Occasion (%aPAD) at 99.9 th Percentile of Exposure, Based on Max Persisting Dose At Half Lives Ranging From One Minute to Four Hours											
Commodities	aPAD mg/kg/day	1 Minute ½ Life		1 Hour ½ Life		2 Hour ½ Life		4 Hour ½ Life			
		Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD		
Food and Water; existing uses GA 500ft	0.00027	0.00216	800	0.00216	800	0.00218	800	0.00223	820		
Food alone existing uses	0.00027	0.000584	220	0.000584	220	0.000584	220	0.000584	220		
Food alone; RED commodities removed	0.00027	0.000340	220	0.000612	230	0.000614	230	0.000636	240		
Food alone; potatoes removed	0.00027	0.000602	130	0.000346	130	0.000346	130	0.000344	130		
Food alone; potatoes and sweet potatoes removed	0.00027	0.000318	120	0.000318	120	0.000318	120	0.000334	120		
Food alone; citrus commodities removed	0.00027	0.000356	130	0.000356	130	0.000355	130	0.000356	130		
Food alone; citrus and potato commodities removed	0.00027	4.16E-05	15	4.16E-05	15	4.16E-05	15	4.18E-05	15		
Food and water; citrus and potato commodities removed; GA 500 ft Peanut/Cotton Scenario	0.00027	0.00214	790	0.00214	800	0.00215	800	0.00221	820		
Food and water; citrus and potato commodities removed; NC 300 ft Peanut/Cotton Scenario	0.00027	0.000685	250	0.000685	250	0.000687	250	0.000705	260		

Table 10. Children Ages 1-2: DEEM™-Based Eating Occasion (%aPAD) at 99.9th Percentile of Exposure, Based on Max Persisting Dose At Half Lives Ranging From One Minute to Four Hours

Commodities	aPAD mg/kg/day	1 Minute ½ Life		1 Hour ½ Life		2 Hour ½ Life		4 Hour ½ Life	
		Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD
Food and Water; existing uses GA 500ft	0.00027	0.00115	430	0.00117	430	0.00120	440	0.00126	470
Food alone existing uses	0.00027	0.000731	270	0.000743	280	0.000771	290	0.000792	290
Food alone; RED commodities removed	0.00027	0.000734	280	0.000792	290	0.000794	290	0.000801	300
Food alone; potatoes removed	0.00027	0.000586	220	0.000586	220	0.000586	220	0.000586	220
Food alone; potatoes and sweet potatoes removed	0.00027	0.000586	220	0.000586	220	0.000586	220	0.000586	220
Food alone; citrus commodities removed	0.00027	0.000558	210	0.000558	210	0.000558	210	0.000572	210
Food alone; citrus and potato commodities removed	0.00027	2.3E-05	9	2.33E-05	9	2.33E-05	9	2.33E-05	9
Food and water; citrus and potato commodities removed; GA 500 ft Peanut/Cotton Scenario	0.00027	0.000823	300	0.000838	310	0.000889	330	0.000329	380
Food and water; citrus and potato commodities removed; NC 300 ft Peanut/Cotton Scenario	0.00027	0.000255	94	0.000260	96	0.000282	100	0.000329	120

Table 11. Children Ages 3-5: DEEM™-Based Eating Occasion (%aPAD) at 99.9 th Percentile of Exposure, Based on Max Persisting Dose At Half Lives Ranging From One Minute to Four Hours											
Commodities	aPAD mg/kg/day	1 Minute ½ Life		1 Hour ½ Life		2 Hour ½ Life		4 Hour ½ Life			
		Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD	Exposure mg/kg/day	% aPAD		
Food and Water; existing uses GA 500ft	0.00027	0.000905	340	0.000928	340	0.000977	360	0.00109	400		
Food alone existing uses	0.00027	0.000617	230	0.000617	230	0.000619	230	0.000630	230		
Food alone; RED commodities removed	0.00027	0.000631	230	0.000632	230	0.000632	230	0.000651	240		
Food alone; potatoes removed	0.00027	0.000358	130	0.000358	130	0.000374	140	0.000421	160		
Food alone; potatoes and sweet potatoes removed	0.00027	0.000358	130	0.000358	130	0.000371	140	0.000415	150		
Food alone; citrus commodities removed	0.00027	0.000512	190	0.000512	190	0.000512	190	0.000513	190		
Food alone; citrus and potato commodities removed	0.00027	1.88E-05	7	1.88E-05	7	1.92E-05	7	1.90E-05	7		
Food and water; citrus and potato commodities removed; GA 500 ft Peanut/Cotton Scenario	0.00027	0.000713	260	0.000740	270	0.000779	290	0.000904	340		
Food and water; citrus and potato commodities removed; NC 300 ft Peanut/Cotton Scenario	0.00027	0.000226	84	0.000233	86	0.000248	92	0.000293	110		

VII. Characterization of Inputs/Outputs

This assessment can be considered a highly refined assessment, as the following refinements were incorporated into the assessment:

- monitoring data were used for the most highly consumed commodities;
- percent crop treated were used;
- empirical processing factors were used whenever available; and
- an eating occasion analysis was conducted, which considers the body's ability to recover from cholinesterase inhibition by aldicarb.

Estimated food exposure in these preliminary assessments is almost entirely due to potatoes and citrus. All exposure estimates for potatoes and citrus are based on USDA PDP monitoring data.

Further characterization of inputs and their associated uncertainties is presented below.

Use of Composite Monitoring Data Previous dietary assessments used single-serving monitoring data for potatoes and citrus, for those food forms in DEEM™ that are representative of foods that are not blended to any extent prior to consumption. Examples include a single baked potato, sweet potato, or a single orange. However, the single serving monitoring data are at least 13 years old. The highest value found in a single serving potato sample is less than the highest value found in two of the composite PDP samples. Although some of the PDP monitoring data for potatoes are 10 years old, the use pattern has not changed during this period. The use of the composite sample data may underestimate the risk since residues on some single serving food forms may be higher than the PDP composite values.

In the 1997 PDP special survey, aldicarb and its metabolites were analyzed in 342 composite potato samples collected from states where aldicarb can be applied (FL, ID, OR, and WA). Residues were detected in 20 composite samples, and individual potato tubers (10 per composite) from 16 of the composites with detects were analyzed. The highest combined residue in a composite sample was 0.17 ppm, while the highest residue in an individual tuber was approximately 0.4 ppm, indicating that the residues in the individual samples could be up to 2.4 times that of the composites.

PDP Monitoring Data for Fresh and Frozen Potatoes PDP conducted monitoring studies in 2006 and 2007 on frozen potatoes. The frozen potatoes are representative of French fries, as they had been cut and partially cooked prior to freezing. Therefore, they reflect more blending and potential for residue reduction as compared to the fresh potatoes. In fact the highest residue found in the frozen potatoes was an order of magnitude lower than the highest residue in fresh potatoes. The rate of detects for the frozen potatoes was about twice as high as fresh potatoes, which could reflect the increased blending, but also may be an artifact of the lower detection limits for the more recent frozen potato samples.

Percent Crop Treated Information Estimated maximum percent crop treated values (PCT) were used for all commodities. Comparison of the PCT values from the most recent SLUA to those in prior SLUAs indicate that the use on grapefruit appears to be increasing, while the use on other

commodities has been relatively stable. Prior assessments also used different PCT values for fresh and processed potatoes and citrus, since previous quantitative usage analyses (QUAs) provided different estimates of usage on fresh and processed commodities, and different residue data were used for fresh and processed commodities. Since monitoring data reflecting composite samples were used for potatoes and oranges in this assessment, the use of different PCT values on fresh and processed commodities would have little effect on the risk estimates.

Inclusion of Commodities Cancelled in the RED The use of aldicarb on sorghum, pecans, coffee, sugarcane, and pecans was canceled as a result of the RED. However, the tolerances have not been revoked so these commodities were included in the assessment, since use of aldicarb on these commodities may continue while the existing stocks of aldicarb are used. HED conducted an analysis for food alone excluding these commodities, which indicated that these commodities are insignificant contributors to the dietary exposure to aldicarb.

Translation of Citrus Monitoring Data Orange monitoring data were translated to lemons and limes, and orange juice data were translated to all other citrus juices. This approach is considered appropriate since the use pattern is the same, the residues tend to be spread throughout the commodity, and since field trial data support the establishment of a citrus crop group tolerance. However, residue profiles in individual citrus fruits may differ. Aldicarb is used on only a small percentage of the lemons and limes grown in the US, so any uncertainty associated with translation of the data is not likely to be significant.

Recovery Time Previous assessments have assumed a half-life of approximately 2 hours for humans, which is based on the toxicity study used to establish the point of departure. Studies conducted with rats and humans indicate that the recovery can be dose-dependent; if the dose is higher recovery can take longer. The recent CCA study indicates that the young rats have similar recovery times as adults, though the results are variable. Therefore, the eating occasion analyses were conducted assuming various recovery times to obtain some bounding estimates, from one minute to four hours. Although some differences were observed, in general the risk estimates were similar within a scenario for the different recovery times.

Drinking Water Estimates The drinking water distributions used in this assessment were based on modeling using PRZM at maximum application rates and the minimum well set-back. These distributions represent exposure for the populations that may have the highest exposures: people who live in agricultural areas of the southeastern US coastal plain and obtain their drinking water from wells and do not use any filtration device to reduce pesticide residues. Actual exposures may be lower if farmers in this area do not apply aldicarb at the maximum rates. Extensive monitoring has been conducted for aldicarb and its metabolites in drinking water; the highest value found, 2.9 ppb, is equivalent to the 95th percentile of the scenario leading to the highest drinking water exposure, GA cotton/peanut, at typical rates with a well set-back of 500 ft. The 2.9 ppb value was found in a well in GA. It is noted that the highest value found in NC water monitoring, 1.57 ppb, is higher than the highest value in the distribution for the NC cotton/peanut scenario, typical rates (N. Thurman, DP No. 299866, 5/16/07).

Sensitivity Analyses For sensitivity analyses conducted for food alone, the combined exposure to the following commodities (currently registered) was less than the level of concern: sugar

beets, sweet potatoes, cotton, soybeans, peanuts, and dry beans. However, aggregate assessments using the drinking water scenarios associated with cotton and peanuts grown in the southeastern US coastal plain exceeded the level of concern. Currently water modeling has not been conducted reflecting the use patterns and locations for sugar beets, sweet potatoes, and dry beans, so HED cannot comment whether the aggregate assessment reflecting only those commodities would be less than the level of concern.

Characterization of Children’s Exposure – Commodity Specific Analysis While DEEM™ provides estimates of exposure for a population, at the request of PRD, HED conducted some additional estimates of exposure and associated risks for an individual child consuming a reasonable serving of potatoes. HED estimated margins of exposure (MOEs) for potatoes (baked or French Fries) and orange juice at the 50th and 90th percentiles of consumption in DEEM-FCID™ for children ages 1-2. MOEs greater than 48 are generally not of concern.

Table 12. Commodity Specific (Eater’s Only) Analysis – Children Ages 1-2

	Amount food consumed, g/kg BW/day ¹	Max Aldicarb Residue, ppm (PDP Composite)	Mg aldicarb/ kg BW/day ²	MOE ³
50 th percentile of Consumption, Baked potato ⁵	3.2	0.49	0.00156	8
90 th percentile of Consumption, Baked potato	11.8	0.49	0.0058	2
50 th percentile of Consumption, Fried Potatoes	2.77	0.051	0.000142	92
90 th percentile of Consumption, Fried Potatoes	5.55	0.051	0.000283	46
50 th percentile of Consumption, Orange Juice	14.1 ⁴	0.0167	0.000236	55
90 th percentile of Consumption, Orange Juice	31.4	0.0167	0.000524	25

¹ From DEEM-FCID™.

