

US EPA ARCHIVE DOCUMENT

4.120/153



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

AUG 10 1988

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#8E3625. Permethrin on Cucurbits: TAS Dietary Exposure Analysis.

FROM: Susan L. Stanton *Susan L. Stanton 08/10/88*  
Tolerance Assessment Program  
HED/RCB (TS-769C)

THRU: Karl Arne, Ph.D. *c. Fried for 8/10/88*  
Branch Senior Scientist  
HED/RCB (TS-769C)

TO: Hoyt Jamerson, PM-43  
Emergency Response and Minor Use Section  
Registration Division (TS-767C)

Action Requested

Provide a TAS dietary exposure analysis of the proposed crop group tolerance of 3 ppm for residues of the insecticide permethrin in or on cucurbit vegetables.

RCB has reviewed the petition and, TOX considerations permitting, recommends establishment of the proposed crop group tolerance (memo Cook to Jamerson, 08/08/88). It should be noted that tolerances have previously been established for residues of permethrin in or on cantaloupes (3 ppm) and pumpkins (2 ppm).

Discussion

1. A routine chronic analysis was conducted using a Reference Dose (ADI) of 0.05 mg/kg body weight/day based on a NOEL of 5 mg/kg/day from a 2-year rat feeding study with a safety factor of 100. This value has been approved by the Tox Branch ADI Committee (09/12/86) and verified by the Agency reference dose committee (10/28/86).

2. The food uses evaluated include those established in 40 CFR 180.378, the proposed use on cucurbit vegetables, and other pending tolerances on dry bulb onions (PP#8E3583), asparagus (PP#8F3595), sunflower seeds (PP#4F2981), and alfalfa

(PP#0F2389). Table 1 provides a complete listing of residue information.

3. The TAS routine chronic analysis calculates the Theoretical Maximum Residue Contribution (TMRC) for the U.S. population and each of 22 population subgroups (see Table 2) and compares this exposure estimate to the reference dose (ADI in this case).

The TMRC from all food uses (including the new action on cucurbit vegetables and other proposed uses) for the U.S. population is calculated to be 0.018674 mg/kg body weight/day, which occupies approximately 37% of the ADI. The two most highly exposed population subgroups are infants (TMRC = 0.035039 mg/kg/day or 70% of the ADI) and children, ages 1 to 6 (TMRC = 0.031500 or 63% of the ADI).

Table 3 provides a more detailed summary of the analysis for these 3 populations and includes estimates of exposure by tolerance type: existing tolerances, proposed tolerances from the current petition, and other pending tolerances. Exposure from established cantaloupe and pumpkin tolerances is included with "existing tolerances".

4. This analysis uses tolerance level residues with an assumption of 100% crop treated, a conservative approach that likely overestimates exposure significantly. However, since estimated exposure relative to the reference dose (ADI) is acceptable using this conservative approach, no further action is required at this time.

CC: Stanton (RCB), Cook (RCB), TAS File, PP#8E3625, Permethrin SF, TOX, Circulation (7), RF, PMSD

Table 1 (cont.)

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			ADI	SF		
Permethrin	2yr feeding- rat	Decreased liver weights.	ADI	SF -->100	No data gaps.	TOX complete 9/12/86.
Caswell #652BB	NOEL= 5.0000 mg/kg	Slight increase in liver weights	OPP RfD= 0.050000		Slight increase in liver weights at 5 mg/kg only	EPA verified 10/28/86.
CAS No. 52645-53-1	LEL= 100.00 ppm	Evidence of oncogenicity in mice (liver, lung), negative rat.	EPA RfD= 0.050000		not considered toxicologically significant.	WHO last reviewed 1987; (ADI extended to 25:75 mixture).
A.I. CODE: 109701	ONCO: Pending NOTE		Q*= 0.022000			On IRIS.
CFR No. 180.378						

