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

JAN 12 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Atrazine - Dietary Exposure and Oncogenic Risk Assessment

FROM: J. R. Tomerlin, Ph.D. *JR Tomerlin* 1/11/88
Tolerance Assessment Program
HED/RCB (TS-769C)

THRU: Karl Arne, Ph.D. *K Arne*
Branch Senior Scientist
HED/RCB (TS-769C)

TO: Robert Taylor, PM Team 25
Fungicide-Herbicide Branch
Registration Division (TS-767C)

Action Requested

Provide an estimate of dietary exposure and oncogenic risk for Atrazine using percent of crop treated data.

Discussion

The reference dose (PADI) used in the analysis was 0.0035 mg/kg body wt/day, based upon a No Observable Effect Level (NOEL) of 0.35 mg/kg body wt/day, obtained in a two year dog feeding study, with an uncertainty factor of 100. This value has been verified by the Toxicology Branch ADI Committee (7/9/86).

Atrazine has been identified as an oncogen in rats and has been classified as a Category C oncogen by the Toxicology Branch Peer Review Committee. The upper bound potency estimate (Q^*) obtained in this study was 1.76×10^{-1} (mg/kg/day) $^{-1}$ (personal communication, J. Hauswirth).

The Tolerance Assessment System (TAS) Program conducted a Routine Chronic analysis and oncogenic risk assessment using percent of crop treated data provided by the Benefits and Use Division (memo Lapsley to Grubbs, 12/21/87). Percent of crop treated data for macadamia nuts (listed as other turf, fruit and nut crops etc.) were not available, so TAS assumed that 100 percent of the crop was treated. TAS also used the upper value when a range was provided. Benefits and Use Division concurred with the use of these figures in the TAS analysis (personal communication, R. Torla).

The data used in the analysis were for tolerances and food uses published in CFR 180.220. A complete listing of tolerance and percent of crop treated data used in the analysis is shown in Table 1.

The TAS Routine Chronic Analysis estimates exposure, based on per capita consumption, for the the U.S. population and each of 22 population subgroups. In this analysis, the anticipated Residue Contribution (ARC) for the U.S. population was estimated to be 0.000493 mg/kg body wt/day, corresponding to 14% of the PADI. The two population subgroups most at risk were non-nursing infants less than one year old (ARC of 0.001844 mg/kg body wt/day, 52% of the PADI) and children one to six years old (ARC of 0.001296 mg/kg body wt/day, 37% of the PADI). The analysis is summarized in Table 2.

Approximately 81% of the exposure in the U.S. population is due to residues in milk, corn, and sugarcane, and approximately 43% of the total exposure derives from milk. The TAS analysis assumes that all animals slaughtered for direct consumption and dairy cattle receive treated feed. Although this assumption may not be completely justified, approximately 70% of the U.S. field corn crop is treated with Atrazine.

Oncogenic risk was calculated for the U.S. population average, in accordance with current HED policy. Oncogenic risk is calculated as follows:

$$\begin{aligned}\text{Risk} &= \text{Exposure} \times Q^* \\ &= 0.000493 \times (1.76 \times 10^{-1}) \\ &= 87 \times 10^{-6}\end{aligned}$$

The contribution of the specific food groups to the total oncogenic risk in the overall U.S. population is shown below:

COMMODITY	ARC UG/KG/DAY ^a	RISK x 10 ⁻⁶
Milk	0.210678	37
Corn	0.095132	17
Sugarcane	0.093286	16
Red Meat	0.044637	7.9
Pineapple	0.023541	4.1
Eggs	0.011607	2.0
Poultry	0.010132	1.8
Other Grains	0.003532	0.62
Tree Nuts	0.000012	0.0021
Guava	0.000005	0.00088
Total	0.492562	87

^aConverted from mg/kg body wt/day for ease of presentation

The residue chemistry chapter of the registration standard requires additional plant and animal metabolism studies as well as additional residue data. Based on available data, Atrazine is not expected to be a significant residue in RAC'S's, but two or three metabolites, for which little or no residue data are available, may comprise a significant portion of the terminal residue. Because most of the tolerances used in this analysis are based on field trial data for which Atrazine, per se, was analyzed, the risk estimate is extremely tentative. When the metabolism and field trial data requested by the standard are submitted, a better estimate of dietary risk will be possible.

