



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

JUN 28 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Revised Dietary Exposure/Risk Analysis for Simazine
Special Review.

TO: Jude Andreasen, Review Manager
Special Review Branch
Special Review and Reregistration Division (H7508C)

FROM: Richard Griffin *Richard Griffin*
Dietary Risk Evaluation System (DRES) Staff
Science and Coordination Branch, HED (H7509C)

THROUGH: James P. Kariya *James P. Kariya*
Acting Section Head (DRES)
SACB, Health Effects Division (H7509C)

Action Requested

Provide a chronic dietary exposure/risk assessment using revised anticipated residues for corn and livestock commodities.

Discussion

1. Toxicology Endpoint: This chronic DRES analysis compares exposure estimates to a reference dose (PADI) of 0.002 mg/kg body weight/day based on a NOEL of 0.52 mg/kg bwt/day and an uncertainty factor of 300. The NOEL is based on a 2 year rat feeding study which demonstrated reductions in weight gain and hematological changes in females. This reference dose value has been approved by HED (5/25/89) and Agency (6/15/89) reference dose committees.

Simazine is classified as a category C_(q) (possible human) carcinogen for which quantitative risk assessment is appropriate. The upper bound carcinogenic potency estimate (Q₁*) for Simazine is 0.12 (mg/kg/day)⁻¹.

2. Residue Information: Commodities evaluated are the published uses/tolerances of 40 CFR 180.213 and the published food additive uses/tolerances of 40 CFR 185.5350.

The previous DRES Simazine assessment (R. Griffin memo, 3/1/90) was based on percent crop treated data provided by BEAD (R. Torla memo, 1/9/90) and anticipated residues (parent plus chlorometabolites only) provided by Dietary Exposure Branch (M.

Metzger memo, 1/19/90). This analysis is based on the same percent crop treated data and revised anticipated residues (M. Metzger memo, 6/15/90).

Anticipated residues were revised to account for total residues of the stable triazine ring. The anticipated residue revision of corn and corn-fed livestock commodities was based on a translation of Atrazine metabolism studies. Due to a lack of adequate plant metabolism studies, no other uses could be revised.

The following table summarizes the DEB residue revision:

Table 1.

Commodity	Previous	Current
Corn grain (Food Use)	0.05 ppm	0.1 ppm
Corn fxns (Food Use)	0.05 ppm	0.1 ppm
Corn forage (Feed)	0.1 ppm	5.0 ppm
Corn fodder (Feed)	0.15 ppm	3.0 ppm
Milk	0	0.00007 ppm
Eggs	0	0.0003 ppm
Cattle, goats, hogs, sheep		
Meat, fat, by-products	0	0.0001 ppm
Liver	0	0.0006 ppm
Kidney	0	0.0002 ppm
Poultry		
Meat, fat, by-products	0	0.0003 ppm
Liver	0	0.0004 ppm

Food uses of corn were evaluated at 2% crop treated and livestock commodities at 100%. However, 2% corn crop treated was factored into the livestock anticipated residues.

This analysis addresses only dietary exposure/risk (see R. Griffin memo, 3/1/90) for DRES exposure/risk estimates for Simazine in water at levels of 1, 4, and 10 ppb.

A summary of current uses, tolerances, anticipated residues, and percents crop treated are provided in Table 2.

3. Exposure Analysis: DRES estimates of Theoretical Maximum Residue Contribution (TMRC) are based on tolerances and 100 percent crop treated. Since only anticipated residues were revised, the only resultant changes were DRES estimates of Anticipated Residue Contribution (ARC). The following are dietary ARC estimates for the overall U.S. population and the two most highly exposed sub-groups in mg/kg body weight/day:

	Previous ARC	Revised ARC
Overall U.S.	0.000111 (6% RfD)	0.000113 (6% RfD)
Non-nursing infants	0.000387 (19% RfD)	0.000394 (20% RfD)
Children (1-6 yrs)	0.000281 (14% RfD)	0.000287 (14% RfD)

It should be noted that corn accounts for 1.7 percent, and the livestock commodities 1.2 percent, of the total Simazine exposure estimate (0.000113 mg/kg bwt/day, U.S. population). The commodities that contribute to 97% of the current exposure estimate cannot be revised without adequate metabolism studies.

