



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

FEB 3 1989

FEB 3 '89

~~EXCLUDED~~
P. ERIC
W. T. CHIN
6F3380
Rose *file*

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#6F3380/6H5502. Glyphosate in or on Soybeans:
TAS Dietary Exposure Analysis.

FROM: Susan L. Stanton *Susan L. Stanton* 02/02/89
Tolerance Assessment Staff
HED/SACB (TS-769C)

THRU: Bruce Jaeger *RJ* 2/3/89
Head, Special Analysis and Outreach Section
HED/SACB (TS-769C)

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

Action Requested

SACB has been asked to provide a TAS analysis of dietary exposure resulting from the proposed use of glyphosate on soybeans. The proposed use would increase the established tolerance for residues of glyphosate and its AMPA metabolite in or on soybeans from 6.0 ppm to 20.0 ppm. Dietary Exposure Branch (DEB) has recommended in favor of the proposed increase (memo. W. T. Chin to R. J. Taylor, 01/30/89).

Discussion

1. Toxicology Endpoint: A TAS chronic exposure analysis was conducted using a Reference Dose (ADI) of 0.1 mg/kg body wt/day, based on the No Observable Effect Level (NOEL) of 10.0 mg/kg/day from a 3-generation rat reproduction study with an uncertainty factor of 100. This value has been approved by HED (02/28/86) and verified by the Agency reference dose committee (03/11/86).

2. Residue Data Used in the Analysis: The food uses evaluated include those for which tolerances have been established under 40 CFR 180.364 and 185.3500 and the proposed use on soybeans. Exposure estimates provided by this analysis assume that residues would be present at tolerance levels on all foods and that 100% of all crops would be treated with glyphosate. The attached Table 1 contains a complete listing of residues used in the analysis.

1.5/10

3. Analysis Summary: The TAS chronic exposure analysis estimates average daily exposure for the overall U.S. population and each of 22 population subgroups and compares these estimates to the acceptable daily intake (See Table 2). The Theoretical Maximum Residue Contribution (TMRC) for the overall U.S. population from the established uses and the proposed use on soybeans is estimated to be 0.009853 mg/kg body wt/day, which occupies approximately 10% of the ADI. The two most highly exposed subgroups are non-nursing infants less than 1 year old (TMRC = 0.039048 mg/kg/day or 39% of the ADI) and children, 1 to 6 years old (TMRC = 0.019086 mg/kg/day or 19% of the ADI). The effect of the new action (increasing the soybean tolerance from 6 to 20 ppm) on exposure is shown below:

	<u>Established Uses</u>	<u>New Action (Soybeans)^a</u>	<u>Total Exposure</u>
U.S. Population	0.005095 ^b (5.1%) ^c	0.004759 (4.8%)	0.009853 (9.9%)
Non-Nursing Infants	0.016217 (16.2%)	0.022832 (22.8%)	0.039048 (39.0%)
Children, 1 to 6	0.010180 (10.2%)	0.008906 (8.9%)	0.019086 (19.1%)

^aIncludes the exposure from the increase of 14 ppm in the soybean tolerance only (from 6 to 20 ppm).

^bExposure expressed as mg/kg body wt/day.

^cExposure expressed as a percent of the ADI.

The above estimates are based on tolerance level residues and assume 100% of all crops are treated. Actual exposure would likely be lower, since tolerances generally overestimate residues that would be found in foods as eaten. However, since no TAS subgroups have estimated exposures which exceed the acceptable daily intake using this conservative approach, a more refined analysis is not deemed necessary.

CC: Stanton (SACB), Caswell File #661A, TAS File, DEB (Loranger), Dykstra (HFASB)

Table 1

CHEMICAL INFORMATION FOR CASWELL NUMBER 661A

DATE: 02/02/89

PAGE: 1.