cc. TAS File
Reading File
Atrazine SF
circ.
R. Perfetti (RCB)

Table 1

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 063 DATE: 01/07/88 PAGE: 1

CHEMICAL		STUDY TYPE		EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
Atrazine	2yr feeding- dog	NOEL=	Increased weights of	PADI	100	Chronic feeding- dog	TOX complete 7/9/86.		
Caswell #063	0.3500 mg/kg	heart and liver in female	OPP RfD= 0.003500	Reproduction	ORD verified 5/20/87.	Teratology- rabbit			
CAS No. 1912-24-9	14.10 ppm	dogs, doses based on	EPA RfD= 0.003500	(Supplementary data)					
A.I. CODE: 080803	LEL=	analytical values. Evi-	WHO RfD 0.000000						
CFR No. 180.220	3.5000 mg/kg	dence of oncogenicity in	Type:						
	141.00 ppm	rats (mammary).							
	ONCO: Class C (Tox Note).								
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)	
03007AA	MACADAMIA NUTS	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		100.00	0.250000	
06006AA	GUAVA	10 RAW-FRESH OR NFS	0E2393	P 0.050000	0.050000		100.00	0.050000	
06006AA	GUAVA	21 COOKED-NFS	0E2393	P 0.050000	0.050000		100.00	0.050000	
06006AA	GUAVA	62 COOKED-FRESH OR FROZEN-BAKED	0E2393	P 0.050000	0.050000		100.00	0.050000	
06013AA	PINEAPPLE-PULP	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013AA	PINEAPPLE-PULP	21 COOKED-NFS	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013AA	PINEAPPLE-PULP	31 COOKED-FRESH OR CANNED	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013DA	PINEAPPLE-DRIED	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013JA	PINEAPPLE-JUICE	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013JA	PINEAPPLE-JUICE	15 RAW-FRESH OR CANNED	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013JA	PINEAPPLE-JUICE	21 COOKED-NFS	7F0620	P 0.250000	0.250000		100.00	0.250000	
06013JA	PINEAPPLE-JUICE	31 COOKED-FRESH OR CANNED	7F0620	P 0.250000	0.250000		100.00	0.250000	
15004AA	CORN, POP	21 COOKED-NFS	7F0620	P 0.250000	0.250000		70.00	0.175000	
15005AA	CORN, SWEET	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		60.00	0.150000	
15005AA	CORN, SWEET	21 COOKED-NFS	7F0620	P 0.250000	0.250000		60.00	0.150000	
15005AA	CORN, SWEET	31 COOKED-FRESH OR CANNED	7F0620	P 0.250000	0.250000		60.00	0.150000	
24002EA	CORN, GRAIN- ENDO	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002EA	CORN, GRAIN- ENDO	21 COOKED-NFS	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002EA	CORN, GRAIN- ENDO	22 COOKED-FRESH-BAKED	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002EA	CORN, GRAIN- ENDO	23 COOKED-FRESH-BOILED	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002HA	CORN, GRAIN- BRAN	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002SA	CORN SUGAR	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002SA	CORN SUGAR	21 COOKED-NFS	7F0620	P 0.250000	0.250000		70.00	0.175000	
24002SA	CORN SUGAR	22 COOKED-FRESH-BAKED	7F0620	P 0.250000	0.250000		70.00	0.175000	
24006AA	SORGHUM	00 NOT SPECIFIED (NO CONSUMPTION)	7F0525	P 0.250000	0.250000		70.00	0.175000	
24007AA	WHEAT-ROUGH	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007AA	WHEAT-ROUGH	21 COOKED-NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007AA	WHEAT-ROUGH	22 COOKED-FRESH-BAKED	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007AA	WHEAT-ROUGH	23 COOKED-FRESH-BOILED	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007GA	WHEAT-GERM	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007GA	WHEAT-GERM	22 COOKED-FRESH-BAKED	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-BRAN	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-BRAN	21 COOKED-NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-BRAN	22 COOKED-FRESH-BAKED	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-FLOUR	10 RAW-FRESH OR NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-FLOUR	21 COOKED-NFS	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-FLOUR	22 COOKED-FRESH-BAKED	7F0620	P 0.250000	0.250000		1.00	0.002500	
24007HA	WHEAT-FLOUR	25 COOKED-FRESH-FRIED	7F0620	P 0.250000	0.250000		1.00	0.002500	
24012AA	MILLET	10 RAW-FRESH OR NFS	8E2076	P 0.250000	0.250000		100.00	0.250000	
24012AA	MILLET	21 COOKED-NFS	8E2076	P 0.250000	0.250000		100.00	0.250000	

