



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

JUL 25 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Dietary Exposure Analysis for the Coumaphos
Reregistration Using Anticipated Residue Data

FROM: J. Robert Tomerlin, Ph.D. *J.R. Tomerlin 7/21/89*
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THROUGH: Reto Engler, Ph.D. *Reto Engler*
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TO: Lois Rossi, Chief
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Special Review Reregistration Division (H7508C)

Action Requested

A preliminary TAS analysis for published uses of coumaphos assuming that 100 per cent of registered commodities contained tolerance level residues resulted in exposure estimates that exceeded the reference dose. Consequently, anticipated residue data were requested and were used in the re-analysis reported here.

Discussion

1. Toxicology Endpoint: The routine chronic TAS analysis used a reference dose (PADI) of 0.0007 mg/kg body weight/day, based upon a NOEL of 0.07 mg/kg body weight/day and an uncertainty factor of 100 from a 2 year rat feeding study. This value has been approved by HED (3/30/89) and Agency (4/20/89) reference dose committees.

An endpoint for the acute inhibition of cholinesterase (ChE) was observed in female rats. Clinical signs were observed within four hours at the lowest dose tested. The LEL from this study was 5 mg/kg body weight (personal communication, W. Greear).

2. Residue Information: Food uses evaluated were published tolerances from 40 CFR 180.189. Anticipated residue (AR) data were developed for meat, poultry, eggs, and milk (M. S. Metzger memo, 7/18/89). We do not have estimates of per cent of the animals that are treated with the pesticide. Average residues were used for the chronic exposure analysis; 95th percentile or maximum residues were used for the acute exposure analysis. Summaries of the residue data used in the analysis are attached as Table 1a and 1b.

3. Chronic Exposure Analysis: The TAS chronic exposure analysis uses tolerance level residues and 100 per cent crop treated to estimate the Theoretical Maximum Residue Contribution (TMRC) for the overall U.S. population and 22 population subgroups. The Anticipated Residue Contribution (ARC) is calculated using anticipated residues rather than tolerances in the exposure calculation. The TMRC and ARC information for the overall U.S. population and all 22 TAS population groups is shown in Table 2. The exposure information for the overall U.S. population and the two most highly exposed groups, non-nursing infants and children aged 1 to 6 is shown in the following table.

TMRC and ARC Exposure Summaries for Coumaphos

	<u>Overall U.S. Population</u>	<u>Non-Nurs. Infants</u>	<u>Children Aged 1 - 6</u>
TMRC - Using Tolerances and 100% Crop Treated	0.003011 ^a 430.2 ^b	0.003972 567.5	0.005846 835.1
ARC - Using Anticipated Residues	0.000169 24.1	0.000183 26.2	0.0.000322 46.0

^aExposure estimate in mg/kg body weight/day.

^bEstimated exposure expressed as per cent of the PADI.

4. Acute Exposure Analysis: The TAS acute dietary exposure analysis with anticipated residues estimates the distribution of single-day exposures for certain population subgroups. Each distribution represents the exposure profile for the individuals who consumed commodities containing coumaphos residues at the levels shown in Table 1b.

The acute dietary exposure to coumaphos is compared to the NOEL for ChE inhibition of 5 mg/kg body weight from the rat study. The margin of safety (MOS) for acute exposure is calculated as the ratio of the NOEL to the estimated exposure. For example, the estimated MOS for the average U.S. consumer is calculated as:

$$\begin{aligned}
 \text{MOS} &= \text{NOEL} / \text{EXPOSURE (ARC)} \\
 &= (5 \text{ mg/kg}) / (0.000798 \text{ mg/kg body weight}) \\
 &= 6300 \text{ (approximately)}
 \end{aligned}$$

The exposure profiles for the overall U.S. population and the four TAS population groups for which acute exposure analyses are calculated is shown in Table 3. Note that the minimum average MOS,

experienced by infants, is 3200. The absolute minimum MOS of 500 for any individual occurs in the children group.