² Mg aldicarb/kg BW/day = amount food x max aldicarb residue/1000

³ MOE = BMDL₁₀/mg aldicarb day; greater than 48 are generally not of concern; bolded MOEs indicate MOEs less than 48.

⁴ A 15 kg (~33 lb) child drinking 8 oz. (~250 g) would have a consumption of 16.7 g OJ/kg BW.

⁵ Baked Potato Food Form: Potato, tuber w/o peel, cooked, fresh, baked. Fried Potato Food Form: Potato, tuber, w/o peel, cooked, frozen, fried. Orange Juice Food Form: Orange, juice, uncooked, fresh, not specified. No processing factors were applied

VIII. Conclusions

An acute aggregate dietary risk assessment has been conducted for the existing uses incorporating new toxicity data. The assessment was highly refined, incorporating usage information, monitoring data, use of maximum rates in the drinking water assessment, as well as

adjustment for the persisting dose of aldicarb in the body. The aggregate dietary exposure reflecting the existing uses exceeded the level of concern for infants, children age 1-2, and children age 3-5, with exposures at 800%, 440%, and 360%, respectively, of the acute PAD, assuming a ½ life of 2 hours. Potatoes, citrus, and water are the greatest contributors to aldicarb exposure. Even when potatoes and citrus are removed from the estimate, the aggregate (food and drinking water) exposure for infants, children age 1-2, and children ages 3-5 exceeds the level of concern at 800%, 330%, and 290%, respectively, when incorporating the drinking water estimates from the scenario leading to the highest exposure (GA cotton/peanut).

IX. List of Attachments

Attachment 1: Summary of Residue Data Used in the Assessment

Attachment 2: Screening Level Usage Analysis – 4/15/10

Attachment 3: Aldicarb Import Tolerance Assessment for Coffee – 5/6/10

Attachment 4: Residue Input File - Food and Water

Attachment 5: Results File – Food Only

Attachment 6: Results File – Food and Drinking Water (GA 500ft Cotton/Peanut)

Attachment 7: Results File – Food Alone/RED Commodities Removed

Attachment 8: Results File – Food Alone/Potatoes Removed

Attachment 9: Results File – Food Alone/Potatoes and Sweet Potatoes Removed

Attachment 10: Results File – Food Alone/Citrus Removed

Attachment 11: Results File – Food Alone/Potatoes and Citrus Removed

**Attachment 12: Results File – Food and Drinking Water /Potatoes and Citrus Removed
(GA 500ft Cotton/Peanut)**

**Attachment 13: Results File – Food and Drinking Water /Potatoes and Citrus Removed
(NC 300ft Cotton/Peanut)**

Attachment 14: Output from Eating Occasion Analyses

cc: COLinger

Attachment 1. Summary of Residue Data Used in the Assessment

Commodities where monitoring data are used for anticipated residues are discussed first, followed by a discussion of the field trial data. In general, field trial residue data submitted in support of registration and reregistration were generated using an analytical method, similar to the enforcement method, which converts all residues to aldicarb sulfone. Conversion factors used to convert sulfone and sulfoxide residues to the parent compound are discussed in the residue section above.

Potatoes

Pesticide Data Program (PDP) monitoring data are available for fresh potatoes and frozen potatoes. The data for the fresh potatoes were used for all commodities except frozen food forms, where the frozen potato data were used.

Anticipated Residues Based on Fresh Potato PDP Monitoring Data: All Food Forms Except Frozen Potatoes

PDP analyzed for residues of aldicarb and its two metabolites in/on potatoes in the years 2000-2002. Aldicarb was never detected in any of the samples; aldicarb sulfoxide was detected in 27 of the samples with residues ranging from 0.045 to 0.43 ppm; the sulfone was detected in 13 of those 27 samples with residues ranging from 0.035 to 0.125 ppm. A summary of the PDP analyses is presented in Table A1-1 below and the residue data files are presented in Table A1-2.

Table A1-1. Summary of PDP Fresh Potato Analyses						
Year	2008		2002		2001	2000
No. of Samples Analyzed	744		370		733	369
No. of Samples with Detectable Residues of Aldicarb	0		0		0	0
No. of Samples with Detectable Residues of Aldicarb Sulfoxide	14		12		12	3
No. of Samples with Detectable Residues of Aldicarb Sulfone	30		2		9	2
Average of combined ½ LODs (aldicarb basis)	0.00494		0.0387		0.0400	0.0587
Distribution of samples with detects	0.367	0.0836	0.155	0.234	0.0564	0.165
	0.0823	0.0647	0.137	0.0832	0.165	0.322
	0.0644	0.0626	0.146	0.0832	0.0775	0.121
	0.0499	0.0445	0.183	0.0832	0.496	0.174
	0.038	0.0313	0.0832	0.0564	0.0832	0.339
	0.0294	0.0215	0.0564	0.0775	0.183	0.313
	0.0196	0.0196				
	0.0138	0.0132				
	0.0129	0.012				
	0.0110	0.00923				
	0.00831	0.00831				
	0.00831	0.00739				
	0.00739	0.00739				

Table A1-1. Summary of PDP Fresh Potato Analyses					
Year	2008		2002	2001	2000
	0.00645	0.00645			
	0.00553	0.00277			
Weighted Average of ½ LODs				0.0311	
Anticipated Residue for Blended Commodities				0.00639	

Table A1-2. Residue Data File (RDF) Summary: Potatoes Based on PDP Data						
Total No. of Samples	2216		No. of Detects		57	
PCT	15		No. of ½ LOD Samples		275	
No. of "Treated" Samples	332		No. of Zeroes		1884	
RDF 108AldicarbPotatoPDP15						
Potato, fresh, PDP Monitoring Data 2000-2002, 2008						
Estimated Max %CT= 15%						
TOTALZ=1884						
275,0.0311 0.496 0.412 0.367 0.339 0.322 0.313 0.234 0.182 0.182 0.174 0.165 0.165						
0.165 0.155 0.146 0.137 0.121 0.0836 0.0832 0.0832 0.0832 0.0832 0.0832 0.0823						
0.0775 0.0775 0.0647 0.0644 0.0626 0.0564 0.0564 0.0564 0.0564 0.0499 0.0445 0.038						
0.0313 0.0294 0.0215 0.0196 0.0196 0.0138 0.0132 0.0129 0.012 0.0110 0.00923						
0.00831 0.00831 0.00831 0.00739 0.00739 0.00739 0.00645 0.00645 0.00553 0.00277						

Anticipated Residues Based on Frozen Potato PDP Monitoring Data: Partially Blended and Blended Commodities

PDP analyzed for residues of aldicarb and its two metabolites in/on frozen potatoes in the years 2006-2007. Aldicarb was never detected in any of the samples; aldicarb sulfoxide was detected in 91 of the samples with residues ranging from 0.002 to 0.039 ppm; the sulfone was detected in 37 samples with residues ranging from 0.002 to 0.02 ppm. A summary of the PDP analyses is presented in Table A1-3, followed by a Table A1-4, which includes the residue data file used in the assessment.

Table A1-3. Summary of PDP Frozen Potato Analyses								
Year	2007				2006			
No. of Samples Analyzed	800				744			
No. of Samples with Detectable Residues of Aldicarb	0				0			
No. of Samples with Detectable Residues of Aldicarb Sulfoxide	31				60			
No. of Samples with Detectable Residues of Aldicarb Sulfone	14				23			
Average of combined ½ LODs (aldicarb basis)	0.00390				0.00412			
Distribution of samples with detects	0.0215	0.0214	0.0178	0.0177	0.051	0.0462	0.0364	0.0343
	0.0147	0.0147	0.0147	0.0147	0.0336	0.0333	0.0323	0.0295
	0.0147	0.0147	0.0147	0.0147	0.0293	0.0288	0.0268	0.0257
	0.0132	0.0123	0.0105	0.00958	0.0230	0.0212	0.0212	0.0212
	0.00958	0.00774	0.00774		0.0168	0.0152	0.015	0.015 0.015
	0.00645	0.0059	0.0059	0.00553	0.015	0.0133	0.0123	0.0114
	0.00369	0.00369	0.00369	0.00277	0.00958	0.00866	0.00866	0.00737
	0.00277	0.00277	0.00277	0.00277	0.0059	0.0059	0.0059	0.00553
	0.00268				0.00461	0.00461	0.00461	0.00369

Table A1-3. Summary of PDP Frozen Potato Analyses							
Year	2007			2006			
				0.00369	0.00369	0.00277	0.00277
				0.00277	0.00277	0.00277	0.00277
				0.00277	0.00277	0.00277	0.00277
				0.00277	0.00277	0.00277	0.00277
				0.00277	0.00277	0.00277	0.00277
				0.00277	0.00277	0.00277	0.00268
Weighted Average of ½ LODs				0.00401			

Table A1-4. Residue Data File Summary: Frozen Potatoes Based on PDP Data						
Total No. of Samples	1544	No. of Detects	93			
PCT	15	No. of ½ LOD Samples	139			
No. of "Treated" Samples	232	No. of Zeroes	1312			
RDF 113 AldicarbPotatoFrozenPDP15PCT						
Potato, frozen, PDP Monitoring Data 2006-2007						
Estimated Max %CT= 15%						
TOTALZ=1312						
139, 0.00401						
0.051 0.0462 0.0364 0.0343 0.0336 0.0333 0.0330 0.0295 0.0293 0.0288 0.0268 0.0257						
0.0230 0.0215 0.0214 0.0212 0.0212 0.0212 0.0178 0.0177 0.0168 0.0152 0.015						
11,0.0147 0.0133 0.0133 0.0123 0.0123 0.0114 0.0105 0.00958 0.00958 0.00958 0.00866						
0.00866 0.00774 0.00774 0.00737 0.00645 5,0.0059 0.00553 0.00553 0.00461 0.00461						
0.00461 6,0.00369 26,0.00277 0.00268 0.00268						

Sweet Potatoes

PDP analyzed for residues of aldicarb and its two metabolites in/on sweet potatoes in the years 2003-2004. Aldicarb was never detected in any of the samples; aldicarb sulfoxide was detected in 16 of the samples with residues ranging from 0.0027 to 0.083 ppm; the sulfone was detected in 11 of those 16 samples with residues ranging from 0.003 to 0.023 ppm. A summary of the PDP analyses and the residue data file (RDF) are presented in Tables A1-5 and A1-6, respectively.

Table A1-5. Summary of PDP Fresh Sweet Potato Analyses								
Year	2008		2004		2003			
No. of Samples Analyzed	184		739		734			
No. of Samples with Detectable Residues of Aldicarb	0		0		0			
No. of Samples with Detectable Residues of Aldicarb Sulfoxide	1		8		8			
No. of Samples with Detectable Residues of Aldicarb Sulfone	1		7		4			
Average of combined ½ LODs (aldicarb basis)	0.0126		0.00749		0.0125			
Distribution of samples with detects	0.0659		0.0195	0.0408	0.0119	0.00986	0.00814	
			0.0101	0.127	0.0101	0.101	0.0354	0.00814
			0.0334	0.00834		0.00814	0.0123	
						0.00814		
Weighted Average of ½ LODs				0.00999				

Table A1-6. Residue Data File Summary: Partially Blended Sweet Potatoes Based on PDP Data			
Total No. of Samples	1657	No. of Detects	17
PCT	5	No. of ½ LOD Samples	66
No. of "Treated" Samples	83	No. of Zeroes	1574
107SweetPotatoAldicarbPDP5PCT Sweet Potato, fresh, PDP Monitoring Data, 2008, 2003-2004 Estimated Max %CT= 5% TOTALZ=1574 66, 0.0103 0.0195 0.0408 0.0119 0.0101 0.127 0.0101 0.0334 0.00834 0.00986 0.00814 0.101 0.0354 0.00814 0.00814 0.0123 0.00814 0.0659			

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Oranges

Pesticide Data Program (PDP) monitoring data are available for fresh oranges and orange juice. The data for the oranges were used for all commodities except juice, where the orange juice data were used.

