



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

CASWELL FILE

MAR 12 1992

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

SUBJECT: RfD Exceeders Project: Dietary Exposure Analysis of
Naled Using Anticipated Residues

FROM: Stephen A. Schaible *Stephen A. Schaible*
Dietary Exposure Section
HED/SACB (H7509C)

TO: Jack Housenger, Acting Chief
Special Review Branch
Special Review and Reregistration Division (H7508W)

THROUGH: James P. Kariya, Chief *Kariya*
Dietary Exposure Section *W. Housenger*
Health Effects Division

As part of the RfD Exceeders Project, Dietary Exposure Section was requested by SRRD to conduct a DRES chronic analysis for exposure to naled from its registered uses, using anticipated residues generated by CBRS and percent of crop treated data supplied by BEAD.

Toxicological Endpoints

A reference dose (RfD) of 0.002 mg/kg body weight/day was used in this analysis, based on a no observed effect level (NOEL) of 0.20 mg/kg bwt/day and an uncertainty factor of 100. The RfD is based on a two year feeding study in rats which demonstrated as effects inhibition of brain cholinesterase and slight inhibition of red blood cell and plasma cholinesterase. This RfD has been approved by both HED (3/17/87) and Agency (4/15/87) reference dose committees.

Residue Information

Food uses considered in this analysis were the published uses of naled as listed in the 40 CFR 180.215. Percent crop treated information was supplied by BEAD in the form of an updated Table II-1 to the PQUA dated 10/18/91 (this updated table was not sent with the original memo). For the purpose of this analysis, the percent of crop treated value in the PQUA for the commodity "grapevine" was assumed to apply to the "grape" commodities in DRES and the PQUA listing of "cole crops" was assumed to correlate with the DRES crop group "Brassica leafy vegetables".

Anticipated residues used in the analysis were generated by CBRS (D. McNeilly memo dated 2/27/92). In the memo, residue

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values were given for naled, its metabolite dichlorvos (DDVP), and the total residue (naled and DDVP) expressed as naled equivalents (DES used these values in the analysis). In many cases, expected residues after cooking were supplied by Chemistry Branch, based on information in the DDVP Reg. Std. suggesting that cooking reduces naled and DDVP residues by around 90% (D. McNeilly memo, 2/27/92). These residues were incorporated into the analysis where appropriate, and in cases where it was not clear whether a commodity had been cooked or not, the residue value for the raw commodity (the higher residue) was assumed.

Based on a tomato separation study and citrus processing information, CBRS assumed that there was no concentration of naled residues in processed commodities. Given this assumption, all concentration factors in DRES were turned off for this analysis. Other assumptions made in the analysis were that the residues reported for cattle meat, fat, and meat byproducts also applied to goat, hog, horse, and sheep, and that the residue reported for "celery, untrimmed" in the CBRS memo should be used in the DRES analysis for celery. A summary of the residue information used in this analysis is attached as Table 1.

DRES Analysis

The DRES routine chronic exposure analysis used percent crop treated information and anticipated residues to estimate the Anticipated Residue Contribution (ARC) for the overall U.S. population and 22 population subgroups. The ARC for the overall U.S. population from published tolerances is 0.000566 mg/kg bwt/day, which represents 28% of the RfD. Non-nursing infants less than one year old are the subgroup most highly exposed, and the only subgroup for which the exposure still exceeds the RfD. The ARC for this subgroup is 0.002523 mg/kg bwt/day, or 126% of the RfD. Peaches are the main contributor of risk to this subgroup, the ARC from use of naled on this commodity accounting for approximately 90% of the RfD. A summary of the TMRCs, the ARCs, and their representations as percentages of the RfD for the overall U.S. population and the 22 population subgroups is attached as Table 2.