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Glyphosate (+ salts)	3gen reprod- rat	Renal tubular dilation in pups.	ADI SF -->100	Rat oncogenicity (no MTD in chronic feeding study)	HED complete 2/28/86.
Caswell #661A	NOEL= 10.0000 mg/kg	Equivocal evidence of on-cogenicity in the mouse (kidney adenoma); rat	OPP RfD= 0.100000	Mouse oncogenicity (need to resolve kidney tumor issue)	EPA verified 3/11/86.
CAS No. 1071-83-6	0.00 ppm		EPA RfD= 0.100000		WHO last reviewed 1986.
A.I. CODE: 417300	LEL= 30.0000 mg/kg				
CFR No. 180.364	0.00 ppm				
	ONCO: D (SAP); C (TOX)	study no MTD.		Not regulated as oncogen.	On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM)	
			NEW	PENDING
01002AA	BLACKBERRIES	3E2930		0.200000
01003AA	BOYSENBERRIES	3E2930		0.200000
01004AA	DEWBERRIES	3E2930		0.200000
01005AA	LOGANBERRIES	3E2930		0.200000
01006AA	RASPBERRIES	3E2930		0.200000
01007AA	YOUNGBERRIES	3E2930		0.200000
01009AA	BLUEBERRIES	3E2930		0.200000
01010AA	CRANBERRIES	OE2421		0.200000
01010JA	CRANBERRIES-JUICE	OE2421		0.200000
01011AA	CURRENTS	3E2930		0.200000
01012AA	ELDERBERRIES	3E2930		0.200000
01013AA	GOOSEBERRIES	3E2930		0.200000
01014AA	GRAPES-FRESH	5F1560		0.200000
01014DA	GRAPES-RAISINS	5F1560		0.200000
01014JA	GRAPES-JUICE	5F1560		0.200000
01015AA	HUCKLEBERRIES (GAYLUSSACIA)	3E2930		0.200000
01016AA	STRAWBERRIES	3E2930		0.200000
02001AA	CITRUS CITRON	6F1733		0.200000
02002AA	GRAPEFRUIT-UNSPECIFIED	6F1733		0.200000
02002AB	GRAPEFRUIT-PULP	6F1733		0.200000
02002JA	GRAPEFRUIT-JUICE	6F1733		0.200000
02003AA	KUMQUATS	6F1733		0.200000
02004AA	LEMONS-UNSPECIFIED	6F1733		0.200000
02004AB	LEMONS-PULP	6F1733		0.200000
02004HA	LEMONS-PEEL	6F1733		0.200000
02004JA	LEMONS-JUICE	6F1733		0.200000
02005AA	LIMES-UNSPECIFIED	6F1733		0.200000
02005AB	LIMES-PULP	6F1733		0.200000
02005HA	LIMES-PEEL	6F1733		0.200000
02005JA	LIMES-JUICE	6F1733		0.200000
02006AA	ORANGES-UNSPECIFIED	6F1733		0.200000
02006AB	ORANGES-PULP	6F1733		0.200000
02006HA	ORANGES-PEEL	6F1733		0.200000
02006JA	ORANGES-JUICE	6F1733		0.200000
02007AA	TANGELOS	6F1733		0.200000
02008AA	TANGERINES	6F1733		0.200000
02008JA	TANGERINE-JUICE	6F1733		0.200000
01001AA	ALMONDS	7F1893		0.200000
01002AA	BRAZIL NUTS	7F1893		0.200000
01003AA	CASHEWS	7F1893		0.200000

Table 1 (cont.)

CHEMICAL INFORMATION FOR CASWELL NUMBER 661A DATE: 02/02/99 PAGE: 2

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)		PUBLISHED	ADI	SF -->100	Rat oncogenicity (no MTD in chronic feeding study)	EPA verified 3/1/86.	WHO last reviewed 1986.
				PENDING							
	GL-phosphate (+ salts)			Renal tubular dilation in pups.	Equival evidence of on-cogenicity in the mouse (kidney adenoma); rat						
	Caswell #661A			10gen reprod- rat	study no MTD.						
	CAS No. 1071-83-6			NOEL=	ONCO: D (SAP); C (TOX)						
	A.I. CODE: 417300			0.00 ppm							
	CFR No. 180.364			30.0000 mg/kg							
				0.00 ppm							