Anticipated Residues Based on Fresh Orange PDP Monitoring Data: All Food Forms Except Orange Juice

PDP analyzed for residues of aldicarb and its two metabolites in/on oranges in the years 2000-2001 and 2004-2005. Aldicarb and aldicarb sulfone were never detected in any of the samples; aldicarb sulfoxide was detected in 9 of the samples with residues ranging from 0.005 to 0.025 ppm. Many of the samples from 2000 and 2001 were only analyzed for residues of the sulfoxide and sulfone. Since aldicarb has never been found in any sample analyzed by PDP, HED added in the average ½ LOD (for the year) for those samples not analyzed for aldicarb. A summary of the PDP analyses and the residue data file (RDF) are presented in Tables A1-7 and A1-8, respectively.

Table A1-7. Summary of PDP Fresh Orange Analyses				
Year	2005	2004	2001	2000
No. of Samples Analyzed	741	742	745	744
No. of Samples with Detectable Residues of Aldicarb	0	0	0	0
No. of Samples with Detectable Residues of Aldicarb Sulfoxide	2	0	4	3
No. of Samples with Detectable Residues of Aldicarb Sulfone	0	0	0	0
Average of combined ½ LODs (aldicarb basis)	0.0126	0.0188	0.0141	0.0141
Distribution of samples with detects	0.0304, 0.0147	NA	0.0119 (3), 0.0229	0.0119 (3)
Weighted Average of ½ LODs				0.0149

Table A1-8. Residue Data File Summary: Oranges Based on PDP Data			
Total No. of Samples	2972	No. of Detects	9
PCT	35	No. of ½ LOD Samples	1031
No. of "Treated" Samples	1040	No. of Zeroes	1932

Table A1-8. Residue Data File Summary: Oranges Based on PDP Data

RDF 111 AldicarbOrangePDP
Orange, fresh, PDP Monitoring Data 2000-2001, 2004-2005
Estimated Max %CT= 35%
TOTALZ=1932
1031,0.0149
0.03037
0.02293
0.0147
6,0.01189

Anticipated Residues Based on Orange Juice PDP Monitoring Data

PDP analyzed for residues of aldicarb and its two metabolites in orange juice in the years 2004-2006. Aldicarb and aldicarb sulfone were never detected in any of the samples; aldicarb sulfoxide was detected in 46 of the samples with residues ranging from 0.002 to 0.005 ppm. A summary of the PDP analyses and the residue data file (RDF) are presented in Tables A1-9 and A1-10, respectively.

Table A1-9. Summary of PDP Orange Juice Analyses

Year	2006	2005	2004
No. of Samples Analyzed	557	744	186
No. of Samples with Detectable Residues of Aldicarb	0	0	0
No. of Samples with Detectable Residues of Aldicarb Sulfoxide	37	9	0
No. of Samples with Detectable Residues of Aldicarb Sulfone	0	0	0
Average of combined ½ LODs (aldicarb basis)	0.00680	0.0127	0.0178
Distribution of samples with detects	0.0139, 0.0139 0.0130, 0.0130, 32,0.0111 0.00649	9, 0.0167	N/A
Weighted Average of ½ LODs			0.00111

Table A1-10. Residue Data File Summary: Orange Juice Based on PDP Data

Total No. of Samples	1487	No. of Detects	46
PCT	35	No. of ½ LOD Samples	474
No. of "Treated" Samples	520	No. of Zeroes	967
RDF 106 OJAldicarbPDP35PCT			
Orange Juice, PDP Monitoring Data 2004-2006			
Estimated Max %CT= 35%			
TOTALZ=967			
9,0.0167 2,0.0139 2,0.0130 32,0.0111 0.00649 474, 0.0111			

Grapefruit

Fruit

PDP analyzed for residues of aldicarb and its two metabolites in/on grapefruit in the years 2005-2006. All samples were analyzed for residues of aldicarb sulfone, but only approximately 30% of the samples were also analyzed for residues of aldicarb and aldicarb sulfoxide. In the PDP analyses for other commodities, aldicarb has never been detected in any of the samples; but aldicarb sulfoxide is the residue most frequently detected out of the three analytes. Therefore HED will not consider any of the samples that did not also include analysis of sulfoxide. This introduces some level of uncertainty by limiting the number of samples. However, these limited data were preferred over field trial data. The limited grapefruit PDP data are consistent with the residues found in the orange data, with regard to the residues level found. Lower residues would be expected in grapefruit because of the smaller surface area to weight ration, since the application rates and timing are similar for oranges and grapefruit.

No residues were detected in any of the 214 samples analyzed for all three residues in 2005. In 2006 four samples bore detectable residues of only aldicarb sulfoxide, ranging from 0.008 to 0.063 ppm. There were no detectable residues in 2005 in the additional samples analyzed for only the sulfone. However in 2006, of the samples analyzed only for the sulfone, one sample bore detectable residues of the sulfone at 0.015 ppm.

A summary of the PDP analyses and the residue data file (RDF) are presented in Tables A1-11 and A1-12, respectively.

Table A1-11. Summary of PDP Fresh Grapefruit Analyses		
Year	2006	2005
No. of Samples Analyzed	216	214 ¹
No. of Samples with Detectable Residues of Aldicarb	0	0
No. of Samples with Detectable Residues of Aldicarb Sulfoxide	4	0
No. of Samples with Detectable Residues of Aldicarb Sulfone	0	0
Average of combined ½ LODs (aldicarb basis)	0.00971	0.00973
Distribution of samples with detects	0.0653 0.0534 0.0147 0.0147	NA
Weighted Average of ½ LODs		0.00837

¹ Note that a total of 743 samples were analyzed for only the sulfone in 2006 and 718 in 2005.

Table A1-12. Residue Data File Summary: Fresh Grapefruit Based on PDP Data			
Total No. of Samples	430	No. of Detects	4
PCT	55	No. of ½ LOD Samples	232
No. of "Treated" Samples	236	No. of Zeroes	194
RDF 114GrapefruitAldicarbPDP_55			
Grapefruit, fresh, PDP Monitoring Data 2005-2006			
Estimated Max %CT= 55%			
TOTALZ=194			
232,0.00972			
0.0653 0.0534 0.0147 0.0147			

Grapefruit Juice

According the HED SOP (Translation of Monitoring Data. HED Standard Operating Procedure 99.3, 3/26/99) on translation of commodities, it is acceptable to translate data from orange juice to grapefruit juice provided the use patterns are similar. Oranges and grapefruit do have similar use patterns. In addition, the grapefruit and orange PDP data show relatively similar residue levels. A description of the PDP orange juice data is provided in Table A1-11 above. A summary of the grapefruit juice residue data file based on the PDP orange juice data is presented in Table A1-13 below.

Table A1-13. Residue Data File Summary: Grapefruit Juice Based on Orange Juice PDP Data			
Total No. of Samples	1487	No. of Detects	46
PCT	55	No. of ½ LOD Samples	772
No. of "Treated" Samples	818	No. of Zeroes	669
RDF109 GrapefruitJuiceAldicarbOJPDP55PCT Grapefruit Juice, PB, OJ PDP Monitoring Data 2004-2006 Estimated Max %CT= 55% TOTALZ=669 9,0.0167 2,0.0139 2,0.0130 32,0.0111 0.00649 772, 0.0111			

Lemons/Limes

Fruit

According the HED SOP on translation of commodities, it is acceptable to translate data from oranges juice to lemons and limes provided the use patterns are similar. Oranges and lemons/limes do have similar use patterns. A description of the PDP orange data is provided in Table A1-9 above. A summary of the lemon/lime residue data file based on the PDP orange juice data is presented in Table A1-14 below.

Table A1-14. Residue Data File Summary: Lemons/Limes Based on PDP Data for Fresh Oranges			
Total No. of Samples	2972	No. of Detects	9
PCT	<2.5	No. of ½ LOD Samples	65
No. of "Treated" Samples	74	No. of Zeroes	2898
RDF 112 AldicarbLemonLimePDPOG2_5PCT Orange, fresh, PDP Monitoring Data 2000-2001, 2004-2005 Estimated Max %CT= <2.5% TOTALZ=2898 65,0.0149 0.03037 0.02293 0.0147 6,0.01189			

Juice

As noted above, lemons/limes have a similar use pattern to oranges, so the orange juice data may be translated to lemon/lime juice. A description of the PDP orange juice data is provided in Table A1-11 above. Since the percent crop treated for oranges is considerably greater than that

of lemons and limes the rate of detects in the orange juice data is higher than would be expected for lemons and limes. For example, there was a total of 1487 orange juice sample analyzed for aldicarb residues. Based on a PCT of <2.5%, the total number of samples that would represent treated samples would be 37%; however there were 46 samples bearing detectable residues. Therefore, no samples are assumed to have levels at ½ LOD, and the number of zeroes in the residue distribution was adjusted to be lower than expected to preserve the total number of samples in the monitoring data. A summary of the lemon/lime juice residue data file based on the PDP orange juice data is presented in Table A1-15 below.

Table A1-15. Residue Data File Summary: Lemon/Lime Juice Based on Orange Juice PDP Data			
Total No. of Samples	1487	No. of Detects	46
PCT	<2.5	No. of ½ LOD Samples	0
No. of "Treated" Samples	46	No. of Zeroes	1441
RDF110 LemonLimeJuiceAldicarbOJPDP2_5PCT Lemon and Lime Juice, PB, OJ PDP Monitoring Data 2004-2006 Estimated Max %CT= <2.5% TOTALZ=1441 9,0.0167 2,0.0139 2,0.0130 32,0.0111 0.00649			

Coffee

Use Pattern and %CT Estimates

A tolerance is established for coffee at 0.1 ppm. There are no registered uses of aldicarb on coffee in the US and Puerto Rico (PR). BEAD has estimated that the percent crop treated for imported coffee is 1% (J. Alsadek, DP No. 376699, 5/6/2010).

Residue Data [MRID No. 096131; 016252]

Residue data submitted under MRID No. 096131 indicate residues in mature green coffee beans are at or below the limit of detection (<0.02 ppm) following application at the purported label rates. In conjunction with the Aldicarb Registration Standard, a coffee bean processing study was required to support aldicarb use on coffee. Data submitted under MRID No. 016252 were deemed acceptable. Coffee was treated at 4X the maximum label rate, resulting in detectable residues of 0.11 ppm in green coffee beans. Total aldicarb residues were non detectable at an LOD of 0.02 ppm in roasted beans, spent grounds and instant coffee processed from the treated beans. A summary of the anticipated residue for coffee is presented in the table below.

Table A1-16. Coffee Anticipated Residue	
Residue Value (as Aldicarb Sulfone)	0.01 ppm
Residue Value (as Aldicarb)	0.008550
Coffee Acute AR (Residue x max PCT)	0.0000855

Cottonseed

Use Pattern and %CT Estimates

A tolerance is established for cottonseed at 0.1 ppm. The maximum single at-plant application rate is 1.5 lb ai/A and the maximum single side-dress application rate is 2.1 lb ai/A. The seasonal max is 3.2 lb ai/A in California and 3.6 lb ai/A 24 pounds per acre per year in other states. The minimum pre-harvest interval is 90-days. The estimated maximum percent crop treated is 35 % (SLUA, 9/30/09).