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CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)			
Atrazine Caswell #063 CAS No. 1912-24-9 A.I. CODE: 080803 CFR No. 180.220		2yr feeding- dog NOEL= 0.3500 mg/kg 14.10 ppm LEL= 3.5000 mg/kg 141.00 ppm ONCO: Class C (Tox WOTE).	Increased weights of heart and liver in female dogs, doses based on analytical values. Evidence of oncogenicity in rats (mammary).		PADI 100 OPP RfD= 0.003500 EPA RfD= 0.003500 WHO RfD 0.000000 Type:	Chronic feeding- dog Reproduction Teratology- rabbit (Supplementary data)		TOX complete 7/9/86. ORD verified 5/20/87.			
250003SA	CANE SUGAR	10 RAW-FRESH OR NFS		P 0.250000	0.250000		50.00	0.125000			
250003SA	CANE SUGAR	21 COOKED-NFS		P 0.250000	0.250000		50.00	0.125000			
250003SA	CANE SUGAR	22 COOKED-FRESH-BAKED		P 0.250000	0.250000		50.00	0.125000			
250003SA	CANE SUGAR	31 COOKED-FRESH OR CANNED		P 0.250000	0.250000		50.00	0.125000			
250003SB	SUGAR-MOLASSES	10 RAW-FRESH OR NFS		P 0.250000	0.250000		50.00	0.125000			
250003SB	SUGAR-MOLASSES	21 COOKED-NFS		P 0.250000	0.250000		50.00	0.125000			
250003SB	SUGAR-MOLASSES	22 COOKED-FRESH-BAKED		P 0.250000	0.250000		50.00	0.125000			
250003SB	SUGAR-MOLASSES	31 COOKED-FRESH OR CANNED		P 0.250000	0.250000		50.00	0.125000			
2700020A	CORN, GRAIN-OIL	18 PROCESSED OIL	7F0620	P 0.250000	0.250000		70.00	0.175000			
5000000B	MILK-NON-FAT SOL	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
5000000B	MILK-NON-FAT SOL	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
5000000B	MILK-NON-FAT SOL	51 COOKED-CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
500000FA	MILK-FAT SOLIDS	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
500000FA	MILK-FAT SOLIDS	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
500000FA	MILK-FAT SOLIDS	51 COOKED-CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
500000SA	MILK SUG (LACT)	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
500000SA	MILK SUG (LACT)	51 COOKED-CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001BA	BEEF-MEAT BYP	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001BA	BEEF-MEAT BYP	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001BB	BEEF-OTH ORGAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001BB	BEEF-OTH ORGAN	51 COOKED-CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001DA	BEEF-DRIED	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001FA	BEEF-FAT	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001FA	BEEF-FAT	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001FA	BEEF-FAT	22 COOKED-FRESH-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001FA	BEEF-FAT	23 COOKED-FRESH-BOILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001FA	BEEF-FAT	24 COOKED-FRESH-BROILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001FA	BEEF-FAT	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001KA	BEEF-KIDNEY	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001LA	BEEF-LIVER	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001LA	BEEF-LIVER	31 COOKED-FRESH OR CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001NA	BEEF-LEAN	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001NA	BEEF-LEAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001NA	BEEF-LEAN	22 COOKED-FRESH-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001NA	BEEF-LEAN	23 COOKED-FRESH-BOILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530001NA	BEEF-LEAN	24 COOKED-FRESH-BROILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530002BA	GOAT-MEAT BYP	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
530002BB	GOAT-OTH ORGAN	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
530002FA	GOAT-FAT	23 COOKED-FRESH-BOILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
530002FA	GOAT-FAT	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			