5. Comments: Average anticipated residues were used to calculate chronic exposure to coumaphos. However, it was still assumed that 100 per cent of the registered commodities would contain residues. Under this assumption, exposure is not expected to exceed the reference dose for any TAS population group. Note that the reference dose for ChE inhibition is 100. Receipt and review of additional toxicology data may result in a modified reference dose which would in turn affect the percentage of the reference dose occupied by the estimated exposure.

Acute exposure was evaluated with either 95th percentile or maximum residue values. The analysis is conducted for consumers of the commodities only, but assumes that all registered commodities contain coumaphos residues and further assumes that all registered commodities are eaten at one sitting. Even under these stringent assumptions, acute exposure to coumaphos is not expected to result in an MOS less than 500 for any TAS population group.

Attachments

cc: TAS (Tomerlin, SACB), DEB, Caswell #335, Kocialski (SACB), Greear (TOX-IRSB)

Table 1

FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TMS RUN (ppm)	EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
									STUDY TYPE	PLASMA CHE INHIBITION IN FEMALES (ACTUAL DOSE TESTED)	PLASMA CHE INHIBITION IN FEMALES (ACTUAL DOSE TESTED)	PLASMA CHE INHIBITION IN FEMALES (ACTUAL DOSE TESTED)	CHRONIC FEEDING - DOG	REPRODUCTION - RAT	
5000CFA	MILK-FAT SOLIDS	10 RAW-FRESH OR NFS	306	P 0.500000	0.0060000		100.00	0.0060000							HED complete 03/30/89.
5000CFA	MILK-FAT SOLIDS	21 COOKED-NFS	306	P 0.500000	0.0060000		100.00	0.0060000							EPA deferred 04/20/89;
5000CFA	MILK-FAT SOLIDS	51 COOKED-CANNED	306	P 0.500000	0.0060000		100.00	0.0060000							Pending RAC approval of
53001BA	BEEF-MEAT BYP	21 COOKED-NFS	299	P 1.000000	0.1500000		100.00	0.1500000							RAF CHE report.
53001BA	BEEF-MEAT BYP	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	299	P 1.000000	0.1500000		100.00	0.1500000							WHO TADI withdrawn 1980;
53001BB	BEEF-OTH ORGAN	21 COOKED-NFS	299	P 1.000000	0.1000000		100.00	0.1000000							WHO last reviewed 1987.
53001BB	BEEF-OTH ORGAN	51 COOKED-CANNED	299	P 1.000000	0.1000000		100.00	0.1000000							
53001DA	BEEF-DRIED	21 COOKED-NFS	299	P 1.000000	0.0300000		100.00	0.0300000							
53001FA	BEEF-FAT	10 RAW-FRESH OR NFS	299	P 1.000000	0.1500000		100.00	0.1500000							
53001FA	BEEF-FAT	21 COOKED-NFS	299	P 1.000000	0.1500000		100.00	0.1500000							
53001FA	BEEF-FAT	22 COOKED-FRESH-BAKED	299	P 1.000000	0.1500000		100.00	0.1500000							