Attachments

cc: DES, CBRS, P.Parsons, E.Budd, Caswell #586

TABLE 1

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 586

DATE: 03/02/92

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CHEMICAL		STUDY TYPE		EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Naled (Dibrom)		2yr feeding- rat		Doses by gavage. Inhibition of brain CHE, slight inhibition of RBC, plasma CHE at 10 mg/kg. No evidence of oncogenicity in rats or mice.	PADI UF -->100 OPP RfD= 0.002000 EPA RfD= 0.002000		Developmental tox- rabbit (Core-Supplementary) UF of 100 due to brain CHE inhibition.	On IRIS.	HED complete 05/19/86. EPA verified 07/22/86. HED reassess 03/17/87. EPA verified 04/15/87.	
CAS No. 300-76-5 A.I. CODE: 034401 CFR No. 180.215	NOEL= 0.2000 mg/kg 0.00 ppm LEL= 2.0000 mg/kg 0.00 ppm ONCO: Negative- 2 species.									
FOOD CODE	FOOD	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	AR STATISTIC TYPE	% CROP TREATED	RES. VALUE USED IN TAS RUN (ppm)		
01014AA	GRAPES-FRESH	10 RAW-FRESH OR NFS		P 0.500000	0.020000		0.10	0.000020		
01014AA	GRAPES-FRESH	21 COOKED-NFS		P 0.500000	0.020000		0.10	0.000020		
01014AA	GRAPES-FRESH	31 COOKED-FRESH OR CANNED		P 0.500000	0.020000		0.10	0.000020		
01014DA	GRAPES-RAISINS	10 RAW-FRESH OR NFS		P 0.500000	0.020000C		0.10	0.000020		
01014DA	GRAPES-RAISINS	21 COOKED-NFS		P 0.500000	0.020000C		0.10	0.000020		
01014DA	GRAPES-RAISINS	22 COOKED-FRESH-BAKED		P 0.500000	0.020000C		0.10	0.000020		
01014JA	GRAPES-JUICE	10 RAW-FRESH OR NFS		P 0.500000	0.020000C		0.10	0.000020		
01014JA	GRAPES-JUICE	15 RAW-FRESH OR CANNED		P 0.500000	0.020000C		0.10	0.000020		
01014JA	GRAPES-JUICE	21 COOKED-NFS		P 0.500000	0.020000C		0.10	0.000020		
01016AA	STRAWBERRIES	10 RAW-FRESH OR NFS		P 1.000000	0.260000		100.00	0.260000		
01016AA	STRAWBERRIES	21 COOKED-NFS		P 1.000000	0.260000		100.00	0.260000		
01016AA	STRAWBERRIES	70 RAW-FROZEN		P 1.000000	0.260000		100.00	0.260000		
02002AA	GRAPEFRUIT-UNSP	00 NOT SPECIFIED (NO CONSUMPTION)	7F0532	P 3.000000	0.020000		0.10	0.000020		
02002AB	GRAPEFRUIT-PULP	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.020000		0.10	0.000020		
02002AB	GRAPEFRUIT-PULP	21 COOKED-NFS	7F0532	P 3.000000	0.020000		0.10	0.000020		
02002JA	GRAPEFRUIT-JUICE	15 RAW-FRESH OR CANNED	7F0532	P 3.000000	0.020000C		0.10	0.000020		
02002JA	GRAPEFRUIT-JUICE	31 COOKED-FRESH OR CANNED	7F0532	P 3.000000	0.020000C		0.10	0.000020		
02004AA	LEMONS-UNSPEC	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.180000		0.10	0.000180		
02004AA	LEMONS-UNSPEC	22 COOKED-FRESH-BAKED	7F0532	P 3.000000	0.180000		0.10	0.000180		
02004AB	LEMONS-PULP	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.180000		0.10	0.000180		
02004AB	LEMONS-PULP	31 COOKED-FRESH OR CANNED	7F0532	P 3.000000	0.180000		0.10	0.000180		
02004HA	LEMONS-PEEL	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.180000		0.10	0.000180		
02004HA	LEMONS-PEEL	21 COOKED-NFS	7F0532	P 3.000000	0.180000		0.10	0.000180		
02004JA	LEMONS-JUICE	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.180000C		0.10	0.000180		
02004JA	LEMONS-JUICE	15 RAW-FRESH OR CANNED	7F0532	P 3.000000	0.180000C		0.10	0.000180		
02004JA	LEMONS-JUICE	21 COOKED-NFS	7F0532	P 3.000000	0.180000C		0.10	0.000180		
02006AA	ORANGES-UNSPEC	31 COOKED-FRESH OR CANNED	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006AB	ORANGES-PULP	00 NOT SPECIFIED (NO CONSUMPTION)	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006AB	ORANGES-PULP	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006AB	ORANGES-PULP	21 COOKED-NFS	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006HA	ORANGES-PEEL	21 COOKED-NFS	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006HA	ORANGES-PEEL	22 COOKED-FRESH-BAKED	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006HA	ORANGES-PEEL	31 COOKED-FRESH OR CANNED	7F0532	P 3.000000	0.060000		0.10	0.000060		
02006JA	ORANGES-JUICE	15 RAW-FRESH OR CANNED	7F0532	P 3.000000	0.060000C		0.10	0.000060		
02006JA	ORANGES-JUICE	31 COOKED-FRESH OR CANNED	7F0532	P 3.000000	0.060000C		0.10	0.000060		
02008AA	TANGERINES	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.060000		0.10	0.000060		
02008JA	TANGERINE-JUICE	15 RAW-FRESH OR CANNED	7F0532	P 3.000000	0.060000C		0.10	0.000060		
03001AA	ALMONDS	10 RAW-FRESH OR NFS	5F1614	P 0.500000	0.040000		100.00	0.040000		
03001AA	ALMONDS	21 COOKED-NFS	5F1614	P 0.500000	0.040000		100.00	0.040000		
03001AA	ALMONDS	22 COOKED-FRESH-BAKED	5F1614	P 0.500000	0.040000		100.00	0.040000		