Residue Data [MRID Nos. 102061 and 42436606]

Available field trial data are limited; the studies were conducted prior to 1975, and do not adequately reflect current use patterns. Residue data to support use on cotton were submitted under MRID No. 102061, a literature study generated by USDA [*J. Ag. Food Chem.* 21(3):379-386, 1973]. Seedling cotton grown in 3 different locations, in both dry and irrigated fields, was treated with a single application of granular 10%G at 1.5 lb ai/A, and harvested 90 days later. Residues in treated cotton ranged from nondetectable to 0.21 ppm, and appeared to be lower in the irrigated cotton.

Limited field trials were submitted under MRID No. 42436606 [1992 re-format of a 1973 study]. Residues in cotton treated once at-plant, once at-plant with an additional sidedress application, or once at sidedress only, at rates ranging from 0.5 to 3 lb ai/A. These data are summarized in Table A1-17. Additional crop field trial data were required in the RED. The results of a cottonseed processing study indicate that the residues in cottonseed are reduced by a factors of 10 and 2 when processed into oil and meal, respectively (R. Quick, PP 9F0798, 4/11/69).

Table A1-17. Cottonseed Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Cottonseed Residue, ppm
NC	1 (at-plant)	“Normal Harvest”	0.12
SC	2 (at-plant)	“Normal Harvest”	0.11
	1+2+2 (at-plant + sidedress)	“Normal Harvest”	0.10
MS	0.5(at-plant)	“Normal Harvest”	0.005
	1 (at-plant)		0.01
AR	2 (at-plant)	“Normal Harvest”	0.03
TX	2 (at-plant)	“Normal Harvest”	0.005
	1+3 (at-plant + sidedress)		0.04, 0.08
AZ	2 (sidedress)	“Normal Harvest”	0.03, 0.03
	4 (sidedress)		0.05, 0.06

The data do not adequately represent the existing use pattern, and additional data were requested

in the RED. Therefore, for cottonseed the residue value to be used in the dietary assessment is the existing tolerance 0.1 ppm. The cottonseed anticipated residues are presented in table A1-18.

Table A1-18. Cottonseed Anticipated Residues	
Residue Value	0.1 ppm
Cottonseed Acute AR (Residue x max PCT)	0.035
Cottonseed Oil Acute AR (Residue x PF x PCT)	0.0035
Cottonseed Meal Acute AR (Residue x PF x PCT)	0.0175

Dry Beans

(Directly excerpted from C. Swartz Memo D266397)

Use Pattern and %CT Estimates

Aldicarb applications to dry beans are made at-planting at either 1.1 (CA only) or 2.1 lb ai/A; a post-emergence (up to bloom) application at 2.1 lb ai/A may be made in ID, OR, and WA. A maximum of 1 application per season is permitted, with a PHI of 80 days for the post-emergence application, and a PHI of 90 days for at-planting applications.

Usage estimates provided by BEAD indicate an estimated maximum and weighted average of <2.5 %CT for dry beans. Since dry beans and associated food forms (e.g., baked, boiled, etc.) are considered to be blended, both the acute and the chronic dietary exposure assessments incorporate a residue point estimate for aldicarb in dry beans. The estimated maximum of 2.5% %CT is incorporated into the acute point estimate is applied via Adjustment Factor 2 in the DEEM™ analysis.

Residue Data [MRID No. 135031]

Field trials were conducted in CA, CO, ID, MI, NE, NY, NC, and WA, with application rates ranging from 0.25-3 lb ai/A. Only residues in mature dry seed from field trials conducted at up to 2 lb ai/A are included in the summary table (Table A1-19), shown below. Residues were very low or nondetectable (i.e., residues were assumed to be ½ LOD, or 0.01 ppm) in dry seed harvested from 87-147 days following application.

Table A1-19. Dry Bean Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Dry Bean Residue as Aldicarb Sulfone, ppm
CA (small white)	0.25	129	0.01, 0.01
	0.5		0.01, 0.01
	1.0		0.01, 0.01
CA (blackeye)	0.75	107	0.04, 0.03 *From pods which split during shipping
	1.5		0.11, 0.10 *From pods which split during shipping
CA (pink)	2	103	0.01, 0.01
CA (lima)	0.5	147	0.01, 0.01
	1.0		0.01, 0.01

Table A1-19. Dry Bean Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Dry Bean Residue as Aldicarb Sulfone, ppm
CA (blackeye)	0.5	147	0.01, 0.01
	1.0		0.01, 0.01
CO (pinto)	1.5	106	0.01, 0.01
ID (white)	1.5	121	0.01, 0.01
ID (wax)	1.5	113	0.01, 0.01
MI (white)	1.5	140	0.01, 0.01
NE (great north.)	0.5	112	0.01, 0.01
	1.0		0.01, 0.01
NC (blackeye)	1.0	87	0.01, 0.01
WA (pinto)	0.75	106	0.01, 0.01
	1.5		0.01, 0.01
Average residue in dry beans			0.01 ppm [excludes CA trial w/split pods beans]

The registrant conducted a cooking study in which dry beans (blackeye, red kidney, and field peas) bearing detectable aldicarb residues of 0.10 to 0.49 ppm were cooked for 1, 2 or 3 hours at 100 C. Residues in blackeye peas were 0.49 ppm prior to cooking, and were 0.02 or 0.03 ppm after cooking, resulting in an average cooking factor of 0.05X. This cooking factor is included as adjustment factor 1 in the DEEM™ analysis. Anticipated residues are presented in Table A1-20.

Table A1-20. Dry Bean Anticipated Residues	
Residue Value (as Aldicarb Sulfone)	0.01 ppm
Residue Value (as Aldicarb)	0.008550
Dry Bean (Raw) Acute AR (Residue x max PCT)	0.000214
Dry Bean (Cooked) Acute AR (Residue x PF x PCT)	0.0000107

Peanuts

Use Pattern and %CT Estimates

Aldicarb labels allow application to peanuts via soil incorporation (in-furrow or banded) at planting up to 3 lb ai/A; alternatively, split applications may be made at-planting at 1.5 lb ai/A, with a 1.5 lb ai/A application made at or just prior to peg initiation but no later than 40 days after emergence and prior to last cultivation. The maximum seasonal rate is 3 lb ai/A, with a PHI of 90 days.

Usage estimates provided by BEAD indicate an estimated maximum of 40 %CT.

Residue Data [MRID No 102013]

Field trial data for peanuts were submitted under MRID No. 102013 in support of registration and are summarized in Table A1-21 below. In field trials conducted in AL, FL, GA, NC, OK,

TX, and VA, peanuts were treated at rates of 2, 4 or 6 lb ai/A, either pre-plant, at-plant, or at-pegging, and harvested 118-168 days later. In addition, several trials were conducted in which peanuts were treated with split applications of 2 + 2, 4 + 4, 4 + 2, or 6 + 2 lb ai/A, with the first application at-plant and the second application at pegging, with PHI's of 38-137 days. Total aldicarb residues were measured in green nuts, whole nuts, dry nuts, and, in some cases, the kernel, or edible portion. Residues were generally low or nondetectable, with a method sensitivity (LOD) of 0.01 ppm for whole nuts, dry nut, and green nut, and 0.002 ppm for kernels; the resulting ½ LOD values assigned to nondetectable residues were 0.005 ppm and 0.001 ppm, respectively. Only one field trial conducted in VA used the label rate of 3 lb ai/A, but nuts were harvested at PHIs less than 90 days, and residues in only the green nuts were measured.

A peanut processing study was submitted in association with the original petition (M.J. Nelson, 12/2/73, PP3F1414). Peanuts bearing residues at 0.017 ppm were processed into oil, resulting in residues less than the limit of detection, 0.003. The processing factor for peanut oil is less than 0.18; a processing factor of 0.18 will be incorporated into the assessment. Anticipated residues for peanut commodities are summarized in Table A1-22 below.

Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Kernel Residue, ppm
AL	2 (at-plant)	144	0.001, 0.001
	4 (at-plant)	144	0.001, 0.012
GA	2 (preplant)	121	0.002, 0.001
	4 (preplant)	121	0.002, 0.003
NC	2 (at-plant)	131	0.006, 0.009
	4 (at-plant)	131	0.016, 0.017
TX	2 (at-plant)	114	0.005, 0.005
VA	2 (at-plant)	156	0.007, 0.004
	4 (at-plant)	156	0.003, 0.004
Average residue in peanuts (kernels)			0.0055 ppm

Residue Value (as Aldicarb Sulfone)	0.0055 ppm
Residue Value (as Aldicarb)	0.0047
Peanut (Raw; peanut butter) Acute AR (Residue x max PCT)	0.00188
Peanut Oil Acute AR (Residue x PF x PCT)	0.000338

Pecans

Use Pattern and %CT Estimates

The registrant agreed to withdraw all uses on pecan during reregistration, and the use has been removed from the product label. Usage estimates provided by BEAD indicate that less than 2.5% of the pecan crop is treated with aldicarb. Since the tolerance has not yet been revoked,

pecans will still be included in the dietary risk assessment, incorporating a percent crop treated of 2.5.

Residue Data [MRID Nos. 140487 and 102123]

Residue data submitted under MRID Nos. 140487 and 102123 are identical. In field trials conducted in 1975-1976, pecans grown in GA, AL, SC and MS were treated with single applications of 2 - 38.4 lb ai/A, or with two split applications of 5 lb ai/A. Total aldicarb residues were measured in kernels and shells, and the residues in whole nuts calculated to determine the appropriate tolerance. The method limit of detection was 0.01 ppm, with non-detectable residues assigned a residue value of ½ LOD, or 0.005 ppm. For the purpose of risk assessment, HED is most concerned with residues in pecan kernels (i.e., nuts) reflecting the former maximum label rate (i.e., 5-10 lb ai/A). Data are presented in Table A1-23.

Table A1-23. Pecan Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Residue, as Sulfone, ppm
GA	2	180-197	0.02; 0.005
	4	180-197	0.04; 0.02
AL; SC	5	171-268	0.05; 0.08; 0.005
GA; MS	6	180-197	0.07; 0.01; 0.06; 0.005
GA	8	180-197	0.03; 0.09
GA; AL; SC	10	180-268	0.11; 0.10; 0.01; 0.27; 0.03; 0.05; 0.12; 0.005
GA	5+5 (split)	106	0.17
Average Pecan Residue			0.0614 ppm

The residue values in the above table were multiplied by 0.86 to obtain the residue values in aldicarb equivalents. The acute RDF and the chronic AR are shown in Table A1-24 below.

Table A1-24. Pecan Anticipated Residues	
No. of residue values	22
Total no. of samples [no. residue value/(pct/100)]	880
Total no. of zeroes	858
Pecan RDF	104PecanAldicarbFT2_5 Field Trial Residue Data [MRID No. 102123] Estimated Maximum %CT = 2.5% TOTALZ=858 4,0.0043 2,0.0171 2,0.0256 2,0.0427 2,0.00855 0.0342 0.0684 0.0598 0.0513 0.0769 0.0940 0.0855 0.231 0.103 0.145

Sorghum

Use Pattern and %CT Estimates

The registrant agreed to withdraw all uses on sorghum during reregistration, and the use has been

removed from the product label. Usage estimates provided by BEAD indicate that less than 2.5% of the sorghum crop is treated with aldicarb. Since the tolerance has not yet been revoked, sorghum will still be included in the dietary risk assessment, incorporating a percent crop treated of 2.5.

Sorghum commodities are blended, so the acute anticipated residues are point estimates. The sorghum anticipated residue will be based on the tolerance of 0.2 ppm.

Table A1-25. Sorghum Anticipated Residues	
Residue Value	0.2 ppm
Sorghum Acute AR (Residue x max PCT)	0.005

Soybean

Use Pattern and %CT Estimates

Soybeans may be treated with one at-plant application of aldicarb at rates up to 1.5 ai/A, depending on the geographic location. Labels specify a PHI of 90 days and there is a livestock feeding restriction for forage, hay and straw.