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CHEMICAL INFORMATION FOR CASWELL NUMBER 661A

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Glyphosate (+ salts)	3 gen reprod- rat	Renal tubular dilation in pups.	ADI SF -->100	Rat oncogenicity (no MTD in chronic feeding study);	HED complete 2/28/86.
Caswell #661A	NOEL= 10,000 mg/kg		OPP RfD= 0.100000		EPA verified 3/11/86.
CAS NO. 1071-83-6	0.00 ppm	Equivocal evidence of oncogenicity in the mouse	EPA RfD= 0.100000	Mouse oncogenicity (need to resolve kidney tumor issue).	WHO last reviewed 1986.
A.I. CODE: 417300	LEL= 30,000 mg/kg	(kidney adenoma); rat			
CFR No. 180.364	0.00 ppm				
	ONCO: D (SAP); C (TOX)	study no MTD.		Not regulated as oncogen	On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)	PENDING	PUBLISHED
06010DA	PAPAYAS-DRIED	1E2443		0.200000		0.200000
06010JA	PAPAYAS-JUICE	1E2443		0.200000		0.200000
06013AA	PINEAPPLE-FRESH/PULP	2F2634		0.100000		0.100000
06013DA	PINEAPPLE-DRIED	2F2634		0.100000		0.100000
06013JA	PINEAPPLE-FRESH/JUICE	2F2634		0.100000		0.100000
06016AA	PLANTAINS	9F2223		0.200000		0.200000
06018AA	KIWI	3E2929		0.200000		0.200000
06020AA	ACEROLA	3E2929		0.200000		0.200000
06025AA	SUGAR APPLES (SWEET SOP)	6E3424		0.200000		0.200000
06029AA	CARAMBOLA	6E3424		0.200000		0.200000
07002AA	COFFEE	6E1809		1.000000		1.000000
07003AA	TEA	1H5310		4.000000		4.000000
07006AA	CHICORY	7F2016		0.200000		0.200000
08015AA	DILL	7F2016		0.200000		0.200000
08020AA	HOPS	7F2016		0.100000		0.100000
10002AA	CANTALOUPE-UNSPECIFIED	3E2845		0.500000		0.500000
10002AB	CANTALOUPE-PULP	3E2845		0.500000		0.500000
10003AA	CASABAS	3E2845		0.500000		0.500000
10004AA	CRENSHAW	3E2845		0.500000		0.500000
10005AA	HONEYDEW MELONS	3E2845		0.500000		0.500000
10007AA	PERSION MELONS	3E2845		0.500000		0.500000
10008AA	WATERMELON	3E2845		0.500000		0.500000
10010AA	CUCUMBERS	3E2845		0.500000		0.500000
10011AA	PUMPKIN	3E2845		0.500000		0.500000
10013AA	SQUASH-SUMMER	3E2845		0.500000		0.500000
10014AA	SQUASH-WINTER	3E2845		0.500000		0.500000
10017AA	BITTER MELON	3E2845		0.500000		0.500000
10020AA	TOMELGOURD	3E2845		0.500000		0.500000
111001AA	EGGPLANT	3E2845		0.100000		0.100000
111003AA	PEPPERS (SWEET/GARDEN)	3E2845		0.100000		0.100000
111003AB	CHILI PEPPERS	3E2845		0.100000		0.100000
111003AD	PEPPERS-OTHER	3E2845		0.100000		0.100000
111004AA	PIMIENTOS	3E2845		0.100000		0.100000
111005AA	TOMATOES-WHOLE	3E2845		0.100000		0.100000
111005JA	TOMATOES-JUICE	3E2845		0.100000		0.100000
111005RA	TOMATOES-PUREE	3E2845		0.100000		0.100000
111005TA	TOMATOES-PASTE	3E2845		0.100000		0.100000
111007AA	TOMATOES-TATSUP	3E2845		0.100000		0.100000
111007AA	BEETS-TOPS(GREENS)	3E2845		0.200000		0.200000
111007AA	CELERY	3E2845		0.200000		0.200000

Table 1 (con't)