53001FA	BEEF-FAT	23 COOKED-FRESH-BOILED	299	P 1.000000	0.1500000		100.00	0.1500000							
53001FA	BEEF-FAT	24 COOKED-FRESH-BOILED	299	P 1.000000	0.1500000		100.00	0.1500000							
53001FA	BEEF-FAT	25 COOKED-FRESH-FRIED	299	P 1.000000	0.1500000		100.00	0.1500000							
53001KA	BEEF-KIDNEY	21 COOKED-NFS	299	P 1.000000	0.0400000		100.00	0.0400000							
53001LA	BEEF-LIVER	25 COOKED-FRESH-FRIED	299	P 1.000000	0.1000000		100.00	0.1000000							
53001LA	BEEF-LIVER	31 COOKED-FRESH OR CANNED	299	P 1.000000	0.1000000		100.00	0.1000000							
53001MA	BEEF-LEAN	10 RAW-FRESH OR NFS	299	P 1.000000	0.0300000		100.00	0.0300000							
53001MA	BEEF-LEAN	21 COOKED-NFS	299	P 1.000000	0.0300000		100.00	0.0300000							
53001MA	BEEF-LEAN	22 COOKED-FRESH-BAKED	299	P 1.000000	0.0300000		100.00	0.0300000							
53001MA	BEEF-LEAN	23 COOKED-FRESH-BOILED	299	P 1.000000	0.0300000		100.00	0.0300000							
53001MA	BEEF-LEAN	24 COOKED-FRESH-BOILED	299	P 1.000000	0.0300000		100.00	0.0300000							
53002BA	GOAT-MEAT BYP	00 NOT SPECIFIED	299	P 1.000000	0.5000000		100.00	0.5000000							
53002BB	GOAT-OTH ORGAN	00 NOT SPECIFIED	299	P 1.000000	0.0300000		100.00	0.0300000							
53002FA	GOAT-FAT	23 COOKED-FRESH-BOILED	299	P 1.000000	0.5000000		100.00	0.5000000							
53002FA	GOAT-FAT	25 COOKED-FRESH-FRIED	299	P 1.000000	0.5000000		100.00	0.5000000							
53002KA	GOAT-KIDNEY	00 NOT SPECIFIED	299	P 1.000000	0.0200000		100.00	0.0200000							
53002LA	GOAT-LIVER	00 NOT SPECIFIED	299	P 1.000000	0.0300000		100.00	0.0300000							
53002MA	GOAT-LEAN	23 COOKED-FRESH-BOILED	299	P 1.000000	0.0400000		100.00	0.0400000							
53002MA	GOAT-LEAN	25 COOKED-FRESH-FRIED	299	P 1.000000	0.0400000		100.00	0.0400000							
53003AA	HORSE	00 NOT SPECIFIED	299	P 1.000000	0.1500000		100.00	0.1500000							
53005BA	SHEEP-MEAT BYP	21 COOKED-NFS	299	P 1.000000	0.5000000		100.00	0.5000000							
53005BB	SHEEP-OTH ORGAN	21 COOKED-NFS	299	P 1.000000	0.0400000		100.00	0.0400000							
53005FA	SHEEP-FAT	21 COOKED-NFS	299	P 1.000000	0.5000000		100.00	0.5000000							
53005KA	SHEEP-KIDNEY	21 COOKED-NFS	299	P 1.000000	0.0400000		100.00	0.0400000							
53005LA	SHEEP-LIVER	00 NOT SPECIFIED	299	P 1.000000	0.0300000		100.00	0.0300000							
53005MA	SHEEP-LEAN	21 COOKED-NFS	299	P 1.000000	0.0500000		100.00	0.0500000							
53005MA	SHEEP-LEAN	31 COOKED-FRESH OR CANNED	299	P 1.000000	0.0500000		100.00	0.0500000							
53006BA	PORK-MEAT BYP	21 COOKED-NFS	299	P 1.000000	0.0600000		100.00	0.0600000							
53006BR	PORK-OTH ORGAN	21 COOKED-NFS	299	P 1.000000	0.0200000		100.00	0.0200000							