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)		PUBLISHED
				PENDING		
110057A	TOMATOES-PASTE	4F2985				2.0000
11005UA	TOMATOES-CATSUP	4F2985				2.0000
13002AA	CELERY	8F2099				5.0000
13003AA	CHICORY (FRENCH OR BELGIAN ENDIVE)	4F3018				20.0000
13005AA	BROCCOLI	9F2207				1.0000
13006AA	BRUSSEL SPROUTS	9F2207				1.0000
13007AA	CABBAGE-GREEN AND RED	9F2192				6.0000
13008AA	CAULIFLOWER	9F2207				1.0000
13009AA	COLLARDS	6E3360				20.0000
13010AA	CABBAGE-CHINESE/CELERY (INC. BOK CHOY)	9F2192				6.0000
13013AA	LETTUCE-LEAFY VARIETIES	4F3018				20.0000
13014AA	DANDELION	4F3018				20.0000
13015AA	ENDIVE (CURLY AND ESCAROLE)	4F3018				20.0000
13016AA	FENNEL	8F2099				5.0000
13017AA	CRESS (GARDEN/FIELD)	4F3018				20.0000
13018AA	ARTICHOKES-GLOBE	4F3114				10.0000
13020AA	LETTUCE-UNSPECIFIED	4F3018				20.0000
13022AA	PARSLEY	4F3018				20.0000
13023AA	RHUBARB	4F3018				20.0000
13024AA	SPINACH	2E2701				20.0000
13025AA	SWISS CHARD	4F3018				20.0000
13026AA	TURNIPS-TOPS	6E3360				20.0000
13027AA	WATERCRESS	4E3113				5.0000
13039AA	CRESS/UPLAND	4F3018				20.0000
13045AA	LETTUCE-HEAD VARIETIES	9F2192				20.0000
14007AA	GARLIC	8E3583			0.1000	
14011AA	ONIONS-DRY-BULB (CIPOLLINI)	8E3583			0.1000	
14011DA	ONIONS-DEHYDRATED OR DRIED	8E3583			0.1000	
14013AA	POTATOES(WHITE)-WHOLE	0F2307				0.0500
14013AB	POTATOES(WHITE)-UNSPECIFIED	0F2307				0.0500
14013AC	POTATOES(WHITE)-PEELED	0F2307				0.0500
14013DA	POTATOES(WHITE)-DRY	0F2307				0.0500
14013HA	POTATOES(WHITE)-PEEL ONLY	0F2307				0.0500
14017AA	SHALLOTS	8E3583			0.1000	
14019AA	TURNIPS-ROOTS	6E3360				1.0000
15004AA	CORN/POP	1F2476				0.0500
15005AA	CORN/SWEET	3F2781				0.1000
15018AA	SUNFLOWER-SEEDS	4F2981			0.0500	
15029AA	SOYBEANS-SPROUTED SEEDS	9F2196				0.0500
16002AA	ASPARAGUS	3E2914				1.0000

Table 1

CHEMICAL INFORMATION FOR CASWELL NUMBER 652BB DATE: 08/10/88 PAGE: 1.000000

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			ADI	SF -->100		
Permethrin	2yr feeding- rat	Decreased liver weights.			No data gaps.	TOX complete 9/12/86.
Caswell #652BB	NOEL= 5.00000mg/kg	Slight increase in liver weights noted at 5 mg/kg.	OPP RfD= 0.050000		Slight increase in liver weights at 5 mg/kg only noted in 1/3 rat studies, (ADI extended to 25:75 mixture).	EPA verified 10/28/86.
CAS No. 52645-53-1	LEI= 100.00000ppm	Evidence of oncogenicity in mice (liver, lung), negative rat.	EPA RfD= 0.050000		not considered toxicologically significant.	WHO last reviewed 1987;
A.I. CODE: 109701	ONCO: Pending NOTE		Q*= 0.022000			(ADI extended to 25:75 mixture).
CFR No. 180.378						On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)		PUBLISHED
				PENDING		
03001AA	ALMONDS	2F2675				0.050000
03005AA	FILBERTS/HAZELNUTS	4F3130				0.050000
03009AA	WALNUTS	4F3130				0.050000
03011AA	PISTACHIO NUTS	4F2995				0.100000
04001AA	APPLES-FRESH	1F2562				0.050000
04001DA	APPLES-DRIED	1F2562				0.050000
04001JA	APPLES-JUICE	1F2562				0.050000
04003AA	PEARS-FRESH	0F2425				3.000000
04003DA	PEARS-DRIED	0F2425				3.000000
05002AA	CHERRIES-FRESH	5F3271				3.000000
05002DA	CHERRIES-DRIED	5F3271				3.000000
05002JA	CHERRIES-JUICE	5F3271				3.000000
05004AA	PEACHES-FRESH	3F2802				5.000000
05004DA	PEACHES-DRIED	3F2802				5.000000
06001AA	AVOCADOS	4E3146				1.000000
06010AA	PAPAYAS-UNSPECIFIED	4E3146				1.000000
06010AB	PAPAYAS-PULP	4E3186				1.000000
06010DA	PAPAYAS-DRIED	4E3186				1.000000
06010JA	PAPAYAS-JUICE	4E3186				1.000000
06018AA	KIWI	1E2514				2.000000
08022AA	HORSERADISH	0E2377				1.000000
10002AA	CANTALOUPE-UNSPECIFIED	5E3225				3.000000
10002AB	CANTALOUPE-PULP	5E3225				3.000000
10003AA	CASABAS	8E3625				3.000000
10004AA	CRENSHAW	8E3625				3.000000
10005AA	HONEYDEW MELONS	8E3625				3.000000
10007AA	PERSION MELONS	8E3625				3.000000
10008AA	WATERMELON	8E3625				3.000000
10010AA	CUCUMBERS	8E3625				3.000000
10011AA	PUMPKIN	3E2861				2.000000
10011AA	PUMPKIN	8E3625				1.000000
10013AA	SQUASH-SUMMER	8E3625				3.000000
10014AA	SQUASH-WINTER	8E3625				3.000000
10017AA	BITTER MELON	8E3625				3.000000
10020AA	TOMELGOURD	8E3625				3.000000
11001AA	EGGPLANT	3E2892				1.000000
11003AA	PEPPERS (SWEET/GARDEN)	3E2892				1.000000
11005AA	TOMATOES-WHOLE	4F2985				2.000000
11005JA	TOMATOES-JUICE	4F2985				2.000000
11005RA	TOMATOES-PUREE	4F2985				2.000000