Usage estimates provided by BEAD indicate an estimated maximum of <2.5 %CT.

Residue Data [MRID Nos. 135031; 40884601]

In field trials conducted in AL, AR, IN, NC, OK, SC, TX, and VA, soybeans were treated with one at-plant application of aldicarb at rates ranging from 0.7-3.0 lb ai/A, with PHI's ranging from 126-194 days after application. The LOQ was 0.02 ppm, and therefore nondetectable residues were reported as 0.01 ppm. Results of the field trials are shown in Table A1-26 and the anticipated residues may be found in Table A1-27.

Although soybean processing data were included in MRID No. 135031, these data were considered unacceptable since there were no detectable aldicarb residues in soybeans processed into meal and oil. Additional soybean processing data were submitted under MRID No. 40884601. Following treatment at 12 lb ai/A (4X the maximum label rate), residues in dried soybeans were 0.03 ppm. Residues in soybean meal were 0.05 and 0.04 ppm, while residues in both samples of refined oil were <0.01 ppm. Therefore, the reduction factor for soybean oil is <0.3; a factor of 0.3 will be incorporated into the dietary assessment. For the purpose of dietary exposure assessment, the anticipated residue in refined oil is ½ the LOD for the processing study, or 0.005 ppm.

Table A1-26. Soybean Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Soybean Residue, ppm
AL	3	160	0.01, 0.01
	2		0.01, 0.01

Table A1-26. Soybean Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Soybean Residue, ppm
AR	2	194	0.01, 0.01
	3	160	0.01, 0.01
	3	161	0.01, 0.01
IN	1.5	126	0.01, 0.01
	3		0.01, 0.01
NC	1.5	160	0.01, 0.01
	3		0.01, 0.01
OK	1.5	150	0.01, 0.01
	3.5		0.01, 0.01
SC	1.5	160	0.01, 0.01
	3		0.01, 0.01
	3		0.01, 0.01
	1.5	169	0.01, 0.01
	3		0.01, 0.01
TX	1.5	134	0.01, 0.01
	3		0.01, 0.01
VA	1	147	0.01, 0.01
	1		0.01, 0.01
	1.5	164	0.01, 0.01
	3		0.01, 0.01
	1.5	127	0.01, 0.01
	3		0.01, 0.01
	0.7	166	0.01, 0.01
	1.4		0.01, 0.01
Average residue in soybeans			0.01 ppm

Table A1-27. Soybean Anticipated Residues	
Residue Value (as Aldicarb Sulfone)	0.01 ppm
Residue Value (as Aldicarb)	0.00855
Soybean Acute AR (Residue x max PCT)	0.000214
Soybean Oil Acute AR (Residue x PF x PCT)	0.0000641

Sugarcane

The registrant agreed to withdraw all uses on sugarcane during reregistration, and the use has been removed from the product label. Usage estimates provided by BEAD indicate that less than 2.5% of the sugarcane crop is treated with aldicarb. In addition, processing studies indicated that

aldicarb residues would be removed during processing, so residues in sugar and molasses derived from sugarcane are assumed to be zero in this assessment.

Sugar beet

Use Pattern and %CT Estimates

Aldicarb may be applied to sugar beet soil-incorporated at-planting (or 1 week before planting) at 2.1 - 5 lb ai/A. Alternatively, an at-plant application may be made, followed by an additional application 40-60 days after the initial application; the application rates specified are 2.1 - 3 lb ai/A. Finally, a single post-emergence application can be made at 2.1 - 4 lb ai/A, 30-60 days after planting. Registered labels specify a PHI of 90 days, or 120 days if sugar beet tops are to be fed to livestock. Usage estimates provided by BEAD/OPP indicate an estimated maximum of 10 %CT.

Residue Data [MRID Nos. 35368; 35369; 101966]

Sugar beet tops field trial data submitted under MRID No. 35368 have not been presented, since they are a livestock feed item, and since secondary residues in livestock commodities are not expected to occur.

Field trials described in MRID No. 35369 (1970) were conducted in CO, and included applications at 2 or 4 lb ai/A, with harvest occurring 160 and 176 days later, respectively. Residues in roots were <0.01 ppm, [0.005 ppm] in duplicate root samples from each trial. A range of application rates and timing was incorporated in field trials submitted under MRID No. 101966. In field trials conducted in CA, UT, ID, MI, ND, CO, NC, OH, NM, and WA, single or multiple applications were made at rates ranging from 1-30 lb ai/A, with harvest occurring from 18-238 days after treatment. Very few trials were conducted with either a 120- or 90-day PHI. These trials are summarized below, in Table A1-28.

Table A1-28. Sugar beet Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Sugar beet Residue, ppm
CA	3 (at-plant)	90	0.02
UT	2 (preplant)	90	0.005, 0.005
		120	0.005, 0.005
	4 (preplant)	90	0.02, 0.04
		120	0.01, 0.005
ID	2 (preplant)	90	0.005
		120	0.005
	4 (preplant)	90	0.01
		120	0.01
MI	5 (at-plant)	114	0.03
ND	1.5+1 (at-plant+ post-emergence)	113	0.01

Table A1-28. Sugar beet Field Trial Summary for Risk Assessment			
Trial Location	Appl. Rate (lb ai/A)	PHI (Days)	Total Sugar beet Residue, ppm
	4 (at-plant)	103	0.01
WA	1+1 (at-plant + over foliage)	104	0.005
		110	0.005
Average residue in sugar beet			0.0114 ppm

Sugar Processed Commodities

In conjunction with the field trials summarized above, a processing study was conducted in which roots bearing detectable residues were processed into diffusion juice, thin juice, thick juice, dry pulp, and wet pulp. Although there were detectable residues in the diffusion juice, these residues were found to be unstable following treatment with lime water, which simulates commercial processing. Residues in thin juice and thick juice were generally either 0.005 ppm, or <0.005 ppm. Based on these data, the registrant concluded that there would be no detectable aldicarb residues in beet sugar and molasses processed from treated sugar beet roots. HED concurs with this conclusion; therefore, these commodities should be excluded from dietary exposure analyses conducted for aldicarb.

Attachment 2: Screening Level Usage Analysis – 4/15/10

Aldicarb (098301) Screening Level Usage Analysis (SLUA) Date: April 15, 2010

What is a Screening Level Usage Analysis (SLUA)?

- Available estimates of pesticide usage data for a particular active ingredient that is used on **agricultural** crops in the United States.
- Pesticide usage data obtained from various sources. The data are then merged, averaged, and rounded so that the presented information is not proprietary, business confidential, or trade secret.

What does it contain?

- Pesticide usage data for a **single** active ingredient only.
- Agricultural use sites (crops) that the pesticide is *reported* to be used on.
- Available pesticide usage information from U.S. states that produce 80% or more of a crop, in most cases, or less than 80%, in rare cases, depending on the scope of the survey and available resources.
- Annual percent of crop treated (**average & maximum**) for each agricultural crop.
- Average annual pounds of the pesticide applied for each agricultural crop (i.e., for the states surveyed, not for the entire United States).

What assumptions can I make about the reported data?

- **Average pounds of active ingredient applied** - Values are calculated by merging pesticide usage data sources together; averaging across all observations, then rounding. *Note: If the estimated value is less than 500, then that value is labeled <500. Estimated values between 500 & <1,000,000 are rounded to 1 significant digit. Estimated values of 1,000,000 or greater are rounded to 2 significant digits.)*
- **Average percent of crop treated** - Values are calculated by merging data sources together; averaging by year, averaging across all years, & rounding to the nearest multiple of 5. *Note: If the estimated value is less than 2.5, then the value is labeled <2.5. If the estimated value is less than 1, then the value is labeled <1.*
- **Maximum percent of crop treated** - Value is the single maximum value reported across all data sources, across all years, & rounded up to the nearest multiple of 5. *Note: If the estimated value is less than 2.5, then the value is labeled <2.5.*

What are the data sources used?

- **USDA-NASS** (United States Department of Agriculture's National Agricultural Statistics Service) – pesticide usage data from 2001 to 2007.
- **Private pesticide market research** – pesticide usage data from 2001 to 2007.
- **NPUD 2002** (National Pesticide Use Database) pesticide usage data from the CropLife America Foundation are used *only* if data are not available from the other sources.
- **California Department of Pesticide Regulation (DPR) Pesticide Use Reporting (PUR)** data for 2000 to 2005 when 95% or more of a crop is grown California.

What are the limitations to the data?

- Additional registered uses may exist but are not included because the available surveys do not report usage (e.g., small acreage crops).
- Lack of reported usage data for the pesticide on a crop **does not imply** zero usage.
- Usage data on a particular site may be noted in data sources, but **not quantified**. In these instances, the site would not be reported in the SLUA.
- Non-agricultural use sites (e.g., turf, post-harvest, mosquito control, etc.) are not reported in the SLUA. A separate request must be made to receive these estimates.
- Some sites show some use, even though they are not on the label. This usage could be due to various factors, including, but not limited to Section 18 requests, existing stocks of the chemical, data collection errors, and experimental use permits (EUPs).

April 15, 2010
Screening Level Estimates of Agricultural Uses of Aldicarb (098301)
Sorted Alphabetically

			Percent Crop Ttd.	
	Crop	Lbs. A.I.	Avg.	Max.
1	Almonds +	2,000	<1	<2.5
2	Beans, Green +	2,000	<1	<2.5
3	Cantaloupes +	<500	<1	<2.5
4	Cotton	2,100,000	25	35
5	Dry Beans/Peas	20,000	<2.5	<2.5
6	Grapefruit	100,000	30	55
7	Lemons	<500	<1	<2.5
8	Oranges	400,000	10	35
9	Peanuts	500,000	35	40
10	Pecans	10,000	<1	<2.5
11	Potatoes	300,000	10	15
12	Sorghum	2,000	<1	<2.5
13	Soybeans	20,000	<1	<2.5
14	Sugar Beets	200,000	10	10
15	Sugarcane	20,000	<1	<2.5
16	Sweet Potatoes (NPUD)	8,000	N/C	5
17	Tobacco	10,000	<2.5	5
18	Watermelons +	<500	<1	<2.5

All numbers rounded.

<500 Less than 500 pounds of active ingredient

<2.5 Less than 2.5 percent of crop treated

<1 Less than 1 percent of crop treated

N/C Not Calculated

+ Crops not known to be listed on active end use product registrations or as Section 18 emergency exemptions when this report was run

SLUA data sources include:

USDA-NASS (United States Department of Agriculture's National Agricultural Statistics Service)

Private Pesticide Market Research

NPUD 2002 (National Pesticide Use Database) of the CropLife America Foundation

California DPR (Department of Pesticide Regulation)

These results reflect amalgamated data developed by the Agency and are releasable to the public.

Attachment 3: Aldicarb Import Tolerance Assessment for Coffee – 5/6/10



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D. C. 20460

MAY 06 2010

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Aldicarb Import Tolerance Assessment for Coffee, (DP # 376699),
(PC Code: 098301)

FROM: Jihad Alsadek, Ph.D., Economist *Jihad A Alsadek*
Science Information and Analysis Branch
Biological and Economic Analysis Division (7503P)

TO: Joy Schnackenberg, Chemical Review Manager
Risk Management and Implementation Branch IV
Pesticide Re-evaluation Division (7508P)

This memorandum transmits an assessment of the percent of coffee treated with aldicarb. This is in response to an HED request for determining the percent coffee treated needed for their new aldicarb risk assessment. The aldicarb US registration has been voluntarily cancelled, but a tolerance is still on the books, that is why HED needs coffee percent treated to include in the dietary risk assessment. This value will be a refinement of a previous BEAD number (20%) that was used in a dietary risk assessment (C. Swartz, DP# 266397, 9/10/2002). The data accompanying this memorandum were reviewed by Arthur Grube, Senior Economist.