A summary of TMRC and ARC exposure estimates for all DRES population groups is provided in Table 3.

Risk Assessment

The anticipated residue revision, outlined above, increased the ARC exposure estimate of the overall U.S. by 0.000002 mg/kg bwt/day and the upper bound carcinogenic risk estimate by a similar small increment.

Adverse health effects, other than cancer, due to exposure to Simazine would apparently be minimal with the highest per day exposure of any population sub-group at 20 percent of the reference dose.

Of greatest significance is the carcinogenic risk estimate for Simazine use. The upper bound carcinogenic risk estimate for the overall U.S. population, based on the dietary ARC exposure estimate of 0.000113 mg/kg bwt/day, is 1.36×10^{-5} . This risk estimate is dietary only, any exposure due to water use or contamination will only add to a significant risk estimate.

cc: Caswell # 740
Dietary Exposure Branch (HED)
Toxicology Branch (HED)
DRES

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 740

CHEMICAL			STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Simazine	2yr feeding- rat	Reduction in weight gains	PADI	UF	OPP	FTD=	Reproduction - rat	HED complete				
Caswell #740	NOEL=	hematological changes in	OPP	FTD=	FTD=	FTD=	Teratology - rat	EPA verified				
CAS No. 122-34-9	10.00 ppm	females.	EPA	FTD=	FTD=	FTD=		HED reassess				
A.I. CODE: 080807	LEL=	Evidence of oncogenicity						05/25/89.				
CFR No. 180.213	100.00 ppm	in rats; negative in						EPA verified				
	ONCO: Positive - 1 species	mouse.						06/15/89.				
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)				
01002AA	BLACKBERRIES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01002AA	BLACKBERRIES	21 COOKED-NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01002AA	BLACKBERRIES	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01003AA	BOYSENBERRIES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01004AA	DEWBERRIES	00 NOT SPECIFIED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01005AA	LOGANBERRIES	00 NOT SPECIFIED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01006AA	RASPBERRIES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01006AA	RASPBERRIES	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01006AA	RASPBERRIES	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01006AA	RASPBERRIES	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01006AA	RASPBERRIES	70 RAW-FROZEN	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01009AA	BLUEBERRIES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01009AA	BLUEBERRIES	21 COOKED-NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01009AA	BLUEBERRIES	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01009AA	BLUEBERRIES	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01010AA	CRANBERRIES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01010AA	CRANBERRIES	21 COOKED-NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01010AA	CRANBERRIES	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01010JA	CRANBERRY-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01010JA	CRANBERRY-JUICE	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01011AA	CURRENTS	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01011AA	CURRENTS	21 COOKED-NFS	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01011AA	CURRENTS	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.050000	FTD	100.00	0.050000				
01014AA	GRAPES-FRESH	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014AA	GRAPES-FRESH	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014AA	GRAPES-FRESH	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014DA	GRAPES-RAISINS	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014DA	GRAPES-RAISINS	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014DA	GRAPES-RAISINS	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014JA	GRAPES-JUICE	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014JA	GRAPES-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01014JA	GRAPES-JUICE	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500				
01016AA	STRAWBERRIES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	EXTRAP	100.00	0.050000				
01016AA	STRAWBERRIES	21 COOKED-NFS	7F0534	P 0.250000	0.050000	EXTRAP	100.00	0.050000				
01016AA	STRAWBERRIES	70 RAW-FROZEN	7F0534	P 0.250000	0.050000	EXTRAP	100.00	0.050000				
02002AA	GRAPEFRUIT-UNSP	00 NOT SPECIFIED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	45.00	0.022500				
02002AB	GRAPEFRUIT-PULP	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	45.00	0.022500				
02002AB	GRAPEFRUIT-PULP	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	45.00	0.022500				
02002JA	GRAPEFRUIT-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	45.00	0.022500				
02002JA	GRAPEFRUIT-JUICE	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	45.00	0.022500				

Table 2.