Table 1 (cont)

CHEMICAL INFORMATION FOR CASWELL NUMBER 652BB DATE: 08/10/88 PAGE: 3.000000

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Permethrin	2yr feeding- rat	Decreased liver weights.	ADI SF -->100	No data gaps.	TOX complete 9/12/86.
Caswell #652BB	NOEL= 5.0000 mg/kg	Slight increase in liver weights noted at 5 mg/kg.	OPP RfD= 0.050000	Slight increase in liver weights at 5 mg/kg only	EPA verified 10/28/86.
CAS No. 52645-53-1	100.00 ppm	Evidence of oncogenicity in mice (liver, lung), negative rat.	EPA RfD= 0.050000	not considered toxicologically significant.	WHO last reviewed 1987;
A.I. CODE: 109701	LEL= 25.0000 mg/kg				(ADI extended to 25:75 mixture).
CFR No. 180.378	500.00 ppm		Q*= 0.022000		On IRIS.
	ONCO: Pending NOTE				

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM) PENDING	PUBLISHED
16002AA	ASPARAGUS	8F3595		1.0000	6.0000
16003AA	MUSHROOMS	2F2752			0.0500
24002EA	CORN/GRAIN-ENDOSPERM	1F2476			0.0500
24002HA	CORN/GRAIN-BRAN	1F2476			0.0500
24002SA	CORN SUGAR	1F2476			0.0500
270020A	CORN/GRAIN-OIL	1F2476			0.5000
270030A	COTTONSEED-OIL				0.5000
27003WA	COTTONSEED-MEAL				0.5000
270100A	SOYBEANS-OIL	9F2196			0.0500
270110A	SUNFLOWER-OIL	4F2981		0.0500	
28023AA	SOYBEANS-UNSPECIFIED	9F2196			0.0500
28023AB	SOYBEANS-MATURE/SEEDS DRY	9F2196			0.0500
28023WA	SOYBEANS-FLOUR/FULL FAT	9F2196			0.0500
28023WB	SOYBEANS-FLOUR/LOW FAT	9F2196			0.0500
28023WC	SOYBEANS-FLOUR/DEFATTED	9F2196			0.0500
50000FA	MILK-FAT SOLIDS	3F2781		2.5000	3.7500 H
50000FA	MILK-FAT SOLIDS	OF2389			H
53001BA	BEEF-MEAT BYPRODUCTS	1F2564		1.0000	1.0000
53001BA	BEEF-MEAT BYPRODUCTS	OF2389		1.0000	1.0000
53001BB	BEEF(ORGAN MEATS)-OTHER	1F2564		1.0000	1.0000
53001BB	BEEF(ORGAN MEATS)-OTHER	OF2389		1.0000	0.1500
53001DA	BEEF-DRIED	1F2564		0.1000	0.1500
53001DA	BEEF-DRIED	OF2389		0.1000	2.0000
53001FA	BEEF(BONELESS)-FAT (BEEF TALLOW)	1F2564		1.0000	1.0000
53001FA	BEEF(BONELESS)-FAT (BEEF TALLOW)	OF2389		1.0000	1.0000
53001KA	BEEF(ORGAN MEATS)-KIDNEY	1F2564		1.0000	1.0000
53001KA	BEEF(ORGAN MEATS)-KIDNEY	OF2389		1.0000	1.0000
53001LA	BEEF(ORGAN MEATS)-LIVER	1F2564		1.0000	0.1500
53001LA	BEEF(ORGAN MEATS)-LIVER	OF2389		1.0000	1.0000
53001MA	BEEF(BONELESS)-LEAN (W/O REMOVEABLE FAT)	1F2564		0.1000	1.0000
53001MA	BEEF(BONELESS)-LEAN (W/O REMOVEABLE FAT)	OF2389		0.1000	1.0000
53002BA	GOAT-MEAT BYPRODUCTS	1F2564		1.0000	1.0000
53002BA	GOAT-MEAT BYPRODUCTS	OF2389		1.0000	1.0000
53002BB	GOAT(ORGAN MEATS)-OTHER	1F2564		1.0000	1.0000
53002BB	GOAT(ORGAN MEATS)-OTHER	OF2389		1.0000	2.0000
53002FA	GOAT(BONELESS)-FAT	1F2564		1.0000	1.0000
53002FA	GOAT(BONELESS)-FAT	OF2389		1.0000	1.0000
53002KA	GOAT(ORGAN MEATS)-KIDNEY	1F2564		1.0000	1.0000
53002KA	GOAT(ORGAN MEATS)-KIDNEY	OF2389		1.0000	1.0000
53002LA	GOAT(ORGAN MEATS)-LIVER	1F2564		1.0000	1.0000

Table 1 (cont.)