BEAD used USDA Global Agricultural Trade System (GATS), of the Foreign Agricultural Service (FSA) to identify the countries we import coffee from, and GfK Kynetec I-map Sigma to identify what percent of the crop is treated with aldicarb in the specified import countries. USDA Economic Research Service (ERS) Coffee report was used to identify the crop consumption import share. 2007 Import MT data are multiplied by the country percent crop treated to get the MT treated values for each country. MT treated values are divided by 2007 MT imported numbers to get the percent for import crop treated. Import crop treated is multiplied by the percent consumption share to get corrected percent crop treated, table 1.

Table 1, Refined 2007 Data for Coffee

Crop	Country	2007 MT Imported	Country PCT	MT Treated	Import Crop Treated	Consumption Import Share	Corrected % Crop Treated
Coffee	Brazil	298,074	1.2	3,577			
	Colombia	243,834	0.1	244			
	Guatemala	108,928	0.7	762			
	Mexico	89,698	0.1	90			
	Costa Rica	49,395	0.8	395			
	Hondouras	41,892	0.1	42			
	Kenya	8,802	1.07	71			
	Zimbabwe	98	0.74	1			
Total		838,521		5,181	1%	99.75	1%

Sources:

1. C. Swartz Memo. List A Reregistration Case No. 0140/Chemical ID No. 098301. Anticipated Residues and Dietary Exposure Analyses for the HED Preliminary Human Health Risk Assessment. DP Barcode No. D266397.
2. USDA Global Agricultural Trade System (GATS), of the Foreign Agricultural Service (FSA), 2007.
3. ERS-USDA Data - Food Availability (Per Capita) Data System Food Availability Spreadsheets.mht.

BEAD suggests using this number (1% for coffee) in aldicarb's dietary risk assessment, instead of the 20% used in the old risk assessment.

For questions, comments and other usage or label use information requests, please contact Jihad Alsadek at 703-308-8140. Other requests for information may be addressed to **OPP Usage and Label Use Team**, our group e-mail address in Lotus Notes.

cc: C. Swartz

Attachment 4: Residue Input File - Food and Water

Filename: C:\Documents and Settings\colinger\My Documents\Aldicarb\Dietary2010\AldicarbAcute_7_8_10_4_8xFAQFactor_foodandwaterPDP.R98
 Chemical: Aldicarb
 RfD(Chronic): 0 mg/kg bw/day NOEL(Chronic): 0 mg/kg bw/day
 RfD(Acute): .00027 mg/kg bw/day NOEL(Acute): 0 mg/kg bw/day
 Date created/last modified: 07-07-2010/12:20:19/8 Program ver. 2.03
 Comment: Food and Water; 4.8x FQPA factor; PDP data

RDL indices and parameters for Monte Carlo Analysis:
 Index Dist Parameter #1 Param #2 Param #3 Comment
 # Code

1	6	114GrapefruitAldicarbPDP_55.rdf			
2	6	112LemonLimeAldicarbPDPOG2_5PCT.RDF			
3	6	111OrangeAldicarbPDP35PCT.RDF			
4	6	104PecanAldicarbFT2_5.rdf			
5	6	110LemonLimeJuiceAldicarbPDPOJdata55PCT.RDF			
6	6	107SweetPotatoAldicarbPDP5.rdf			
7	6	108PotatoAldicarbPDP15.rdf			
8	6	109GrapefruitJuiceAldicarbPDPOJdata55PCT.RDF			
9	6	106OJAldicarbPDP35PCT.RDF			
10	6	113PotatoFrozenAldicarbPDP15PCT.rdf			
11	6	GA water 500 final.rdf			

EPA Code	Crop Grp	Commodity Name	Def Res (ppm)	Adj.Factors #1	Adj.Factors #2	RDL Pntr	Comment
06030300	6C	Bean, black, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030320	6C	Bean, broad, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030340	6C	Bean, cowpea, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030350	6C	Bean, great northern, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030360	6C	Bean, kidney, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030380	6C	Bean, lima, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030390	6C	Bean, mung, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030400	6C	Bean, navy, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030410	6C	Bean, pink, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030420	6C	Bean, pinto, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030980	6C	Chickpea, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030981	6C	Chickpea, seed-babyfood	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06030990	6C	Chickpea, flour	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
95001150	O	Coffee, roasted bean	0.008550	1.000	0.010		last e
		Full comment: last edited 5/27/10					
95001160	O	Coffee, instant	0.008550	1.000	0.010		last e
		Full comment: last edited 5/27/10					
95001280	O	Cottonseed, oil	0.100000	0.100	0.350		last e
		Full comment: last edited 5/27/10					
95001281	O	Cottonseed, oil-babyfood	0.100000	0.100	0.350		last e

Full comment: last edited 5/27/10								
10001800	10	Grapefruit	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000747	1.000	1.000	1	last e
Full comment: last edited 7/8/10								
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000747	1.000	1.000	1	last e	
Full comment: last edited 7/8/10								
		240-Cooked; Canned; Cook Meth N/S	0.000922	1.000	1.000	1	last e	
Full comment: last edited 7/8/10								
10001810	10	Grapefruit, juice	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000747	1.000	1.000	8	last e
Full comment: last edited 5/24/10								
		120-Uncooked; Frozen; Cook Meth N/S	0.000922	1.000	1.000	8	last e	
Full comment: last edited 5/24/10								
		130-Uncooked; Dried; Cook Meth N/S	0.000747	1.000	1.000	8	last e	
Full comment: last edited 5/24/10								
		211-Cooked; Fresh or N/S; Baked	0.000747	1.000	1.000	8	last e	
Full comment: last edited 5/24/10								
		240-Cooked; Canned; Cook Meth N/S	0.000922	1.000	1.000	8	last e	
Full comment: last edited 5/24/10								
06031820	6C	Guar, seed		0.008550	0.050	0.025		last e
Full comment: last edited 5/27/10								
06031821	6C	Guar, seed-babyfood		0.008550	0.050	0.025		last e
Full comment: last edited 5/27/10								
10001990	10	Lemon		0.000074	1.000	1.000	2	last e
Full comment: last edited 5/24/10								
10002000	10	Lemon, juice		0.000074	1.000	1.000	5	last e
Full comment: last edited 5/25/10								
10002001	10	Lemon, juice-babyfood		0.000074	1.000	1.000	5	last e
Full comment: last edited 5/25/10								
10002010	10	Lemon, peel		0.000074	1.000	1.000	2	last e
Full comment: last edited 5/24/10								
06032030	6C	Lentil, seed		0.008550	0.050	0.025		last e
Full comment: last edited 6/11/10								
10002060	10	Lime		0.000200	1.000	1.000	2	last e
Full comment: last edited 5/24/10								
10002070	10	Lime, juice		0.000200	1.000	1.000	5	last e
Full comment: last edited 5/25/10								
10002071	10	Lime, juice-babyfood		0.000200	1.000	1.000	5	last e
Full comment: last edited 5/25/10								
10002400	10	Orange	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000374	1.000	1.000	3	last e
Full comment: last edited 5/24/10								
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000374	1.000	1.000	3	last e	
Full comment: last edited 5/24/10								
		240-Cooked; Canned; Cook Meth N/S	0.000440	1.000	1.000	3	last e	
Full comment: last edited 5/24/10								
10002410	10	Orange, juice	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000374	1.000	1.000	9	last e
Full comment: last edited 5/24/10								
		120-Uncooked; Frozen; Cook Meth N/S						

			0.000440	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
		130-Uncooked; Dried; Cook Meth N/S					
			0.000374	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
		210-Cooked; Fresh or N/S; Cook Meth N/S					
			0.000374	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
		211-Cooked; Fresh or N/S; Baked					
			0.000374	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
		212-Cooked; Fresh or N/S; Boiled					
			0.000374	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
		221-Cooked; Frozen; Baked	0.000440	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
		240-Cooked; Canned; Cook Meth N/S					
			0.000440	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
10002411	10	Orange, juice-babyfood					
		240-Cooked; Canned; Cook Meth N/S					
			0.000440	1.000	1.000	9	last e
		Full comment: last edited 5/24/10					
10002420	10	Orange, peel					
		110-Uncooked; Fresh or N/S; Cook Meth N/S					
			0.000374	1.000	1.000	3	last e
		Full comment: last edited 5/24/10					
		210-Cooked; Fresh or N/S; Cook Meth N/S					
			0.000374	1.000	1.000	3	last e
		Full comment: last edited 5/24/10					
		211-Cooked; Fresh or N/S; Baked					
			0.000374	1.000	1.000	3	last e
		Full comment: last edited 5/24/10					
		212-Cooked; Fresh or N/S; Boiled					
			0.000374	1.000	1.000	3	last e
		Full comment: last edited 5/24/10					
		240-Cooked; Canned; Cook Meth N/S					
			0.000440	1.000	1.000	3	last e
		Full comment: last edited 5/24/10					
06032560	6C	Pea, dry	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06032561	6C	Pea, dry-babyfood	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
06032580	6C	Pea, pigeon, seed	0.008550	0.050	0.025		last e
		Full comment: last edited 5/27/10					
95002630	O	Peanut	0.004700	1.000	0.400		last e
		Full comment: last edited 5/27/10					
95002640	O	Peanut, butter	0.004700	1.890	0.400		last e
		Full comment: last edited 5/27/10					
95002650	O	Peanut, oil	0.004700	0.180	0.400		last e
		Full comment: last edited 5/27/10					
14002690	14	Pecan	0.061400	1.000	1.000	4	last e
		Full comment: last edited 5/7/10					
01032960	1C	Potato, chips	0.042600	0.620	0.150		last e
		Full comment: last edited 5/27/10					
01032970	1C	Potato, dry (granules/ flakes)					
		211-Cooked; Fresh or N/S; Baked					
			0.042600	0.300	0.150		last e
		Full comment: last edited 5/27/10					
		212-Cooked; Fresh or N/S; Boiled					
			0.042600	0.150	0.150		last e
		Full comment: last edited 5/27/10					

		213-Cooked; Fresh or N/S; Fried	0.042600	0.190	0.150	last e
		Full comment: last edited 5/27/10				
		214-Cooked; Fresh or N/S; Fried/baked	0.042600	0.190	0.150	last e
		Full comment: last edited 5/27/10				
		221-Cooked; Frozen; Baked	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		230-Cooked; Dried; Cook Meth N/S	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		232-Cooked; Dried; Boiled	0.042600	0.150	0.150	last e
		Full comment: last edited 5/27/10				
01032971	1C	Potato, dry (granules/ flakes)-b				
		240-Cooked; Canned; Cook Meth N/S	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
01032980	1C	Potato, flour				
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		120-Uncooked; Frozen; Cook Meth N/S	0.042600	0.300	0.150	
		130-Uncooked; Dried; Cook Meth N/S	0.042600	0.300	0.150	
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.042600	0.300	0.150	
		211-Cooked; Fresh or N/S; Baked	0.042600	0.300	0.150	
		212-Cooked; Fresh or N/S; Boiled	0.042600	0.150	0.150	
		213-Cooked; Fresh or N/S; Fried	0.042600	0.190	0.150	
		214-Cooked; Fresh or N/S; Fried/baked	0.042600	0.190	0.150	
		215-Cooked; Fresh or N/S; Boiled/baked	0.042600	0.150	0.150	
		220-Cooked; Frozen; Cook Meth N/S	0.042600	0.300	0.150	
		221-Cooked; Frozen; Baked	0.042600	0.300	0.150	
		222-Cooked; Frozen; Boiled	0.042600	0.150	0.150	
		223-Cooked; Frozen; Fried	0.042600	0.190	0.150	
		230-Cooked; Dried; Cook Meth N/S	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		231-Cooked; Dried; Baked	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		232-Cooked; Dried; Boiled	0.042600	0.150	0.150	last e
		Full comment: last edited 5/27/10				
		233-Cooked; Dried; Fried	0.042600	0.190	0.150	last e
		Full comment: last edited 5/27/10				
		240-Cooked; Canned; Cook Meth N/S	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		242-Cooked; Canned; Boiled	0.042600	0.150	0.150	last e
		Full comment: last edited 5/27/10				
		250-Cooked; Cured etc; Cook Meth N/S	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		251-Cooked; Cured etc; Baked	0.042600	0.300	0.150	last e
		Full comment: last edited 5/27/10				
		252-Cooked; Cured etc; Boiled	0.042600	0.150	0.150	last e