CHEMICAL		STUDY TYPE		EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
FOOD CODE	FOOD	2yr feeding- rat NOEL=	0.2000 mg/kg ppm	Doses by gavage. Inhibition of brain CHE, slight inhibition of RBC, plasma CHE at 10 mg/kg. No evi- dence of oncogenicity in rats or mice.	PAD1 UF -->100 OPP RfD= 0.002000 EPA RfD= 0.002000	Developmental tox- rabbit (Core-Supplementary)	HED complete 05/19/86. EPA verified 07/22/86. HED reassess 03/17/87. EPA verified 04/15/87.	On IRIS.	RES. VALUE USED IN TAS RUN (ppm)
FOOD CODE	FOOD FORM	PET.#	TOLERANCE (ppm)	ANTICIPATED RESIDUE (ppm)	% CROP TREATED	AR STATISTIC TYPE			
03009AA	WALNUTS	10 RAW-FRESH OR NFS	P 0.500000	0.020000	100.00				0.020000.
03009AA	WALNUTS	21 COOKED-NFS	P 0.500000	0.020000	100.00				0.020000
03009AA	WALNUTS	22 COOKED-FRESH-BAKED	P 0.500000	0.020000	100.00				0.020000
050004AA	PEACHES-FRESH	10 RAW-FRESH OR NFS	P 0.500000	0.870000	100.00				0.870000
050004AA	PEACHES-FRESH	21 COOKED-NFS	P 0.500000	0.870000	100.00				0.870000
050004AA	PEACHES-FRESH	31 COOKED-FRESH OR CANNED	P 0.500000	0.870000	100.00				0.870000
050004AA	PEACHES-FRESH	51 COOKED-CANNED	P 0.500000	0.870000C	100.00				0.870000
050004DA	PEACHES-DRIED	10 RAW-FRESH OR NFS	P 0.500000	0.870000C	100.00				0.870000
050004DA	PEACHES-DRIED	21 COOKED-NFS	P 0.500000	0.870000C	100.00				0.870000
08020AA	HOPS	21 COOKED-NFS	P 0.500000	0.008000	100.00				0.008000
10002AA	CANTALOUPES-UNSP	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.500000	0.050000	100.00				0.050000
10002AB	CANTALOUPES-PULP	10 RAW-FRESH OR NFS	P 0.500000	0.050000	100.00				0.050000
10002AB	CANTALOUPES-PULP	21 COOKED-NFS	P 0.500000	0.050000	100.00				0.050000
10003AA	CASABAS	10 RAW-FRESH OR NFS	P 0.500000	0.050000	100.00				0.050000
10004AA	CRENSHAWS	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.500000	0.050000	100.00				0.050000
10005AA	HONEYDEW MELONS	10 RAW-FRESH OR NFS	P 0.500000	0.050000	100.00				0.050000
10007AA	PERSION MELONS	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.500000	0.050000	100.00				0.050000
10008AA	WATERMELON	10 RAW-FRESH OR NFS	P 0.500000	0.050000	100.00				0.050000
10008AA	WATERMELON	21 COOKED-NFS	P 0.500000	0.050000	100.00				0.050000
10010AA	CUCUMBERS	10 RAW-FRESH OR NFS	P 0.500000	0.100000	100.00				0.100000
10010AA	CUCUMBERS	11 RAW-FRESH-PICKLED,CORNED,OR CURED	P 0.500000	0.100000	100.00				0.100000
10010AA	CUCUMBERS	21 COOKED-NFS	P 0.500000	0.100000	100.00				0.100000
10011AA	PUMPKIN	21 COOKED-NFS	P 0.500000	0.050000	100.00				0.050000
10011AA	PUMPKIN	22 COOKED-FRESH-BAKED	P 0.500000	0.050000	100.00				0.050000
10011AA	PUMPKIN	62 COOKED-FRESH OR FROZEN-BAKED	P 0.500000	0.050000	100.00				0.050000
10013AA	SQUASH-SUMMER	10 RAW-FRESH OR NFS	P 0.500000	0.070000	100.00				0.070000
10013AA	SQUASH-SUMMER	21 COOKED-NFS	P 0.500000	0.070000	100.00				0.070000
10014AA	SQUASH-WINTER	10 RAW-FRESH OR NFS	P 0.500000	0.070000	100.00				0.070000
10014AA	SQUASH-WINTER	21 COOKED-NFS	P 0.500000	0.070000	100.00				0.070000
10014AA	SQUASH-WINTER	31 COOKED-FRESH OR CANNED	P 0.500000	0.070000	100.00				0.070000
11001AA	EGGPLANT	10 RAW-FRESH OR NFS	P 0.500000	0.100000	100.00				0.100000
11001AA	EGGPLANT	21 COOKED-NFS	P 0.500000	0.100000	100.00				0.100000
11001AA	EGGPLANT	25 COOKED-FRESH-FRIED	P 0.500000	0.100000	100.00				0.100000
11003AA	PEPPERS,SWEET	10 RAW-FRESH OR NFS	P 0.500000	0.100000	100.00				0.100000
11003AA	PEPPERS,SWEET	21 COOKED-NFS	P 0.500000	0.100000	100.00				0.100000
11003AB	CHILI PEPPERS	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.500000	0.100000	100.00				0.100000
11003AD	PEPPERS-OTHER	10 RAW-FRESH OR NFS	P 0.500000	0.010000	100.00				0.010000
11003AD	PEPPERS-OTHER	21 COOKED-NFS	P 0.500000	0.010000	100.00				0.010000
11003AD	PEPPERS-OTHER	51 COOKED-CANNED	P 0.500000	0.010000	100.00				0.010000
10004AA	PIMENTOS	10 RAW-FRESH OR NFS	P 0.500000	0.100000	100.00				0.100000