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			ADI	SF		
Permethrin	2yr feeding- rat	Decreased liver weights.	ADJ	-->100	No data gaps.	TOX complete 9/12/86.
Caswell #652BB	NOEL= 5.0000 mg/kg	Slight increase in liver	OPP	RFD= 0.050000	Slight increase in liver	EPA verified 10/28/86.
CAS No. 52645-53-1	100.00 ppm	Weights noted at 5 mg/kg.	EPA	RFD= 0.050000	weights at 5 mg/kg only	WHO last reviewed 1987;
A.I. CODE: 109701	LEL= 25.0000 mg/kg	Evidence of oncogenicity			noted in 1/3 rat studies,	(ADI extended to 25:75
CFR No. 180.378	500.00 ppm	in mice (liver, lung),			not considered toxicolo-	mixture).
	ONCO: Pending NOTE	negative rat.	Q*	0.022000	gically significant.	On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)	
				PENDING	PUBLISHED
53002LA	GOAT(ORGAN MEATS)-LIVER	OF2389		1.0000	
53002MA	GOAT(BONELESS)-LEAN (W/O REMOVABLE FAT)	1F2564			0.1500
53002NA	GOAT(BONELESS)-LEAN (W/O REMOVABLE FAT)	OF2389		0.1000	
53003AA	HORSE	1F2564			2.0000
53003BA	HORSE	OF2389		1.0000	
53005BA	SHEEP-MEAT BYPRODUCTS	1F2564			1.0000
53005BB	SHEEP-MEAT BYPRODUCTS	OF2389		1.0000	
53005BB	SHEEP(ORGAN MEATS)-OTHER	1F2564			1.0000
53005BB	SHEEP(ORGAN MEATS)-OTHER	OF2389		1.0000	
53005FA	SHEEP(BONELESS)-FAT	1F2564			2.0000
53005FA	SHEEP(BONELESS)-FAT	OF2389		1.0000	
53005KA	SHEEP(ORGAN MEATS)-KIDNEY	1F2564			1.0000
53005KA	SHEEP(ORGAN MEATS)-KIDNEY	OF2389		1.0000	
53005LA	SHEEP(ORGAN MEATS)-LIVER	1F2564			1.0000
53005LA	SHEEP(ORGAN MEATS)-LIVER	OF2389		1.0000	
53005NA	SHEEP(BONELESS)-LEAN (W/O REMOVABLE FAT)	1F2564			0.1500
53005NA	SHEEP(BONELESS)-LEAN (W/O REMOVABLE FAT)	OF2389		0.1000	
53006BA	PORK-MEAT BYPRODUCTS	1F2546			3.0000
53006BB	PORK(ORGAN MEATS)-OTHER	1F2546			3.0000
53006FA	PORK(BONELESS)-FAT (INCLUDING LARD)	1F2546			2.0000
53006FA	PORK(BONELESS)-FAT (INCLUDING LARD)	OF2389		1.0000	
53006KA	PORK(ORGAN MEATS)-KIDNEY	1F2546			3.0000
53006LA	PORK(ORGAN MEATS)-LIVER	1F2546			3.0000
53006NA	PORK(BONELESS)-LEAN (W/O REMOVABLE FAT)	1F2546			0.1500
53006NA	PORK(BONELESS)-LEAN (W/O REMOVABLE FAT)	OF2389		0.1000	
55008BA	TURKEY-BYPRODUCTS	1F2564			0.0500
55008BA	TURKEY-BYPRODUCTS	OF2389		0.2000	
55008LA	TURKEY-GIBLETS (LIVER)	1F2564			0.0500