Table 1, continued

FOOD CODE	FOOD	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS	RES. VALUE USED IN TAS RUN (ppm)
53006BR	PORK-OTH ORGAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	Plasma ChE inhibition in females.	PADI UF -->100	Chronic feeding - dog	HED complete 03/30/89.	0.020000
53006FA	PORK-FAT	10 RAW-FRESH OR NFS	(Actual dose tested)	OPP RFD= 0.000700	Reproduction - rat	EPA deferred 04/20/89;	0.060000
53006FA	PORK-FAT	21 COOKED-NFS		EPA RFD= 0.000000	Oncogenicity - mouse	Pending RAC approval of RAF ChE report.	0.060000
53006FA	PORK-FAT	23 COOKED-FRESH-BOILED					0.060000
53006FA	PORK-FAT	25 COOKED-FRESH-FRIED					0.060000
53006FA	PORK-FAT	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	No evidence of oncogenicity in rat.			WHO TADI withdrawn 1980; WHO last reviewed 1987.	0.060000
53006KA	PORK-KIDNEY	21 COOKED-NFS					0.020000
53006LA	PORK-LIVER	21 COOKED-NFS					0.020000
53006LA	PORK-LIVER	25 COOKED-FRESH-FRIED					0.020000
53006MA	PORK-LEAN	21 COOKED-NFS					0.030000
53006MA	PORK-LEAN	25 COOKED-FRESH-FRIED					0.030000
53006MA	PORK-LEAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED					0.030000
55008BA	TURKEY-BYP	21 COOKED-NFS					0.010000
55008BA	TURKEY-BYP	26 COOKED-FRESH-PICKLED, CORNED, OR CURED					0.010000
55008LA	TURKEY ORGAN	21 COOKED-NFS					0.010000
55008LA	TURKEY ORGAN	25 COOKED-FRESH-FRIED					0.010000
55008MA	TURKEY W/O SKIN	21 COOKED-NFS					0.060000
55008MA	TURKEY W/O SKIN	31 COOKED-FRESH OR CANNED					0.060000
55008MA	TURKEY W/O SKIN	62 COOKED-FRESH OR FROZEN-BAKED					0.060000
55008MR	TURKEY+SKIN	21 COOKED-NFS					0.060000
55008MR	TURKEY+SKIN	25 COOKED-FRESH-FRIED					0.060000
55008NC	TURKEY-UNSPEC	21 COOKED-NFS					0.060000
55013PA	POULTRY, OTH-BYP	00 NOT SPECIFIED					0.010000
55013LA	POULTRY, ORGAN	25 COOKED-FRESH-FRIED					0.010000
55013MA	POULTRY, OTHER	21 COOKED-NFS					0.010000
55014AA	EGGS-WHOLE	10 RAW-FRESH OR NFS					0.020000
55014AA	EGGS-WHOLE	21 COOKED-NFS					0.020000
55014AA	EGGS-WHOLE	22 COOKED-FRESH-BAKED					0.020000
55014AA	EGGS-WHOLE	23 COOKED-FRESH-BOILED					0.020000
55014AA	EGGS-WHOLE	25 COOKED-FRESH-FRIED					0.020000
55014AB	EGGS-WHITE ONLY	10 RAW-FRESH OR NFS					0.020000
55014AB	EGGS-WHITE ONLY	21 COOKED-NFS					0.020000
55014AB	EGGS-WHITE ONLY	22 COOKED-FRESH-BAKED					0.020000
55014AB	EGGS-WHITE ONLY	62 COOKED-FRESH OR FROZEN-BAKED					0.020000
55014AB	EGGS-WHITE ONLY	81 COOKED-FROZEN					0.020000
55014AC	EGGS-YOLK ONLY	10 RAW-FRESH OR NFS					0.020000
55014AC	EGGS-YOLK ONLY	21 COOKED-NFS					0.020000
55014AC	EGGS-YOLK ONLY	25 COOKED-FRESH-FRIED					0.020000
55014AC	EGGS-YOLK ONLY	31 COOKED-FRESH OR CANNED					0.020000
55015BA	CHICKEN-BYP	00 NOT SPECIFIED					0.010000

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Table 1, continued

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			PADI	UF		
Coumaphos	2yr feeding- rat	Plasma ChE inhibition in females.		-->100	Chronic feeding - dog	HED complete 03/30/89.
Caswell #335	NOEL= 0.0700 mg/kg	(Actual dose tested)	OPP RfD= 0.000700		Reproduction - rat	EPA deferred 04/20/89;
CAS No. 56-72-4	LEL= 0.3600 mg/kg		EPA RfD= 0.000000		Oncogenicity - mouse	Pending RAC approval of RAF ChE report.
A.I. CODE: 036501						WHO TADI withdrawn 1980;
CFR No. 180.189	ONCO: Negative- 1 species.	ity in rat.				WHO last reviewed 1987.