Table 1, Continued

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DATE: 01/07/88

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 063

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Atrazine	2yr feeding- dog	Increased weights of	PADI	Chronic feeding- dog	TOX complete 7/9/86. ORD verified 5/20/87.						
Caswell #063	NOEL=	heart and liver in female	OPP Rfd= 0.003500	Reproduction							
CAS No. 1912-24-9	LEL=	dogs, doses based on	EPA Rfd= 0.003500	Teratology- rabbit							
A.I. CODE: 080803	ONCO: Class C (Tox Note).	analytical values. Evi-	WHO Rfd 0.000000	(Supplementary data)							
CFR No. 180.220		dence of oncogenicity in	Type:								
		rats (mammary).									
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)			
53002KA	GOAT-KIDNEY	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
53002LA	GOAT-LIVER	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
53002MA	GOAT-LEAN	23 COOKED-FRESH-BOILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53002NA	GOAT-LEAN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53003AA	HORSE	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
53003BA	SHEEP-MEAT BYP	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53005BA	SHEEP-OTH ORGAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53005BB	SHEEP-FAT	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53005FA	SHEEP-KIDNEY	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53005KA	SHEEP-LIVER	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
53005LA	SHEEP-LEAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53005MA	SHEEP-LEAN	31 COOKED-FRESH OR CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006AA	PORK-MEAT BYP	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006BA	PORK-OTH ORGAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006BB	PORK-OTH ORGAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006FA	PORK-FAT	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006FA	PORK-FAT	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006FA	PORK-FAT	23 COOKED-FRESH-BOILED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006FA	PORK-FAT	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006FA	PORK-FAT	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006KA	PORK-KIDNEY	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006LA	PORK-LIVER	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006LA	PORK-LIVER	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006MA	PORK-LEAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006MA	PORK-LEAN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
53006MA	PORK-LEAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008BA	TURKEY-BYP	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008BA	TURKEY-BYP	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008LA	TURKEY ORGAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008LA	TURKEY ORGAN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008MA	TURKEY W/O SKIN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008MA	TURKEY W/O SKIN	31 COOKED-FRESH OR CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008MA	TURKEY W/O SKIN	62 COOKED-FRESH OR FROZEN-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008MB	TURKEY+SKIN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008MB	TURKEY+SKIN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55008MC	TURKEY-UNSPEC	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
55013BA	POULTRY,OTH-BYP	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000			
55013LA	POULTRY,ORGAN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000			
55013MA	POULTRY,OTHER	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			
55014AA	EGGS-WHOLE	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000			

Table 1, Continued

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 063

PAGE: 4

DATE: 01/07/88

CHEMICAL		STUDY TYPE		EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
Atrazine	Caswell #063	2yr feeding- dog		Increased weights of	PADI	100	Chronic feeding- dog	Reproduction Teratology- rabbit (Supplementary data)	TOX complete 7/9/86. ORD verified 5/20/87.
CAS No. 1912-24-9		NOEL=	0.3500 mg/kg	heart and liver in female	OPP RfD=	0.003500			
A.I. CODE: 080803		LEL=	14.10 ppm	dogs, doses based on	EPA RfD=	0.003500			
CFR No. 180.220			3.5000 mg/kg	analytical values. Evi-	WHO RfD	0.000000			
		ONCO: Class C (Tox Note).		dence of oncogenicity in	Type:				
				rats (mammary).					
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)	
55014AA	EGGS-WHOLE	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AA	EGGS-WHOLE	22 COOKED-FRESH-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AA	EGGS-WHOLE	23 COOKED-FRESH-BOILED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AA	EGGS-WHOLE	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AB	EGGS-WHITE ONLY	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AB	EGGS-WHITE ONLY	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AB	EGGS-WHITE ONLY	22 COOKED-FRESH-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AB	EGGS-WHITE ONLY	62 COOKED-FRESH OR FROZEN-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AB	EGGS-WHITE ONLY	81 COOKED-FROZEN	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AC	EGGS-YOLK ONLY	10 RAW-FRESH OR NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AC	EGGS-YOLK ONLY	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AC	EGGS-YOLK ONLY	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55014AC	EGGS-YOLK ONLY	31 COOKED-FRESH OR CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015BA	CHICKEN-BYP	00 NOT SPECIFIED (NO CONSUMPTION)	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015LA	CHICKEN-ORGAN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015LA	CHICKEN-ORGAN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015LA	CHICKEN-ORGAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015MA	CHICKEN-W/O SKIN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015MA	CHICKEN-W/O SKIN	22 COOKED-FRESH-BAKED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015MA	CHICKEN-W/O SKIN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015MA	CHICKEN-W/O SKIN	31 COOKED-FRESH OR CANNED	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015MB	CHICKEN+SKIN	21 COOKED-NFS	7F0620	P 0.020000	0.020000		100.00	0.020000	
55015MB	CHICKEN+SKIN	25 COOKED-FRESH-FRIED	7F0620	P 0.020000	0.020000		100.00	0.020000	