55008LA	TURKEY-GIBLETS (LIVER)	OF2389		0.2000	
55008NA	TURKEY-FLESH(W/O SKIN & W/O BONES)	1F2564			0.0500
55008NB	TURKEY-FLESH(+SKIN & W/O BONES)	1F2564			0.0500
55008NB	TURKEY-FLESH(+SKIN, W/O BONES)	OF2389		0.1000	
55008MC	TURKEY-UNSPECIFIED	1F2564			0.0500
55008MC	TURKEY-UNSPECIFIED	OF2389		0.2000	
55013BA	POULTRY/OTHER-BYPRODUCTS	1F2564			0.0500
55013BA	POULTRY/OTHER-BYPRODUCTS	OF2389		0.2000	
55013LA	POULTRY/OTHER-GIBLETS (LIVER)	1F2564			0.0500
55013LA	POULTRY/OTHER-GIBLETS (LIVER)	OF2389		0.2000	
55013MA	POULTRY/OTHER-FLESH (+SKIN & W/O BONES)	1F2564			0.0500
55013MA	POULTRY/OTHER-FLESH (+SKIN, W/O BONES)	OF2389		0.1000	

Table 1 (con't)

CHEMICAL INFORMATION FOR CASWELL NUMBER 652BB DATE: 08/10/88 PAGE: 5.000000

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Permethrin	2yr feeding- rat	Decreased liver weights.	ADI SF -->100	No data gaps.	TOX complete 9/12/86.
Caswell #652BB	NOEL= 5.0000 mg/kg	Slight increase in liver	OPP RfD= 0.050000	Slight increase in liver	EPA verified 10/28/86.
CAS No. 52645-53-1	100.00 ppm	weights noted at 5 mg/kg.	EPA RfD= 0.050000	weights at 5 mg/kg only	WHO last reviewed 1987;
A.I. CODE: 109701	LEL= 25.0000 mg/kg	Evidence of oncogenicity		noted in 1/3 rat studies,	(ADI extended to 25:75
CFR No. 180.378	500.00 ppm	in mice (liver, lung),	Q*= 0.022000	not considered toxicolo-	mixture).
	ONCO: Pending NOTE	negative rat.		gically significant.	On IRIS.

FOOD CODE	FOOD NAME	PETITION NUMBER	NEW	TOLERANCE (PPM)	
				PENDING	PUBLISHED
55014AA	EGGS-WHOLE	1F2564			0.0500
55014AA	EGGS-WHOLE	0F2389		0.9500	
55014AB	EGGS-WHITE ONLY	1F2564			0.0500
55014AB	EGGS-WHITE ONLY	0F2389		0.9500	
55014AC	EGGS-YOLK ONLY	1F2564			0.0500
55014AC	EGGS-YOLK ONLY	0F2389		0.9500	
55015BA	CHICKEN-BYPRODUCTS	1F2564			0.0500
55015BA	CHICKEN-BYPRODUCTS	0F2389		0.2000	
55015LA	CHICKEN-GIBLETS(LIVER)	1F2564			0.0500
55015LA	CHICKEN-GIBLETS(LIVER)	0F2389		0.2000	
55015WA	CHICKEN-FLESH(W/O SKIN & W/O BONES)	1F2564			0.0500
55015MB	CHICKEN-FLESH(+SKIN & W/O BONES)	1F2564			0.0500
55015MB	CHICKEN-FLESH(+SKIN,W/O BONES)	0F2389		0.1000	
90997AA	INEST. RACS--TOLERANCE TOO SPECIFIC	1F2546			
90999AA	FEED RACS--INEST. FROM USDA SURVEY	2F2675			