		Full comment: last edited 5/27/10							
		253-Cooked; Cured etc; Fried	0.042600	0.190	0.150		last	e	
01032981	1C	Potato, flour-babyfood							
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.042600	0.300	0.150		last	e	
		Full comment: last edited 5/27/10							
		130-Uncooked; Dried; Cook Meth N/S	0.042600	0.300	0.150		last	e	
		Full comment: last edited 5/27/10							
		240-Cooked; Canned; Cook Meth N/S	0.042600	0.300	0.150		last	e	
01032990	1C	Potato, tuber, w/peel							
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.042600	1.000	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		211-Cooked; Fresh or N/S; Baked	0.042600	1.000	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		212-Cooked; Fresh or N/S; Boiled	0.042600	0.500	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		213-Cooked; Fresh or N/S; Fried	0.042600	0.620	1.000	7	last	e	
01032991	1C	Potato, tuber, w/peel-babyfood	0.042600	1.000	1.000	7	last	e	
		Full comment: last edited 5/27/10							
01033000	1C	Potato, tuber, w/o peel							
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.042600	1.000	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.042600	1.000	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		211-Cooked; Fresh or N/S; Baked	0.042600	1.000	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		212-Cooked; Fresh or N/S; Boiled	0.042600	0.500	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		213-Cooked; Fresh or N/S; Fried	0.042600	0.620	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		221-Cooked; Frozen; Baked	0.042600	1.000	1.000	10	last	e	
		Full comment: last edited 5/27/10; frozen potato data							
		223-Cooked; Frozen; Fried	0.042600	0.620	1.000	10	last	e	
		Full comment: last edited 5/27/10; frozen potato data							
		232-Cooked; Dried; Boiled	0.042600	0.500	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		233-Cooked; Dried; Fried	0.042600	0.620	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		240-Cooked; Canned; Cook Meth N/S	0.042600	0.500	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		242-Cooked; Canned; Boiled	0.042600	0.500	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		252-Cooked; Cured etc; Boiled	0.042600	0.500	1.000	7	last	e	
		Full comment: last edited 5/27/10							
		253-Cooked; Cured etc; Fried	0.042600	0.620	1.000	7	last	e	
		Full comment: last edited 5/27/10							
01033001	1C	Potato, tuber, w/o peel-babyfood							

		240-Cooked; Canned; Cook Meth N/S	0.042600	0.500	1.000	7	last e
		Full comment: last edited 5/27/10					
15003440	15	Sorghum, grain	0.200000	1.000	0.025		last e
		Full comment: last edited 6/11/10					
15003450	15	Sorghum, syrup	0.200000	1.000	0.025		last e
		Full comment: last edited 6/11/10					
06003470	6	Soybean, seed	0.008550	1.000	0.025		last e
		Full comment: last edited 5/27/10					
06003480	6	Soybean, flour	0.008550	1.000	0.025		last e
		Full comment: last edited 5/27/10					
06003481	6	Soybean, flour-babyfood	0.008550	1.000	0.025		last e
		Full comment: last edited 5/27/10					
06003490	6	Soybean, soy milk	0.008550	1.000	0.025		last e
		Full comment: last edited 5/27/10					
06003491	6	Soybean, soy milk-babyfood or in	0.008550	1.000	0.025		last e
		Full comment: last edited 5/27/10					
06003500	6	Soybean, oil	0.008550	0.300	0.025		last e
		Full comment: last edited 5/27/10					
06003501	6	Soybean, oil-babyfood	0.008550	0.300	0.025		last e
		Full comment: last edited 5/27/10					
01033660	1CD	Sweet potato					
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000735	1.000	1.000	6	last e
		Full comment: last edited 5/27/10					
		211-Cooked; Fresh or N/S; Baked	0.000735	1.000	1.000	6	last e
		Full comment: last edited 5/27/10					
		212-Cooked; Fresh or N/S; Boiled	0.000735	0.500	1.000	6	last e
		Full comment: last edited 5/27/10					
		213-Cooked; Fresh or N/S; Fried	0.000735	0.620	1.000	6	last e
		Full comment: last edited 5/27/10					
		215-Cooked; Fresh or N/S; Boiled/baked	0.000735	0.500	1.000	6	last e
		Full comment: last edited 5/27/10					
		242-Cooked; Canned; Boiled	0.000735	0.500	1.000	6	last e
		Full comment: last edited 5/27/10					
		245-Cooked; Canned; Boiled/baked	0.000735	0.500	1.000	6	last e
		Full comment: last edited 5/27/10					
01033661	1CD	Sweet potato-babyfood					
		211-Cooked; Fresh or N/S; Baked	0.000735	1.000	1.000	6	last e
		Full comment: last edited 5/27/10					
		240-Cooked; Canned; Cook Meth N/S	0.000735	0.500	1.000	6	last e
		Full comment: last edited 5/27/10					
86010000	O	Water, direct, all sources	1.000000	4.040	0.860	11	last e
		Full comment: last edited 5/27/10					
86020000	O	Water, indirect, all sources	1.000000	4.040	0.860	11	last e
		Full comment: last edited 5/27/10					

Attachment 5: Results File – Food Only

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file: AldicarbAcute_7_8_10_4_8xQPAfactor_foodalonePDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/20:58:29 Residue file dated: 07-08-2010/20:33:16/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food Alone; 4.8x FQPA factor; PDP data"
 removed"

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Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000053	19.61	0.000144	53.32	0.000423	156.52
All infants:	0.000009	3.25	0.000152	56.45	0.000731	270.76
Children 1-2 yrs:	0.000168	62.10	0.000371	137.23	0.000866	320.59
Children 3-5 yrs:	0.000134	49.73	0.000284	105.33	0.000737	273.00
Children 6-12 yrs:	0.000084	31.25	0.000195	72.30	0.000459	170.10
Youth 13-19 yrs:	0.000059	21.99	0.000145	53.76	0.000370	136.90
Adults 20-49 yrs:	0.000044	16.41	0.000103	38.25	0.000312	115.65
Adults 50+ yrs:	0.000043	15.84	0.000086	31.80	0.000289	107.09
Females 13-49 yrs:	0.000047	17.22	0.000106	39.25	0.000304	112.49

Attachment 6: Results File – Food and Drinking Water (GA 500ft Cotton/Peanut)

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file: AldicarbAcute_7_8_10_4_8xQPFAfactor_foodandwaterPDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/21:03:34 Residue file dated: 07-08-2010/20:35:08/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food and Water; 4.8x FQPA factor; PDP data"
 removed"

=====

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000481	178.22	0.000873	323.31	0.001765	653.75
All infants:	0.001702	630.42	0.002639	977.55	0.004275	1583.19
Children 1-2 yrs:	0.000783	289.89	0.001278	473.42	0.002180	807.50
Children 3-5 yrs:	0.000700	259.43	0.001115	413.14	0.001947	721.19
Children 6-12 yrs:	0.000485	179.50	0.000789	292.19	0.001268	469.60
Youth 13-19 yrs:	0.000385	142.55	0.000670	248.18	0.001330	492.47
Adults 20-49 yrs:	0.000439	162.58	0.000739	273.72	0.001375	509.11
Adults 50+ yrs:	0.000403	149.35	0.000601	222.47	0.001028	380.62
Females 13-49 yrs:	0.000443	164.16	0.000730	270.23	0.001345	498.05

Attachment 7: Results File – Food Alone/RED Commodities Removed

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)

Residue file:

AldicarbAcute_7_8_10_4_8xFAQPAfactor_foodalone_REDcommoditiesremovedPDP.R98

Adjustment factor #2 used.

Analysis Date: 07-08-2010/20:44:42 Residue file dated: 07-08-2010/20:32:17/8
 Daily totals for food and foodform consumption used.

MC iterations = 1000 MC list in residue file MC seed = 10

Run Comment: "Food Alone; 4.8x FQPA factor; PDP data; RED cancellation commodities removed"

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Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000053	19.61	0.000144	53.31	0.000424	157.10
All infants:	0.000009	3.30	0.000152	56.41	0.000736	272.41
Children 1-2 yrs:	0.000168	62.06	0.000370	137.20	0.000864	319.90
Children 3-5 yrs:	0.000134	49.73	0.000284	105.23	0.000737	272.90
Children 6-12 yrs:	0.000084	31.25	0.000194	71.98	0.000465	172.23
Youth 13-19 yrs:	0.000059	22.00	0.000145	53.58	0.000364	134.92
Adults 20-49 yrs:	0.000044	16.44	0.000103	38.33	0.000316	117.07
Adults 50+ yrs:	0.000043	15.90	0.000086	31.84	0.000288	106.51
Females 13-49 yrs:	0.000047	17.29	0.000106	39.44	0.000305	112.86

Attachment 8: Results File – Food Alone/Potatoes Removed

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file: AldicarbAcute_7_8_10_4_8xQPFAfactor_foodalonepotatoesremovedPDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/22:11:37 Residue file dated: 07-08-2010/20:34:09/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food alone; 4.8x FQPA factor; PDP data; potatoes removed"
 removed"

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000039	14.52	0.000115	42.59	0.000296	109.57
All infants:	0.000002	0.59	0.000102	37.73	0.000359	132.86
Children 1-2 yrs:	0.000143	52.89	0.000330	122.22	0.000678	251.07
Children 3-5 yrs:	0.000115	42.58	0.000248	91.84	0.000523	193.61
Children 6-12 yrs:	0.000072	26.61	0.000160	59.23	0.000297	110.07
Youth 13-19 yrs:	0.000047	17.59	0.000116	43.13	0.000241	89.15
Adults 20-49 yrs:	0.000033	12.23	0.000083	30.81	0.000202	74.68
Adults 50+ yrs:	0.000034	12.61	0.000062	23.06	0.000131	48.43
Females 13-49 yrs:	0.000037	13.75	0.000093	34.38	0.000202	74.94

Attachment 9: Results File – Food Alone/Potatoes and Sweet Potatoes Removed

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file: AldicarbAcute_7_8_10_4_8xQPAPfactor_foodalonesweet potatoes and
 potatoesremovedPDP.R98

Adjustment factor #2 used.
 Analysis Date: 07-08-2010/20:55:06 Residue file dated: 07-08-2010/20:34:28/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food alone; 4.8x FQPA factor; PDP data, sweet potato and potato
 removed"

=====
 Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
	-----	-----	-----	-----	-----	-----
U.S. Population:	0.000039	14.51	0.000115	42.50	0.000295	109.39
All infants:	0.000001	0.52	0.000101	37.51	0.000352	130.22
Children 1-2 yrs:	0.000142	52.76	0.000329	121.93	0.000683	253.09
Children 3-5 yrs:	0.000115	42.55	0.000248	91.72	0.000524	193.99
Children 6-12 yrs:	0.000072	26.65	0.000159	59.02	0.000297	110.03
Youth 13-19 yrs:	0.000047	17.56	0.000117	43.35	0.000239	88.43
Adults 20-49 yrs:	0.000033	12.21	0.000083	30.63	0.000201	74.59
Adults 50+ yrs:	0.000034	12.62	0.000062	23.10	0.000130	48.21
Females 13-49 yrs:	0.000037	13.76	0.000093	34.36	0.000203	75.14