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 740 DATE: 06/27/90 PAGE: 2

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Simazine	2yr feeding- rat	Reduction in weight gains	PADI UF -->300	Reproduction - rat	HED complete 04/25/86.						
Caswell #740	NOEL=	hematological changes in	OPP RfD= 0.002000	Teratology - rat	EPA verified 06/24/86.						
CAS No. 122-34-9	10.00 ppm	females.	EPA RfD= 0.002000		HED reassess 05/25/89.						
A.I. CODE: 080807	LEL=	Evidence of oncogenicity			EPA verified 06/15/89.						
CFR No. 180.213	100.00 ppm	in rats; negative in			On IRIS.						
	ONCO: Positive - 1 species	mouse.									
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)			
02004AA	LEMONS-UNSPEC	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004AA	LEMONS-UNSPEC	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004AB	LEMONS-PULP	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004AB	LEMONS-PULP	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004HA	LEMONS-PEEL	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004HA	LEMONS-PEEL	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004JA	LEMONS-JUICE	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004JA	LEMONS-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004JA	LEMONS-JUICE	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02004JA	LEMONS-JUICE	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	50.00	0.025000			
02006AA	ORANGES-UNSPEC	00 NOT SPECIFIED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006AB	ORANGES-PULP	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006AB	ORANGES-PULP	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006HA	ORANGES-PEEL	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006HA	ORANGES-PEEL	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006HA	ORANGES-PEEL	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006JA	ORANGES-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
02006JA	ORANGES-JUICE	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	45.00	0.022500			
03001AA	ALMONDS	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	FTD-XCT	45.00	0.045000			
03001AA	ALMONDS	21 COOKED-NFS	7F0534	P 0.250000	0.100000	FTD-XCT	45.00	0.045000			
03001AA	ALMONDS	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.100000	FTD-XCT	45.00	0.045000			
03005AA	FILBERTS	10 RAW-FRESH OR NFS	9F0792	P 0.250000	0.100000	FTD	100.00	0.100000			
03005AA	FILBERTS	21 COOKED-NFS	9F0792	P 0.250000	0.100000	FTD	100.00	0.100000			
03005AA	FILBERTS	22 COOKED-FRESH-BAKED	9F0792	P 0.250000	0.100000	FTD	100.00	0.100000			
03007AA	MACADAMIA NUTS	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	FTD	100.00	0.100000			
03008AA	PECANS	10 RAW-FRESH OR NFS	3F1378	P 0.100000	0.100000	XCT	10.00	0.010000			
03008AA	PECANS	21 COOKED-NFS	3F1378	P 0.100000	0.100000	XCT	10.00	0.010000			
03008AA	PECANS	22 COOKED-FRESH-BAKED	3F1378	P 0.100000	0.100000	XCT	10.00	0.010000			
03008AA	PECANS	23 COOKED-FRESH-BOILED	3F1378	P 0.100000	0.100000	XCT	10.00	0.010000			
03008AA	PECANS	62 COOKED-FRESH OR FROZEN-BAKED	3F1378	P 0.100000	0.100000	XCT	10.00	0.010000			
03009AA	WALNUTS	10 RAW-FRESH OR NFS	7F0534	P 0.200000	0.100000	FTD-XCT	50.00	0.050000			
03009AA	WALNUTS	21 COOKED-NFS	7F0534	P 0.200000	0.100000	FTD-XCT	50.00	0.050000			
03009AA	WALNUTS	22 COOKED-FRESH-BAKED	7F0534	P 0.200000	0.100000	FTD-XCT	50.00	0.050000			
04001AA	APPLES-FRESH	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			
04001AA	APPLES-FRESH	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			
04001AA	APPLES-FRESH	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			
04001AA	APPLES-FRESH	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			
04001DA	APPLES-DRIED	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			
04001DA	APPLES-DRIED	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			
04001DA	APPLES-DRIED	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.050000	PR-FTD-XCT	40.00	0.020000			

Table 2.