FOOD CODE	FOOD	FOOD FORM	PET. #	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)
55015LA	CHICKEN-ORGAN	21 COOKED-NFS	299	P 1.000000	0.010000		100.00	0.010000
55015LA	CHICKEN-ORGAN	25 COOKED-FRESH-FRIED	299	P 1.000000	0.010000		100.00	0.010000
55015LA	CHICKEN-ORGAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	299	P 1.000000	0.010000		100.00	0.010000
55015MA	CHICKEN-W/O SKIN	21 COOKED-NFS	299	P 1.000000	0.060000		100.00	0.060000
55015MA	CHICKEN-W/O SKIN	22 COOKED-FRESH-BAKED	299	P 1.000000	0.060000		100.00	0.060000
55015MA	CHICKEN-W/O SKIN	25 COOKED-FRESH-FRIED	299	P 1.000000	0.060000		100.00	0.060000
55015MA	CHICKEN-W/O SKIN	31 COOKED-FRESH OR CANNED	299	P 1.000000	0.060000		100.00	0.060000
55015MA	CHICKEN-W/O SKIN	53 COOKED-CANNED-BOILED	299	P 1.000000	0.060000		100.00	0.060000
55015MP	CHICKEN-SKIN	21 COOKED-NFS	299	P 1.000000	0.060000		100.00	0.060000
55015MP	CHICKEN-SKIN	25 COOKED-FRESH-FRIED	299	P 1.000000	0.060000		100.00	0.060000

Table 1a: 95th Percentile or Maximum Residues
Used in the Acute Exposure Analysis

<u>Food Code</u>	<u>Antic. Res</u>	<u>Abbrev Food Name</u>
50000FA10	0.0200	MILK-FAT SOLIDS
50000FA21	0.0200	MILK-FAT SOLIDS
50000FA51	0.0200	MILK-FAT SOLIDS
53001BA21	0.4000	BEEF-MEAT BYP
53001BA26	0.4000	BEEF-MEAT BYP
53001BB21	0.1000	BEEF-OTH ORGAN
53001BB51	0.1000	BEEF-OTH ORGAN
53001DA21	0.0500	BEEF-DRIED
53001FA10	0.4000	BEEF-FAT
53001FA21	0.4000	BEEF-FAT
53001FA22	0.4000	BEEF-FAT
53001FA23	0.4000	BEEF-FAT
53001FA24	0.4000	BEEF-FAT
53001FA25	0.4000	BEEF-FAT
53001KA21	0.0400	BEEF-KIDNEY
53001LA25	0.1000	BEEF-LIVER
53001LA31	0.1000	BEEF-LIVER
53001MA10	0.0500	BEEF-LEAN
53001MA21	0.0500	BEEF-LEAN
53001MA22	0.0500	BEEF-LEAN
53001MA23	0.0500	BEEF-LEAN
53001MA24	0.0500	BEEF-LEAN
53002BA00	1.0000	GOAT-MEAT BYP
53002BB00	0.0300	GOAT-OTH ORGAN
53002FA23	1.0000	GOAT-FAT
53002FA25	1.0000	GOAT-FAT
53002KA00	0.0300	GOAT-KIDNEY
53002LA00	0.0300	GOAT-LIVER
53002MA23	0.2000	GOAT-LEAN
53002MA25	0.2000	GOAT-LEAN
53003AA00	0.4000	HORSE
53005BA21	1.0000	SHEEP-MEAT BYP
53005BB21	0.0900	SHEEP-OTH ORGAN
53005FA21	1.0000	SHEEP-FAT
53005KA21	0.0900	SHEEP-KIDNEY
53005LA00	0.0900	SHEEP-LIVER

Table 1a: 95th Percentile or Maximum Residues
Used in the Acute Exposure Analysis, cón't