CHEMICAL INFORMATION FOR CASWELL NUMBER 661A

DATE: 02/02/89

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FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)		PUBLISHED	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
				PENDING	PENDING			ADI	SF		
13003AA	CHICORY (FRENCH OR BELGIAN ENDIVE)	8E2122				0.200000			-->100	Rat oncogenicity (no MTD in chronic feeding study)	HED complete 2/28/86.
13005AA	BROCCOLI	8E2122				0.200000			OPP RfD= 0.100000	Mouse oncogenicity (need to resolve kidney tumor issue).	EPA verified 3/11/86.
13006AA	BRUSSEL SPROUTS	8E2122				0.200000			EPA RfD= 0.100000		WHO last reviewed 1986.
13007AA	CABBAGE-GREEN AND RED	8E2122				0.200000					
13008AA	CAULIFLOWER	8E2122				0.200000					
13009AA	COLLARDS	8E2122				0.200000					
13010AA	CABBAGE-CHINESE/CELERY(INC. BOK CHOY)	8E2122				0.200000					
13011AA	KALE	8E2122				0.200000					
13012AA	KOHLRABI	8E2122				0.200000					
13013AA	LETTUCE-LEAFY VARIETIES	8E2122				0.200000					
13014AA	DANDELION	8E2122				0.200000					
13015AA	ENDIVE (CURLEY) AND ESCAROLE	8E2122				0.200000					
13016AA	FENNEL	8E2122				0.200000					
13017AA	CRESS (GARDEN/FIELD)	8E2122				0.200000					
13020AA	LETTUCE-UNSPECIFIED	8E2122				0.200000					
13021AA	MUSTARD GREENS	8E2122				0.200000					
13022AA	PARSLEY	8E2122				0.200000					
13023AA	RHUBARB	8E2122				0.200000					
13024AA	SPINACH	8E2122				0.200000					
13025AA	SWISS CHARD	8E2122				0.200000					
13026AA	TURNIPS-TOPS	8E2122				0.200000					
13039AA	CRESS (UPLAND)	8E2122				0.200000					
13045AA	LETTUCE-HEAD VARIETIES	8E2122				0.200000					
14001AA	BEETS-ROOTS	7F2016				0.200000					
14003AA	CARROTS	7F2016				0.200000					
14007AA	GARLIC	8E3676				0.200000					
14009AA	ARTICHOKES-JERUSALEM	7F2016				0.200000					
14010AA	LEeks	8E3676				0.200000					
14011AA	ONIONS-DRY-BULB (CIPOLLINI)	8E3676				0.200000					
14011DA	ONIONS-DEHYDRATED OR DRIED	8E3676				0.200000					
14013AA	POTATOES(WHITE)-WHOLE	7F2016				0.200000					
14013AB	POTATOES(WHITE)-UNSPECIFIED	7F2016				0.200000					
14013AC	POTATOES(WHITE)-PEELED	7F2016				0.200000					
14013DA	POTATOES(WHITE)-DRY	7F2016				0.200000					
14013HA	POTATOES(WHITE)-PEEL ONLY	7F2016				0.200000					
14014AA	RADISHES-ROOTS	7F2016				0.200000					
14014AA	RUTABAGAS ROOTS	7F2016				0.200000					
14014AA	CALIFORNIA WATER PLANT	7F2016				0.200000					
14014AA	WALNUTS	8E3676				0.200000					
14014AA	SWEET POTATOES (INCLUDING TAMS)	7F2016				0.200000					

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Table 1 (con't)