PAGE: 3

DATE: 06/27/90

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 740

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
Simazine Caswell #740 CAS No. 122-34-9 A.I. CODE: 080807 CFR No. 180.213	2yr feeding- rat NOEL= 0.5200 mg/kg 10.00 ppm LEL= 5.3000 mg/kg 100.00 ppm ONCO: Positive - 1 species	Reduction in weight gains hematological changes in females. Evidence of oncogenicity in rats; negative in mouse.		PADI UF -->300 OPP RfD= 0.002000 EPA RfD= 0.002000		Reproduction - rat Teratology - rat		HED complete 04/25/86. EPA verified 06/24/86. HED reassess 05/25/89. EPA verified 06/15/89. On IRIS.		
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)		
04001JA	APPLES-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	40.00	0.020000		
04001JA	APPLES-JUICE	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	40.00	0.020000		
04003AA	PEARS-FRESH	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	EXTRAP-%CT	50.00	0.025000		
04003AA	PEARS-FRESH	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	EXTRAP-%CT	50.00	0.025000		
04003AA	PEARS-FRESH	51 COOKED-CANNED	7F0534	P 0.250000	0.050000	EXTRAP-%CT	50.00	0.025000		
04003AA	PEARS-FRESH	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.050000	EXTRAP-%CT	50.00	0.025000		
04003DA	PEARS-DRIED	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	EXTRAP-%CT	50.00	0.025000		
04003DA	PEARS-DRIED	21 COOKED-NFS	7F0534	P 0.250000	0.050000	EXTRAP-%CT	50.00	0.025000		
05002AA	CHERRIES-FRESH	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05002AA	CHERRIES-FRESH	21 COOKED-NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05002AA	CHERRIES-FRESH	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05002AA	CHERRIES-FRESH	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05002DA	CHERRIES-DRIED	00 NOT SPECIFIED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05002JA	CHERRIES-JUICE	15 RAW-FRESH OR CANNED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05002JA	CHERRIES-JUICE	21 COOKED-NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	45.00	0.045000		
05004AA	PEACHES-FRESH	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500		
05004AA	PEACHES-FRESH	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500		
05004AA	PEACHES-FRESH	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500		
05004AA	PEACHES-FRESH	51 COOKED-CANNED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500		
05004DA	PEACHES-DRIED	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500		
05004DA	PEACHES-DRIED	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	35.00	0.017500		
05005AA	PLUMS-FRESH	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
05005AA	PLUMS-FRESH	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
05005DA	PLUMS-PRUNES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
05005DA	PLUMS-PRUNES	21 COOKED-NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
05005DA	PLUMS-PRUNES	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
05005JA	PRUNE-JUICE	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
05005JA	PRUNE-JUICE	62 COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.250000	0.100000	PR-FTD-%CT	12.00	0.012000		
06001AA	AVOCADOS	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	FTD-%CT	30.00	0.015000		
06002AA	BANANAS-UNSPEC	22 COOKED-FRESH-BAKED	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06002AB	BANANAS-FRESH	10 RAW-FRESH OR NFS	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06002AB	BANANAS-FRESH	21 COOKED-NFS	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06002AB	BANANAS-FRESH	31 COOKED-FRESH OR CANNED	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06002DA	BANANAS-DRIED	10 RAW-FRESH OR NFS	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06002DA	BANANAS-DRIED	21 COOKED-NFS	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06009AA	OLIVES	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	18.00	0.009000		
06009AA	OLIVES	11 RAW-FRESH-PICKLED, CORNED, OR CURED	7F0534	P 0.250000	0.050000	PR-FTD-%CT	18.00	0.009000		
06009AA	OLIVES	21 COOKED-NFS	7F0534	P 0.250000	0.050000	PR-FTD-%CT	18.00	0.009000		
06016AA	PLANTAINS	21 COOKED-NFS	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		
06016AA	PLANTAINS	23 COOKED-FRESH-BOILED	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000		

Table 2.