<u>Food Code</u>	<u>Antic. Res</u>	<u>Abbrev Food Name</u>
53005MA21	0.2500	SHEEP-LEAN
53005MA31	0.2500	SHEEP-LEAN
53006BA21	0.6000	PORK-MEAT BYP
53006BB21	0.0200	PORK-OTH ORGAN
53006BB26	0.0200	PORK-OTH ORGAN
53006FA10	0.6000	PORK-FAT
53006FA21	0.6000	PORK-FAT
53006FA23	0.6000	PORK-FAT
53006FA25	0.6000	PORK-FAT
53006FA26	0.6000	PORK-FAT
53006KA21	0.0200	PORK-KIDNEY
53006LA21	0.0200	PORK-LIVER
53006LA25	0.0200	PORK-LIVER
53006MA21	0.2000	PORK-LEAN
53006MA25	0.2000	PORK-LEAN
53006MA26	0.2000	PORK-LEAN
55008BA21	0.0300	TURKEY-BYP
55008BA26	0.0300	TURKEY-BYP
55008LA21	0.0300	TURKEY ORGAN
55008LA25	0.0300	TURKEY ORGAN
55008MA21	0.6000	TURKEY W/O SKIN
55008MA31	0.6000	TURKEY W/O SKIN
55008MA62	0.6000	TURKEY W/O SKIN
55008MB21	0.6000	TURKEY+SKIN
55008MB25	0.6000	TURKEY+SKIN
55008MC21	0.6000	TURKEY-UNSPEC
55013BA00	0.0300	POULTRY,OTH-BYP
55013LA25	0.0300	POULTRY,ORGAN
55013MA21	0.0300	POULTRY,OTHER
55014AA10	0.0800	EGGS-WHOLE
55014AA21	0.0800	EGGS-WHOLE
55014AA22	0.0800	EGGS-WHOLE
55014AA23	0.0800	EGGS-WHOLE
55014AA25	0.0800	EGGS-WHOLE
55014AB10	0.0800	EGGS-WHITE ONLY
55014AB21	0.0800	EGGS-WHITE ONLY

Table 1a: 95th Percentile or Maximum Residues
Used in the Acute Exposure Analysis, con't

<u>Food Code</u>	<u>Antic. Res</u>	<u>Abbrev Food Name</u>
55014AB22	0.0800	EGGS-WHITE ONLY
55014AB62	0.0800	EGGS-WHITE ONLY
55014AB81	0.0800	EGGS-WHITE ONLY
55014AC10	0.0800	EGGS-YOLK ONLY
55014AC21	0.0800	EGGS-YOLK ONLY
55014AC25	0.0800	EGGS-YOLK ONLY
55014AC31	0.0800	EGGS-YOLK ONLY
55015BA00	0.0300	CHICKEN-BYP
55015LA21	0.0300	CHICKEN-ORGAN
55015LA25	0.0300	CHICKEN-ORGAN
55015LA26	0.0300	CHICKEN-ORGAN
55015MA21	0.6000	CHICKEN-W/O SKIN
55015MA22	0.6000	CHICKEN-W/O SKIN
55015MA25	0.6000	CHICKEN-W/O SKIN
55015MA31	0.6000	CHICKEN-W/O SKIN
55015MA53	0.6000	CHICKEN-W/O SKIN
55015MB21	0.6000	CHICKEN+SKIN
55015MB25	0.6000	CHICKEN+SKIN

Table 2

CHEMICAL INFORMATION	STUDY TYPE	EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS	STATUS
			IPADI	UF		
Caswell #335	2yr feeding rat	Plasma ChE inhibition in females.	OPP RED= 0.000700	Chronic feeding - dog	HED complete 03/30/89.	
CAS No. 56-72-4	NOEL= 0.0700 mg/kg	(Actual dose tested)	EPA RED= 0.000000	Reproduction - rat	EPA deferred 04/20/89;	
A.I. CODE: 036501	LEL= 1.00 ppm			Oncogenicity - mouse	Pending RAC approval of	
CFR No. 180.189	ONCO: Negative- 1 species.	No evidence of oncogenicity in rat.			RAF ChE report.	
					WHO TADI withdrawn 1980;	
					WHO last reviewed 1987.	