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TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

CHEMICAL INFORMATION			STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Atrazine	2yr feeding- dog	dog	Increased weights of heart and liver in female dogs, doses based on analytical values. Evidence of oncogenicity in rats (mammary).	PAD1 100	Chronic feeding- dog	Reproduction- rabbit	Teratology- data (Supplementary data)	WHO RfD 0.000000	TOX complete 7/9/86.	ORD verified 5/20/87.		
Caswell #063	NOEL=	0.3500 mg/kg		OPP RfD= 0.003500				EPA RfD= 0.003500				
CAS No. 1912-24-9	LEL=	14.10 ppm										
A.I. CODE: 080803		3.5000 mg/kg										
CFR No. 180.220		141.00 ppm										
			ONCO: Class C (Tox Note).									
POPULATION SUBGROUP												
U.S. POPULATION - 48 STATES			0.000991	0.000991	28.311057	0.000000	0.000493	14.073200				
U.S. POPULATION - SPRING SEASON			0.000954	0.000954	27.260571	0.000000	0.000473	13.504257				
U.S. POPULATION - SUMMER SEASON			0.000988	0.000988	28.242543	0.000000	0.000499	14.243371				
U.S. POPULATION - FALL SEASON			0.001000	0.001000	28.576657	0.000000	0.000499	14.244457				
U.S. POPULATION - WINTER SEASON			0.000997	0.000997	28.489114	0.000000	0.000501	14.303686				
NORTHEAST REGION			0.000977	0.000977	27.901714	0.000000	0.000483	13.788343				
NORTH CENTRAL REGION			0.001015	0.001015	28.990000	0.000000	0.000502	14.347057				
SOUTHERN REGION			0.000959	0.000959	27.402171	0.000000	0.000474	13.537057				
WESTERN REGION			0.000998	0.000998	28.504400	0.000000	0.000525	14.988343				
HISPANICS			0.001100	0.001100	31.417229	0.000000	0.000607	17.350514				
NON-HISPANIC WHITES			0.000980	0.000980	28.009457	0.000000	0.000484	13.816743				
NON-HISPANIC BLACKS			0.000959	0.000959	27.404057	0.000000	0.000492	14.043714				
NON-HISPANICS OTHER			0.000998	0.000998	28.504543	0.000000	0.000535	15.273286				
NURSING INFANTS (<1 YEAR OLD)			0.000629	0.000629	17.969771	0.000000	0.000454	12.963800				
NON-NURSING INFANTS (<1 YEAR OLD)			0.002326	0.002326	66.455800	0.000000	0.001844	52.697914				
FEMALES (13+ YEARS, PREGNANT)			0.000710	0.000710	20.275686	0.000000	0.000355	10.144400				
FEMALES 13+ YEARS, NURSING			0.000827	0.000827	23.617971	0.000000	0.000399	11.410914				
CHILDREN (1-6 YEARS OLD)			0.002429	0.002429	69.398086	0.000000	0.001296	37.020057				
CHILDREN (7-12 YEARS OLD)			0.001668	0.001668	47.655000	0.000000	0.000844	24.113829				
MALES (13-19 YEARS OLD)			0.001107	0.001107	31.637714	0.000000	0.000534	15.260114				
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)			0.000885	0.000885	25.298343	0.000000	0.000432	12.347057				
MALES (20 YEARS AND OLDER)			0.000690	0.000690	19.717286	0.000000	0.000315	8.999257				
FEMALES (20 YEARS AND OLDER)			0.000597	0.000597	17.065143	0.000000	0.000281	8.021171				

*Current TMRC does not include new or pending tolerances.

**New TMRC includes new, pending, and published tolerances.