PAGE: 4

DATE: 06/27/90

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 740

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Simazine Caswell #740 CAS No. 122-34-9 A.I. CODE: 080807 CFR No. 180.213	2yr feeding- rat NOEL= 0.5200 mg/kg LEL= 5.3000 mg/kg 100.00 ppm ONCO: Positive - 1 species	Reduction in weight gains hematological changes in females. Evidence of oncogenicity in rats; negative in mouse.	PADI		UF --300	Reproduction - rat Teratology - rat	HED complete 04/25/86. EPA verified 06/24/86. HED reassess 05/25/89. EPA verified 06/15/89. On IRIS.				
			OPP RfD= 0.002000								
			EPA RfD= 0.002000								
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)			
06016AA	PLANTAINS	25 COOKED-FRESH-FRIED	6E1725	P 0.200000	0.020000	FTD-%CT	10.00	0.002000			
13018AA	ARTICHOKE-GLOBE	21 COOKED-NFS	7F0534	P 0.500000	0.100000	FTD-%CT	75.00	0.075000			
15004AA	CORN, POP	21 COOKED-NFS	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
15005AA	CORN, SWEET	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	TRANSLATION	5.00	0.005000			
15005AA	CORN, SWEET	21 COOKED-NFS	7F0534	P 0.250000	0.100000	TRANSLATION	5.00	0.005000			
15005AA	CORN, SWEET	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.100000	TRANSLATION	5.00	0.005000			
16002AA	ASPARAGUS	21 COOKED-NFS	7F0534	P 10.00000	1.800000	FTD-%CT	5.00	0.090000			
16002AA	ASPARAGUS	23 COOKED-FRESH-BOILED	7F0534	P 10.00000	1.800000	FTD-%CT	5.00	0.090000			
24002EA	CORN, GRAIN-ENDO	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002EA	CORN, GRAIN-ENDO	21 COOKED-NFS	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002EA	CORN, GRAIN-ENDO	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002EA	CORN, GRAIN-ENDO	23 COOKED-FRESH-BOILED	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002HA	CORN, GRAIN-BRAN	00 NOT SPECIFIED	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002SA	CORN SUGAR	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002SA	CORN SUGAR	21 COOKED-NFS	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
24002SA	CORN SUGAR	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
25003SA	CANE SUGAR	10 RAW-FRESH OR NFS	7F0534	P 0.250000	0.070000	PR-FTD-%CT	10.00	0.007000			