POPULATION SUBGROUP	TOTAL TMRC (MG/KG BODY WEIGHT/DAY)		NEW TMRC		DIFFERENCE AS PERCENT OF RED		EFFECT OF ANTICIPATED RESIDUES	
	CURRENT TMRC*	NEW TMRC**	AS PERCENT OF RED	AS PERCENT OF RED	ARC	ARC	%RED	%RED
U.S. POPULATION - 48 STATES	0.003011	0.003011	430.190571	0.000000	0.000169	0.000169	24.12257	24.12257
U.S. POPULATION - SPRING SEASON	0.003000	0.003000	428.584429	0.000000	0.000169	0.000169	24.09471	24.09471
U.S. POPULATION - SUMMER SEASON	0.003047	0.003047	435.254714	0.000000	0.000172	0.000172	24.51114	24.51114
U.S. POPULATION - FALL SEASON	0.003046	0.003046	435.089571	0.000000	0.000170	0.000170	24.33229	24.33229
U.S. POPULATION - WINTER SEASON	0.002953	0.002953	421.832000	0.000000	0.000165	0.000165	23.55271	23.55271
NORTHEAST REGION	0.003066	0.003066	438.026286	0.000000	0.000172	0.000172	24.58343	24.58343
NORTH CENTRAL REGION	0.003027	0.003027	432.417143	0.000000	0.000166	0.000166	23.73214	23.73214
SOUTHERN REGION	0.002970	0.002970	424.293857	0.000000	0.000168	0.000168	23.99414	23.99414
WESTERN REGION	0.002986	0.002986	426.570714	0.000000	0.000170	0.000170	24.29657	24.29657
HISPANICS	0.003729	0.003729	532.708714	0.000000	0.000212	0.000212	30.23271	30.23271
NON-HISPANIC WHITES	0.002916	0.002916	416.523429	0.000000	0.000163	0.000163	23.25157	23.25157
NON-HISPANIC BLACKS	0.003238	0.003238	462.603143	0.000000	0.000186	0.000186	26.50714	26.50714
NON-HISPANIC OTHERS	0.003468	0.003468	495.496571	0.000000	0.000191	0.000191	27.22614	27.22614
NURSING INFANTS (< 1 YEAR OLD)	0.001835	0.001835	262.130286	0.000000	0.000088	0.000088	12.62900	12.62900
NON-NURSING INFANTS (< 1 YEAR OLD)	0.003972	0.003972	567.466429	0.000000	0.000183	0.000183	26.17029	26.17029
FEMALES (13+ YEARS, PREGNANT)	0.002119	0.002119	302.680429	0.000000	0.000115	0.000115	16.42786	16.42786
FEMALES 13+ YEARS, NURSING CHILDREN (1-6 YEARS OLD)	0.002221	0.002221	317.285714	0.000000	0.000126	0.000126	18.01486	18.01486
CHILDREN (7-12 YEARS OLD)	0.005846	0.005846	835.109143	0.000000	0.000322	0.000322	46.04471	46.04471
MALES (13-19 YEARS OLD)	0.004222	0.004222	603.100286	0.000000	0.000233	0.000233	33.25143	33.25143
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)	0.003276	0.003276	468.040714	0.000000	0.000181	0.000181	25.89671	25.89671
MALES (20 YEARS AND OLDER)	0.002625	0.002625	375.022000	0.000000	0.000146	0.000146	20.80314	20.80314
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)	0.002682	0.002682	383.128429	0.000000	0.000153	0.000153	21.79029	21.79029
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)	0.002208	0.002208	315.429429	0.000000	0.000127	0.000127	18.13914	18.13914

*Current TMRC does not include new or pending tolerances.

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

Table 3: Acute Exposure Summary for Coumaphos

	<u>Mean Daily Residue Contribution per User Day</u>		
	<u>% User Days</u>	<u>MG/KG/DAY</u>	<u>Average MOS</u>
U.S. Population:	99.7	0.000798	6300
Infants:	89.3	0.001059	4700
Children:	99.9	0.001563	3200
Females:	99.8	0.000613	8200
Males:	99.9	0.000725	6900

Estimated % of user days with residue contribution exceeding the exposure X in UG/KG, where X =

	0	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.01	0.015	0.02	0.025	0.05	0.075	0.1
U.S. Population:	100	26	7	3	1	1	0	0	0	0	0	0	0	0	0	0	0
Infants:	100	31	18	11	6	4	2	2	1	1	0	0	0	0	0	0	0
Children:	100	54	25	13	7	4	2	1	1	0	0	0	0	0	0	0	0
Females:	100	18	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Males:	100	23	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0
MOS		5000	2500	1667	1250	1000	833	715	625	556	500	333	250	200	100	67	50

NOTE: The distributions shown above represent the exposure encountered by people who consume food containing coumaphos residues at levels specified in the accompanying memorandum and tables.