Attachment 10: Results File – Food Alone/Citrus Removed

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file: AldicarbAcute_7_8_10_4_8xQPFAfactor_foodalonecitrusremovedPDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/20:49:02 Residue file dated: 07-08-2010/20:32:59/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food alone; 4.8x FQPA factor; PDP data; citrus removed"
 ties removed"

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000010	3.72	0.000067	24.99	0.000319	118.13
All infants:	0.000001	0.54	0.000047	17.43	0.000365	135.05
Children 1-2 yrs:	0.000018	6.54	0.000144	53.31	0.000617	228.44
Children 3-5 yrs:	0.000015	5.60	0.000125	46.48	0.000519	192.39
Children 6-12 yrs:	0.000012	4.34	0.000094	34.85	0.000391	144.92
Youth 13-19 yrs:	0.000008	2.89	0.000070	25.78	0.000347	128.61
Adults 20-49 yrs:	0.000007	2.70	0.000060	22.37	0.000265	98.29
Adults 50+ yrs:	0.000013	4.77	0.000061	22.58	0.000279	103.26
Females 13-49 yrs:	0.000006	2.13	0.000057	21.23	0.000255	94.53

Attachment 11: Results File – Food Alone/Potatoes and Citrus Removed

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file:
 AldicarbAcute_7_8_10_4_8xQPAPfactor_foodalonepotatoesandcitrusremovedPDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/20:51:51 Residue file dated: 07-08-2010/20:33:47/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food alone; 4.8x FQPA factor; PDP data; potatoes and citrus removed"

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000002	0.59	0.000005	1.81	0.000012	4.50
All infants:	0.000001	0.27	0.000002	0.78	0.000044	16.27
Children 1-2 yrs:	0.000005	1.87	0.000010	3.84	0.000027	10.02
Children 3-5 yrs:	0.000006	2.14	0.000010	3.87	0.000021	7.62
Children 6-12 yrs:	0.000003	1.29	0.000007	2.48	0.000012	4.51
Youth 13-19 yrs:	0.000001	0.46	0.000004	1.31	0.000008	2.82
Adults 20-49 yrs:	0.000001	0.37	0.000003	1.05	0.000007	2.66
Adults 50+ yrs:	0.000001	0.34	0.000002	0.87	0.000008	3.03
Females 13-49 yrs:	0.000001	0.33	0.000002	0.87	0.000006	2.35

**Attachment 12: Results File – Food and Drinking Water /Potatoes and Citrus Removed
(GA 500ft Cotton/Peanut)**

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file:
 AldicarbAcute_7_8_10_4_8xQPAPfactor_foodandwaterpotatoesandcitrusremovedPDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/21:07:13 Residue file dated: 07-08-2010/20:35:39/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food and Water; 4.8x FQPA factor; PDP data; potatoes and citrus removed"

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 Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000462	171.23	0.000843	312.25	0.001724	638.62
All infants:	0.001694	627.39	0.002634	975.68	0.004278	1584.34
Children 1-2 yrs:	0.000726	268.85	0.001202	445.17	0.001975	731.34
Children 3-5 yrs:	0.000657	243.29	0.001054	390.54	0.001832	678.63
Children 6-12 yrs:	0.000458	169.54	0.000751	278.00	0.001192	441.31
Youth 13-19 yrs:	0.000364	134.73	0.000639	236.78	0.001294	479.44
Adults 20-49 yrs:	0.000427	158.27	0.000723	267.65	0.001343	497.48
Adults 50+ yrs:	0.000391	144.89	0.000584	216.19	0.000989	366.35
Females 13-49 yrs:	0.000431	159.55	0.000712	263.62	0.001314	486.71

**Attachment 13: Results File – Food and Drinking Water /Potatoes and Citrus Removed
(NC 300ft Cotton/Peanut)**

U.S. Environmental Protection Agency Ver. 2.02
 DEEM-FCID ACUTE Analysis for ALDICARB (1994-98 data)
 Residue file:
 AldicarbAcute_7_8_10_4_8xFAQAFactor_foodandNC300waterpotatoesandcitrusremovedPDP.R98
 Adjustment factor #2 used.
 Analysis Date: 07-08-2010/21:10:29 Residue file dated: 07-08-2010/20:34:45/8
 Daily totals for food and foodform consumption used.
 MC iterations = 1000 MC list in residue file MC seed = 10
 Run Comment: "Food and Water; 4.8x FQPA factor; PDP data; potatoes and citrus
 removed; Water:NC300ftcoastal plain"
 =====

Summary calculations (per capita):

	95th Percentile		99th Percentile		99.9th Percentile	
	Exposure	% aRfD	Exposure	% aRfD	Exposure	% aRfD
U.S. Population:	0.000153	56.71	0.000282	104.31	0.000581	215.30
All infants:	0.000569	210.86	0.000883	326.86	0.001444	534.67
Children 1-2 yrs:	0.000242	89.59	0.000407	150.85	0.000666	246.57
Children 3-5 yrs:	0.000220	81.49	0.000356	132.03	0.000610	225.92
Children 6-12 yrs:	0.000153	56.57	0.000257	95.12	0.000403	149.09
Youth 13-19 yrs:	0.000121	44.78	0.000212	78.64	0.000422	156.23
Adults 20-49 yrs:	0.000143	52.85	0.000241	89.22	0.000454	168.30
Adults 50+ yrs:	0.000132	48.84	0.000196	72.59	0.000329	121.70
Females 13-49 yrs:	0.000144	53.29	0.000238	88.00	0.000444	164.59

Attachment 14: Output from Eating Occasion Analyses

Scenario	exposure_eo_mkd_999	PaPAD_eo_mkd_999
AldicarbAcute_EO_INFANTS_4_8X_Food andWater.csv, Halflife (min)=1	0.002163236	801%
AldicarbAcute_EO_INFANTS_4_8X_Food alone.CSV, Halflife (min)=1	0.00058439	216%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=1	0.00060231	223%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=1	0.000340292	126%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=1	0.000317683	118%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_citrus removed.CSV, Halflife (min)=1	0.00035577	132%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=1	4.1638E-05	15%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=1	0.002136339	791%
AldicarbAcute_EO_INFANTS_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=1	0.000684858	254%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater.CSV, Halflife (min)=1	0.001150147	426%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone.CSV, Halflife (min)=1	0.000731175	271%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=1	0.00076355	283%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=1	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=1	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_citrus removed.CSV, Halflife (min)=1	0.000558468	207%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=1	2.29861E-05	9%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=1	0.000823181	305%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=1	0.000254865	94%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater.CSV, Halflife (min)=1	0.000905173	335%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone.CSV, Halflife (min)=1	0.000617395	229%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=1	0.00063141	234%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=1	0.000357786	133%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=1	0.000357786	133%

Scenario	exposure eo_mkd_999	PaPAD eo_mkd_999
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_citrus removed.CSV, Halflife (min)=1	0.000512485	190%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=1	1.87909E-05	7%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=1	0.000712734	264%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=1	0.000225658	84%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater.csv, Halflife (min)=60	0.002164483	802%
AldicarbAcute_EO_INFANTS_4_8X_Food alone.CSV, Halflife (min)=60	0.00058439	216%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=60	0.000611895	227%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=60	0.000346456	128%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=60	0.000317683	118%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_citrus removed.CSV, Halflife (min)=60	0.00035577	132%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=60	4.1638E-05	15%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=60	0.002145539	795%
AldicarbAcute_EO_INFANTS_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=60	0.000684864	254%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater.CSV, Halflife (min)=60	0.001169684	433%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone.CSV, Halflife (min)=60	0.000742865	275%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=60	0.000792391	293%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=60	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=60	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_citrus removed.CSV, Halflife (min)=60	0.000558468	207%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=60	2.32673E-05	9%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=60	0.000837609	310%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=60	0.00026022	96%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater.CSV, Halflife (min)=60	0.000928321	344%

Scenario	exposure eo mkd 999	PaPAD eo mkd 999
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone.CSV, Halflife (min)=60	0.000617395	229%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=60	0.000631687	234%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=60	0.000357786	133%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=60	0.000357786	133%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_citrus removed.CSV, Halflife (min)=60	0.000512485	190%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=60	1.88101E-05	7%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=60	0.000740296	274%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=60	0.000232592	86%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater.csv, Halflife (min)=120	0.002175783	806%
AldicarbAcute_EO_INFANTS_4_8X_Food alone.CSV, Halflife (min)=120	0.00058439	216%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=120	0.00061375	227%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=120	0.000346456	128%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=120	0.000317683	118%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_citrus removed.CSV, Halflife (min)=120	0.00035495	131%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=120	4.1638E-05	15%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=120	0.002150848	797%
AldicarbAcute_EO_INFANTS_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=120	0.000686801	254%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater.CSV, Halflife (min)=120	0.001195371	443%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone.CSV, Halflife (min)=120	0.000771049	286%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=120	0.000793669	294%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=120	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=120	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_citrus removed.CSV, Halflife (min)=120	0.000558468	207%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=120	2.32673E-05	9%

Scenario	exposure eo_mkd_999	PaPAD eo_mkd_999
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=120	0.000888526	329%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=120	0.000281837	104%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater.CSV, Halflife (min)=120	0.000976625	362%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone.CSV, Halflife (min)=120	0.000618575	229%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=120	0.00063253	234%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=120	0.000373871	138%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=120	0.00037067	137%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_citrus removed.CSV, Halflife (min)=120	0.000512485	190%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=120	1.91915E-05	7%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=120	0.000779259	289%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=120	0.000247684	92%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater.csv, Halflife (min)=240	0.002227418	825%
AldicarbAcute_EO_INFANTS_4_8X_Food alone.CSV, Halflife (min)=240	0.00058439	216%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=240	0.000636104	236%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=240	0.000344053	127%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=240	0.000333816	124%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_citrus removed.CSV, Halflife (min)=240	0.00035577	132%
AldicarbAcute_EO_INFANTS_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=240	4.17609E-05	15%
AldicarbAcute_EO_INFANTS_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=240	0.002206735	817%
AldicarbAcute_EO_INFANTS_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=240	0.000704556	261%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater.CSV, Halflife (min)=240	0.001257909	466%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone.CSV, Halflife (min)=240	0.000791686	293%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=240	0.000801461	297%

Scenario	exposure eo mkd 999	PaPAD eo mkd 999
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=240	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=240	0.000586092	217%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_citrus removed.CSV, Halflife (min)=240	0.000571865	212%
AldicarbAcute_EO_CHILDREN12_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=240	2.32673E-05	9%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=240	0.001032365	382%
AldicarbAcute_EO_CHILDREN12_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=240	0.000329248	122%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater.CSV, Halflife (min)=240	0.001094684	405%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone.CSV, Halflife (min)=240	0.000630271	233%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_RED commodities removed.CSV, Halflife (min)=240	0.000651245	241%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes removed.CSV, Halflife (min)=240	0.000420971	156%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and sweet potatoes removed.CSV, Halflife (min)=240	0.000415	154%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_citrus removed.CSV, Halflife (min)=240	0.000513252	190%
AldicarbAcute_EO_CHILDREN35_4_8X_Food alone_potatoes and citrus removed.CSV, Halflife (min)=240	1.90355E-05	7%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andWater_potatoes and citrus removed.CSV, Halflife (min)=240	0.000904149	335%
AldicarbAcute_EO_CHILDREN35_4_8X_Food andNC300Water_potatoes and citrus removed.CSV, Halflife (min)=240	0.00029266	108%