25003SA	CANE SUGAR	21 COOKED-NFS	7F0534	P 0.250000	0.070000	PR-FTD-%CT	10.00	0.007000			
25003SA	CANE SUGAR	22 COOKED-FRESH-BAKED	7F0534	P 0.250000	0.070000	PR-FTD-%CT	10.00	0.007000			
25003SA	CANE SUGAR	31 COOKED-FRESH OR CANNED	7F0534	P 0.250000	0.070000	PR-FTD-%CT	10.00	0.007000			
25003SB	SUGAR-MOLASSES	10 RAW-FRESH OR NFS	1H2572	P 1.000000	0.660000	PR-FTD-%CT	10.00	0.066000			
25003SB	SUGAR-MOLASSES	21 COOKED-NFS	1H2572	P 1.000000	0.660000	PR-FTD-%CT	10.00	0.066000			
25003SB	SUGAR-MOLASSES	22 COOKED-FRESH-BAKED	1H2572	P 1.000000	0.660000	PR-FTD-%CT	10.00	0.066000			
25003SB	SUGAR-MOLASSES	31 COOKED-FRESH OR CANNED	4H2572	P 1.000000	0.660000	PR-FTD-%CT	10.00	0.066000			
270020A	CORN, GRAIN-OIL	18 PROCESSED OIL	7F0534	P 0.250000	0.100000	TRANSLATION	2.00	0.002000			
270160A	OLIVE OIL	18 PROCESSED OIL	7F0534	P 0.250000	0.050000	PR-FTD-%CT	25.00	0.012500			
500000B	MILK-NON-FAT SOL	10 RAW-FRESH OR NFS	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
500000B	MILK-NON-FAT SOL	21 COOKED-NFS	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
500000B	MILK-NON-FAT SOL	51 COOKED-CANNED	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
50000FA	MILK-FAT SOLIDS	10 RAW-FRESH OR NFS	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
50000FA	MILK-FAT SOLIDS	21 COOKED-NFS	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
50000FA	MILK-FAT SOLIDS	51 COOKED-CANNED	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
50000SA	MILK SUG (LACT)	21 COOKED-NFS	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
50000SA	MILK SUG (LACT)	51 COOKED-CANNED	7F0534	P 0.020000	0.000070	EXTRAP	100.00	0.000070			
530018A	BEEF-MEAT BYP	21 COOKED-NFS	7F0534	P 0.020000	0.000100	EXTRAP	100.00	0.000100			
530018A	BEEF-MEAT BYP	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0534	P 0.020000	0.000100	EXTRAP	100.00	0.000100			
530018B	BEEF-OTH ORGAN	21 COOKED-NFS	7F0534	P 0.020000	0.000100	EXTRAP	100.00	0.000100			
530018B	BEEF-OTH ORGAN	51 COOKED-CANNED	7F0534	P 0.020000	0.000100	EXTRAP	100.00	0.000100			
53001DA	BEEF-DRIED	21 COOKED-NFS	7F0534	P 0.020000	0.000100	EXTRAP	100.00	0.000100			
53001FA	BEEF-FAT	10 RAW-FRESH OR NFS	7F0534	P 0.020000	0.000100	EXTRAP	100.00	0.000100			