Table 2

## TOLERANCE ASSESSMENT SYSTEM ROUTINE CHRONIC ANALYSIS

DATE: 08/10/88

PAGE: 1

CHEMICAL INFORMATION	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			ADI	SF -->100		
Permethrin	2yr feeding- rat	Decreased liver weights.			No data gaps.	TOX complete 9/12/86.
Caswell #652BB	NOEL= 5.0000 mg/kg	Slight increase in liver	OPP RfD= 0.050000		Slight increase in liver	EPA verified 10/28/86.
CAS No. 52645-53-1	100.00 ppm	weights noted at 5 mg/kg.	EPA RfD= 0.050000		weights at 5 mg/kg only	WHO last reviewed 1987;
A.I. CODE: 109701	LEL= 25.0000 mg/kg	Evidence of oncogenicity			noted in 1/3 rat studies,	(ADI extended to 25:75
CFR No. 180.378	500.00 ppm	in mice (liver, lung),			not considered toxicolo-	mixture).
	ONCO: Pending NOTE	negative rat.	Q*= 0.022000		gically significant.	On IRIS.

POPULATION SUBGROUP	TOTAL TMRC (MG/KG BODY WEIGHT/DAY)		NEW TMRC AS PERCENT OF RFD	DIFFERENCE AS PERCENT OF RFD	EFFECT OF ANTICIPATED RESIDUES	
	CURRENT TMRC*	NEW TMRC**			ARC	BRFD
U.S. POPULATION - 48 STATES	0.015481	0.018674	37.348686	6.387282		
U.S. POPULATION - SPRING SEASON	0.015762	0.019020	38.040898	6.517126		
U.S. POPULATION - SUMMER SEASON	0.016187	0.019994	39.987122	7.613966		
U.S. POPULATION - FALL SEASON	0.014924	0.017875	35.749680	5.901320		
U.S. POPULATION - WINTER SEASON	0.015047	0.017806	35.612416	5.519092		
NORTHEAST REGION	0.015890	0.019217	38.433862	6.653118		
NORTH CENTRAL REGION	0.015118	0.018183	36.366710	6.131518		
SOUTHERN REGION	0.014272	0.017279	34.558152	6.014890		
WESTERN REGION	0.017554	0.021079	42.158762	7.049824		
HISPANICS	0.016014	0.019651	39.302398	7.273574		
NON-HISPANIC WHITES	0.015361	0.018544	37.088278	6.367260		
NON-HISPANIC BLACKS	0.015710	0.018694	37.387462	5.968396		
NON-HISPANIC OTHERS	0.018004	0.021767	43.533362	7.525588		
NURSING INFANTS (< 1 YEAR OLD)	0.013301	0.015069	30.138566	3.537482		
NON-NURSING INFANTS (< 1 YEAR OLD)	0.029006	0.035039	70.077042	12.065646		
FEMALES (13+ YEARS, PREGNANT)	0.012289	0.014612	29.223940	4.846698		
FEMALES (1-6 YEARS, NURSING CHILDREN (1-6 YEARS OLD)	0.016249	0.019179	38.357648	5.860422		
CHILDREN (7-12 YEARS OLD)	0.024595	0.031500	62.999016	13.808634		
MALES (13-19 YEARS OLD)	0.020843	0.025434	50.868764	9.183542		
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)	0.014281	0.017502	35.004550	6.441648		
MALES (20 YEARS AND OLDER)	0.013144	0.015786	31.571374	5.283472		
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)	0.012832	0.015403	30.805700	5.141976		
	0.013833	0.016172	32.344754	4.677920		

\*Current TMRC does not include new or pending tolerances.