CHEMICAL INFORMATION FOR CASWELL NUMBER 661A

DATE: 02/02/99

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CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Glyphosate (+ salts)	3gen reprod- rat	Renal tubular dilation in pups.	ADI SF -->100	Rat oncogenicity (no MTD in chronic feeding study)	HED complete 2/28/86.
Caswell #661A	NOEL= 10.0000 mg/kg		OPP RfD= 0.100000		EPA verified 3/11/86.
CAS No. 1071-83-6	0.00 ppm	Equivocal evidence of on-	EPA RfD= 0.100000	Mouse oncogenicity (need to resolve kidney tumor issue).	WHO last reviewed 1986.
A.I. CODE: 417300	LEL= 30.0000 mg/kg	cogenicity in the mouse (kidney adenoma); rat			
CFR No. 180.364	0.00 ppm				
	ONCO: D (SAP); C (TOX)	study no MTD.		Not regulated as oncogen	On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM)	
			PENDING	PUBLISHED
14019AA	TURNIPS-ROOTS	7F2016		0.200000
14021AA	PARSNIPS	7F2016		0.200000
14030AA	PARSLEY ROOTS	7F2016		0.200000
15001AA	BEANS-DRY-GREAT NORTHERN	7F2016		0.200000
15001AB	BEANS-DRY-KIDNEY	7F2016		0.200000
15001AC	BEANS-DRY-LIMA	7F2016		0.200000
15001AD	BEANS-DRY-NAVY (PEA)	7F2016		0.200000
15001AE	BEANS-DRY-OTHER	7F2016		0.200000
15001AF	BEANS-DRY-PINTO	7F2016		0.200000
15002AA	BEANS-SUCCULENT-LIMA	7F2016		0.200000
15003AA	BEANS-SUCCULENT-GREEN	7F2016		0.200000
15003AB	BEANS-SUCCULENT-OTHER	7F2016		0.200000
15003AC	BEANS-SUCCULENT-YELLOW/WAX	7F2016		0.200000
15004AA	CORN (POP)	8E2122		0.100000
15005AA	CORN (SWEET)	8E2122		0.100000
15006AA	PEANUTS-WHOLE	0F2329		0.100000
15007AA	PEAS(GARDEN)-MATURE SEEDS/DRY	7F2016		0.200000
15009AA	PEAS(GARDEN)-GREEN IMMATURE	7F2016		0.200000
15011AA	LENTILES-WHOLE	7F2016		0.200000
15011AB	LENTILES-SPLIT	7F2016		0.200000
15013AA	MUNG BEANS (SPROUTS)	7F2016		0.200000
15015AA	OKRA	7F2016		0.200000
15022AA	BEANS-DRY-BROADBEANS(MATURE SEED)	7F2016		0.200000
15022AB	BEANS-SUCCULENT-BROADBEANS(IMMATURE SEED	7F2016		0.200000
15023AA	BEANS-DRY-PIGEON BEANS	7F2016		0.200000
15027AA	BEANS-UNSPECIFIED	7F2016		0.200000
15029AA	SOYBEANS-SPROUTED SEEDS	5F1536		6.000000
15029AB	SOYBEANS-SPROUTED SEEDS	6F3380		
15030AA	BEANS-DRY-HYACINTH(MATURE SEEDS)	7F2016	14.00000	0.200000
15030AB	BEANS-SUCCULENT-HYACINTH(YOUNG PODS)	7F2016		0.200000
15031AA	BEANS-DRY-BLACKEYE PEAS(COMPEAS)	7F2016		0.200000
15032AA	BEANS-DRY-CARBANZO(CHICK PEA)	7F2016		0.200000
16002AA	ASPARAGUS	8E3648		0.500000
16004AA	ONIONS-GREEN	8E3676		0.200000
24001AA	BARLEY	8E2122		0.100000
24002EA	CORN (GRAIN-ENDOSPERM)	8E2122		0.100000
24002HA	CORN (GRAIN-BRAN)	8E2122		0.100000
24002SA	CORN SUGAR	8E2122		0.100000
24003AA	OATS	8E2122		0.100000
24004AA	RICE-ROUGH	8E2122		0.100000

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Table 1 (cont.)

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CHEMICAL INFORMATION FOR CASWELL NUMBER 661A

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			ADI	SF		
Glyphosate (+ salts)	3gen reprod- rat	Renal tubular dilation in pups.		-->100	Rat oncogenicity (no MTD in chronic feeding study)	HED complete 2/28/86.
Caswell #661A	NOEL= 10.0000 mg/kg	Equivocal evidence of on-	OPF RfD= 0.100000		Mouse oncogenicity (need to resolve kidney tumor issue)	EPA verified 3/11/86.
CAS No. 1071-83-6	0.00 ppm	co-genicity in the mouse (kidney adenoma); rat	EPA RfD= 0.100000			WHO last reviewed 1986.
A.I. CODE: 417300	LEL= 30.0000 mg/kg					
CFR No. 180.364	0.00 ppm					
	ONCO: D (SAP); C (TOX)	study no MTD.				

FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM)	
			NEW	PUBLISHED
24004AB	RICE-MILLED	8E2122		0.100000
24005AA	RYE-ROUGH	8E2122		0.100000
24005GA	RYE-GERM	8E2122		0.100000
24005WA	RYE-FLOUR	8E2122		0.100000
24006AA	SORGHUM (INCLUDING MILO)	8E2122		0.100000
24007AA	WHEAT-ROUGH	8E2122		0.100000
24007GA	WHEAT-GERM	8E2122		0.100000
24007HA	WHEAT-BRAN	8E2122		0.100000
24007WA	WHEAT-FLOUR	8E2122		0.100000
24012AA	MILLET	8E2122		0.100000
25003SA	CANE SUGAR			0.200000
25003SB	SUGAR-MOLASSES	9H5196		30.000000
26001AA	BUCKWHEAT	8E2122		0.100000
270020A	CORN/GRAIN-OIL	8E2122		0.100000
270030A	COTTONSEED-OIL	8E2122		15.000000
27003WA	COTTONSEED-MEAL	8E2122		15.000000
270070A	PEANUTS-OIL	OF2329		0.100000
270100A	SOYBEANS-OIL	5F1536	14.00000	6.000000
270100A	SOYBEANS-OIL	6F3380		0.100000
270150A	COCONUT-OIL	2F2680		0.200000
270160A	OLIVE OIL	3E2929		0.100000
270190A	PALM OIL	6H5115		6.000000
28023AA	SOYBEANS-UNSPECIFIED	5F1536	14.00000	
28023AB	SOYBEANS-MATURE/SEEDS DRY	6F3380		6.000000
28023AB	SOYBEANS-MATURE/SEEDS DRY	5F1536		6.000000
28023AB	SOYBEANS-MATURE, SEEDS DRY	6F3380	14.00000	
28023WA	SOYBEANS-FLOUR/FULL FAT	5F1536		6.000000
28023WA	SOYBEANS-FLOUR, FULL FAT	6F3380	14.00000	
28023WB	SOYBEANS-FLOUR/LOW FAT	5F1536		6.000000
28023WB	SOYBEANS-FLOUR, LOW FAT	6F3380	14.00000	
28023WC	SOYBEANS-FLOUR/DEFATTED	5F1536		6.000000
28023WC	SOYBEANS-FLOUR, DEFATTED	6F3380	14.00000	
53001KA	BEEF (ORGAN MEATS)-KIDNEY	OF2329		0.500000
53001LA	BEEF (ORGAN MEATS)-LIVER	OF2329		0.500000
53002KA	GOAT (ORGAN MEATS)-KIDNEY	OF2329		0.500000
53002LA	GOAT (ORGAN MEATS)-LIVER	OF2329		0.500000
53003AA	HORSE	OF2329		0.500000
53005KA	SHEEP (ORGAN MEATS)-KIDNEY	OF2329		0.500000
53005LA	SHEEP (ORGAN MEATS)-LIVER	OF2329		0.500000
53006KA	PORK (ORGAN MEATS)-KIDNEY	OF2329		0.500000

Table 1 (con't)