ANTICIPATED RESIDUE INFORMATION FOR CASSELL NUMBER 740

FOOD CODE

33006MA	PORK-LEAN	21	COOKED-NFS	7F0534	P 0.020000	0.000100	EXTRAP	0.000100
33006MA	PORK-LEAN	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000100	EXTRAP	0.000100
33006MA	PORK-LEAN	26	COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0534	P 0.020000	0.000100	EXTRAP	0.000100
33010AA	FISH-UNSPEC	21	COOKED-NFS	0F0996	P 12.00000	4.680000	EXTRAP-XCT	0.468000
33016AA	FISH,FIN-FRESH	21	COOKED-NFS	0F0996	P 12.00000	4.680000	EXTRAP-XCT	0.468000
33016AA	FISH,FIN-FRESH	25	COOKED-FRESH-FRIED	0F0996	P 12.00000	4.680000	EXTRAP-XCT	0.468000
33008BA	TURKEY-BYP	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008BA	TURKEY-BYP	26	COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008BA	TURKEY ORGAN	21	COOKED-NFS	7F0534	P 0.020000	0.000400	EXTRAP	0.000400
33008BA	TURKEY ORGAN	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000400	EXTRAP	0.000400
33008MA	TURKEY W/O SKIN	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008MA	TURKEY W/O SKIN	31	COOKED-FRESH OR CANNED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008MA	TURKEY W/O SKIN	62	COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008MB	TURKEY+SKIN	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008MB	TURKEY+SKIN	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33008MC	TURKEY-UNSPEC	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33013BA	POULTRY,OTH-BYP	00	NOT SPECIFIED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33013BA	POULTRY,ORGAN	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000400	EXTRAP	0.000400
33013MA	POULTRY,OTHER	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AA	EGGS-WHOLE	10	RAW-FRESH OR NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AA	EGGS-WHOLE	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AA	EGGS-WHOLE	22	COOKED-FRESH-BAKED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AA	EGGS-WHOLE	23	COOKED-FRESH-BOILED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AA	EGGS-WHOLE	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AB	EGGS-WHITE ONLY	10	RAW-FRESH OR NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AB	EGGS-WHITE ONLY	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AB	EGGS-WHITE ONLY	22	COOKED-FRESH-BAKED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AB	EGGS-WHITE ONLY	62	COOKED-FRESH OR FROZEN-BAKED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AB	EGGS-WHITE ONLY	81	COOKED-FROZEN	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AC	EGGS-YOLK ONLY	10	RAW-FRESH OR NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AC	EGGS-YOLK ONLY	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AC	EGGS-YOLK ONLY	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33014AC	EGGS-YOLK ONLY	31	COOKED-FRESH OR CANNED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33015BA	CHICKEN-BYP	00	NOT SPECIFIED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33015LA	CHICKEN-ORGAN	21	COOKED-NFS	7F0534	P 0.020000	0.000400	EXTRAP	0.000400
33015LA	CHICKEN-ORGAN	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000400	EXTRAP	0.000400
33015LA	CHICKEN-ORGAN	26	COOKED-FRESH-PICKLED, CORNED, OR CURED	7F0534	P 0.020000	0.000400	EXTRAP	0.000400
33015MA	CHICKEN-W/O SKIN	21	COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33015MA	CHICKEN-W/O SKIN	22	COOKED-FRESH-BAKED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300
33015MA	CHICKEN-W/O SKIN	25	COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000300	EXTRAP	0.000300

Table 2.

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 740 DATE: 06/27/90 PAGE: 7

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Simazine		2yr feeding- rat		Reduction in weight gains	PADI UF -->300	OPP Rfd= 0.002000	Reproduction - rat	HED complete 04/25/86.	On IRIS.		
Caswell #740		NOEL= 0.5200 mg/kg		hematological changes in females.		EPA Rfd= 0.002000	Teratology - rat	EPA verified 06/24/86.			
CAS No. 122-34-9		LEL= 5.3000 mg/kg		Evidence of oncogenicity in rats; negative in mouse.				EPA reassess 05/25/89.			
A.I. CODE: 080807		100.00 ppm						EPA verified 06/15/89.			
CFR No. 180.213		ONCO: Positive - 1 species									
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)			
55015MA	CHICKEN-W/O SKIN	31 COOKED-FRESH OR CANNED	7F0534	P 0.020000	0.000300	EXTRAP	100.00	0.000300			
55015MA	CHICKEN-W/O SKIN	53 COOKED-CANNED-BOILED	7F0534	P 0.020000	0.000300	EXTRAP	100.00	0.000300			
55015MB	CHICKEN+SKIN	21 COOKED-NFS	7F0534	P 0.020000	0.000300	EXTRAP	100.00	0.000300			
55015MB	CHICKEN+SKIN	25 COOKED-FRESH-FRIED	7F0534	P 0.020000	0.000300	EXTRAP	100.00	0.000300			
65015AA	WATER-FOOD BASED	10 RAW-FRESH OR NFS	3H5035	P 0.010000	0.000000	DIETARY ONLY	100.00	0.000000			
65015AA	WATER-FOOD BASED	21 COOKED-NFS	3H5035	P 0.010000	0.000000	DIETARY ONLY	100.00	0.000000			
65015AC	WATER--NON-FOOD	10 RAW-FRESH OR NFS	3H5035	P 0.010000	0.000000	DIETARY ONLY	100.00	0.000000			

Table 3.

TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

DATE: 06/27/90

PAGE: 1

CHEMICAL INFORMATION			STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
Simazine	Caswell #740	2yr feeding- rat	NOEL=	0.5200 mg/kg	Reduction in weight gains	PADI	UF -->300	Reproduction - rat	HED complete 06/25/86.		
	CAS No. 122-34-9	10.00 ppm		10.00 ppm	hematological changes in females.	OPP RfD=	0.002000	Teratology - rat	EPA verified 06/24/86.		
	A.I. CODE: 080807	5.3000 mg/kg	LEL=	5.3000 mg/kg	Evidence of oncogenicity in rats; negative in mouse.	EPA RfD=	0.002000		HED reassess 05/25/89.		
	CFR No. 180.213	100.00 ppm		100.00 ppm					EPA verified 06/15/89.		
					ONCO: Positive - 1 species						On IRIS.
TOTAL TMRC (MG/KG BODY WEIGHT/DAY)											
					CURRENT TMRC*	NEW TMRC**	NEW TMRC AS PERCENT OF RFD	DIFFERENCE AS PERCENT OF RFD	EFFECT OF ANTICIPATED RESIDUES		
									ARC	%RFD	
POPULATION SUBGROUP											
U.S. POPULATION - 48 STATES					0.002506	0.002506	125.310200	0.000000	0.000113	5.66800	
U.S. POPULATION - SPRING SEASON					0.002544	0.002544	127.206000	0.000000	0.000114	5.67930	
U.S. POPULATION - SUMMER SEASON					0.002489	0.002489	124.474900	0.000000	0.000111	5.53655	
U.S. POPULATION - FALL SEASON					0.002458	0.002458	122.914050	0.000000	0.000112	5.62055	
U.S. POPULATION - WINTER SEASON					0.002530	0.002530	126.512400	0.000000	0.000116	5.79110	
NORTHEAST REGION					0.002466	0.002466	123.306000	0.000000	0.000126	6.30900	
NORTH CENTRAL REGION					0.002523	0.002523	126.156750	0.000000	0.000113	5.63110	
SOUTHERN REGION					0.002430	0.002430	121.488850	0.000000	0.000100	5.01065	
WESTERN REGION					0.002665	0.002665	133.244750	0.000000	0.000119	5.93505	
HISPANICS					0.002657	0.002657	132.858200	0.000000	0.000124	6.18225	
NON-HISPANIC WHITES					0.002438	0.002438	121.876950	0.000000	0.000110	5.51040	
NON-HISPANIC BLACKS					0.002824	0.002824	141.182900	0.000000	0.000123	6.16805	
NON-HISPANIC OTHERS					0.002943	0.002943	147.156500	0.000000	0.000146	7.30015	
NURSING INFANTS (< 1 YEAR OLD)					0.003974	0.003974	198.702450	0.000000	0.000242	12.09610	
NON-NURSING INFANTS (< 1 YEAR OLD)					0.008134	0.008134	406.707400	0.000000	0.000394	19.70590	
FEMALES (13+ YEARS, PREGNANT)					0.001804	0.001804	90.183350	0.000000	0.000084	4.18820	
FEMALES 13+ YEARS, NURSING					0.002067	0.002067	103.355750	0.000000	0.000090	4.50520	
CHILDREN (1-6 YEARS OLD)					0.005722	0.005722	286.077300	0.000000	0.000287	14.33000	
CHILDREN (7-12 YEARS OLD)					0.003307	0.003307	165.352200	0.000000	0.000154	7.68690	
MALES (13-19 YEARS OLD)					0.002148	0.002148	107.395500	0.000000	0.000090	4.48040	
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)					0.001957	0.001957	97.872300	0.000000	0.000087	4.32935	
MALES (20 YEARS AND OLDER)					0.001880	0.001880	94.024450	0.000000	0.000076	3.78585	
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)					0.001913	0.001913	95.640100	0.000000	0.000085	4.24740	

*Current TMRC does not include new or pending tolerances.

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