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

Table 3

TOLERANCE ASSESSMENT SUMMARY FOR Permethrin  
CASWELL #652BB

DATE: 08/10/88

ANALYSIS FOR POPULATION SUB-GROUP: U.S. POPULATION - 48 STATES

EXISTING TOLERANCES (PUBLISHED ONLY)		
RESULT IN A TMRC OF:	0.015481	MG/KG/DAY
THE EXISTING TMRC IS EQUIVALENT TO:	30.961404	% OF THE ADI.
PROPOSED NEW TOLERANCES (CURRENT PETITION ONLY)		
RESULT IN A TMRC OF:	0.000700	MG/KG/DAY
THESE NEW TOLERANCES WILL OCCUPY:	1.399854	% OF THE ADI.
IF THE NEW TOLERANCES (CURRENT PETITION ONLY)		
ARE APPROVED THE RESULTANT TMRC WILL BE:	0.016181	MG/KG/DAY
THE NEW TMRC WILL OCCUPY	32.361258	% OF THE ADI.
OTHER PENDING TOLERANCES EXCLUDING THE		
CURRENT NEW PETITION HAVE A TMRC OF:	0.002494	MG/KG/DAY
THIS TMRC WILL OCCUPY	4.987428	% OF THE ADI.
IF ALL PENDING TOLERANCES (INCLUDING THE		
CURRENT NEW PETITION) ARE GRANTED		
THE RESULTANT TMRC WILL BE:	0.018674	MG/KG/DAY
THE TOTAL TMRC WILL OCCUPY	37.348686	% OF THE ADI.

ANALYSIS FOR POPULATION SUB-GROUP: NON-NURSING INFANTS (< 1 YEAR OLD)

EXISTING TOLERANCES (PUBLISHED ONLY)		
RESULT IN A TMRC OF:	0.029006	MG/KG/DAY
THE EXISTING TMRC IS EQUIVALENT TO:	58.011396	% OF THE ADI.
PROPOSED NEW TOLERANCES (CURRENT PETITION ONLY)		
RESULT IN A TMRC OF:	0.001260	MG/KG/DAY
THESE NEW TOLERANCES WILL OCCUPY:	2.519942	% OF THE ADI.
IF THE NEW TOLERANCES (CURRENT PETITION ONLY)		
ARE APPROVED THE RESULTANT TMRC WILL BE:	0.030266	MG/KG/DAY
THE NEW TMRC WILL OCCUPY	60.531338	% OF THE ADI.
OTHER PENDING TOLERANCES EXCLUDING THE		
CURRENT NEW PETITION HAVE A TMRC OF:	0.004773	MG/KG/DAY
THIS TMRC WILL OCCUPY	9.545704	% OF THE ADI.
IF ALL PENDING TOLERANCES (INCLUDING THE		
CURRENT NEW PETITION) ARE GRANTED		
THE RESULTANT TMRC WILL BE:	0.035039	MG/KG/DAY
THE TOTAL TMRC WILL OCCUPY	70.077042	% OF THE ADI.

ANALYSIS FOR POPULATION SUB-GROUP: CHILDREN (1-6 YEARS OLD)

EXISTING TOLERANCES (PUBLISHED ONLY)		
RESULT IN A TMRC OF:	0.024595	MG/KG/DAY
THE EXISTING TMRC IS EQUIVALENT TO:	49.190382	% OF THE ADI.
PROPOSED NEW TOLERANCES (CURRENT PETITION ONLY)		
RESULT IN A TMRC OF:	0.001051	MG/KG/DAY
THESE NEW TOLERANCES WILL OCCUPY:	2.102216	% OF THE ADI.
IF THE NEW TOLERANCES (CURRENT PETITION ONLY)		
ARE APPROVED THE RESULTANT TMRC WILL BE:	0.025646	MG/KG/DAY
THE NEW TMRC WILL OCCUPY	51.292598	% OF THE ADI.
OTHER PENDING TOLERANCES EXCLUDING THE		
CURRENT NEW PETITION HAVE A TMRC OF:	0.005853	MG/KG/DAY
THIS TMRC WILL OCCUPY	11.706418	% OF THE ADI.
IF ALL PENDING TOLERANCES (INCLUDING THE		
CURRENT NEW PETITION) ARE GRANTED		
THE RESULTANT TMRC WILL BE:	0.031500	MG/KG/DAY
THE TOTAL TMRC WILL OCCUPY	62.999016	% OF THE ADI.