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CHEMICAL INFORMATION FOR CASWELL NUMBER 661A

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES			DATA GAPS/COMMENTS			STATUS
			ADI	SF	OPP RfD	Rat oncogenicity (no MTD in chronic feeding study)	Mouse oncogenicity (need to resolve kidney tumor issue)	WHO last reviewed 1986.	
Glyphosate (+ salts)	3gen reprod- rat	Renal tubular dilation in pups.		-->100					
Caswell #661A	NOEL= 10.0000 mg/kg				0.100000				HED complete 2/28/86.
CAS No. 1071-83-6	0.00 ppm	Equivocal evidence of on-cogenicity in the mouse (kidney adenoma); rat	OPP RfD= 0.100000						EPA verified 3/11/86.
A.I. CODE: 417300	LEL= 30.0000 mg/kg		EPA RfD= 0.100000						WHO last reviewed 1986.
CFR No. 180.364	0.00 ppm								
	ONCO: D (SAP); C (TOX)	study no MTD							On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	TOLERANCE (PPM)	
			NEW	PUBLISHED
530061A	PORK(ORGAN MEATS)-LIVER	0F2329		0.500000
53010AA	FISH-UNSPECIFIED	9F2163		0.250000
53013AA	FISH-SHELLFISH	3F2956		3.000000
53016AA	FISH-FRESHWATER FINFISH	9F2163		0.250000
53017AA	FISH-SALTWATER FINFISH	9F2163		0.250000
53017DA	FISH-FINFISH-SALTWATER-DRIED	9F2163		0.250000
55008LA	TURKEY-GIBLETS (LIVER)	0F2329		0.500000
55013LA	POULTRY/OTHER-GIBLETS(LIVER)	0F2329		0.500000
55015LA	CHICKEN-GIBLETS(LIVER)	0F2329		0.500000

Table 2
TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

DATE: 02/02/89

PAGE: 1

CHEMICAL INFORMATION	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Glyphosate (+ salts)	3gen reprod- rat	Renal tubular dilation in pups.	ADI SF -->100	Rat oncogenicity (no MTD in chronic feeding study)	HED complete 2/28/86.
Caswell #661A	NOEL= 10.0000 mg/kg	Equivocal evidence of on-cogenicity in the mouse (kidney adenoma); rat	OPP RfD= 0.100000	Mouse oncogenicity (need to resolve kidney tumor issue).	EPA verified 3/11/86.
CAS No. 1071-83-6	0.00 ppm	study no MTD.	EPA RfD= 0.100000	Not regulated as oncogen.	WHO last reviewed 1986.
A.I. CODE: 417300	LEL= 30.0000 mg/kg				
CFR No. 180.364	0.00 ppm				
	ONCO: D (SAP); C (TOX)				
POPULATION SUBGROUP					
TOTAL TMRC (MG/KG BODY WEIGHT/DAY)		NEW TMRC AS PERCENT OF RFD		EFFECT OF ANTICIPATED RESIDUES	
CURRENT TMRC*		NEW TMRC**		DIFFERENCE AS PERCENT OF RFD	
U.S. POPULATION - 48 STATES		0.009853		4.758740	
U.S. POPULATION - SPRING SEASON		0.005005		4.590995	
U.S. POPULATION - SUMMER SEASON		0.005151		4.747361	
U.S. POPULATION - FALL SEASON		0.005145		4.910754	
U.S. POPULATION - WINTER SEASON		0.005062		4.786346	
NORTHEAST REGION		0.005076		4.305688	
NORTH CENTRAL REGION		0.005016		4.786282	
SOUTHERN REGION		0.004942		4.797480	
WESTERN REGION		0.005476		5.263516	
HISPANICS		0.005115		4.973872	
NON-HISPANIC WHITES		0.005142		4.797527	
NON-HISPANIC BLACKS		0.004665		4.429108	
NON-HISPANIC OTHERS		0.005788		4.560928	
NURSING INFANTS (< 1 YEAR OLD)		0.005827		5.447637	
NON-NURSING INFANTS (< 1 YEAR OLD)		0.016216		22.831582	
FEMALES (13+ YEARS, PREGNANT)		0.003595		3.173066	
FEMALES 13+ YEARS, NURSING		0.004590		4.170235	
CHILDREN (1-6 YEARS OLD)		0.010180		8.906473	
CHILDREN (7-12 YEARS OLD)		0.007114		6.848549	
MALES (13-19 YEARS OLD)		0.004911		4.939201	
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)		0.004209		4.119846	
MALES (20 YEARS AND OLDER)		0.003999		3.778586	
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)		0.003886		3.367844	

*Current TMRC does not include new or pending tolerances.

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