CHEMICAL	STUDY TYPE	EFFECTS	REFERENCE DOSES	DATA GAPS/COMMENTS	STATUS
Naled (Dibrom)	2yr feeding- rat	Inhibi-	PADI UF --> 100	Developmental tox- rabbit	HED complete 05/19/86.
Caswell #586	NOEL=	tion of brain	OPP RfD= 0.002000	(Core-Supplementary)	EPA verified 07/22/86.
CAS No. 300-76-5	0:00 ppm	inhibition of RBC, plasma	EPA RfD= 0.002000		HED reassess 03/17/87.
A.I. CODE: 034401	LEL=	ChE at 10 mg/kg. No evi-		UF of 100 due to brain	EPA verified 04/15/87.
CFR No. 180.215	ONCO: Negative- 2 species	dence of oncogenicity in rats or mice.		ChE inhibition.	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)
111004AA	PIMIENTOS	21 COOKED-NFS	7F0532	P 0.500000	0.010000		100.00	0.010000
111004AA	PIMIENTOS	31 COOKED-FRESH OR CANNED	7F0532	P 0.500000	0.010000		100.00	0.010000
111005AA	TOMATOES-WHOLE	10 RAW-FRESH OR NFS	7F0532	P 0.500000	0.030000		100.00	0.030000
111005AA	TOMATOES-WHOLE	21 COOKED-NFS	7F0532	P 0.500000	0.003000		100.00	0.003000
111005AA	TOMATOES-WHOLE	31 COOKED-FRESH OR CANNED	7F0532	P 0.500000	0.003000		100.00	0.003000
111005JA	TOMATOES-JUICE	10 RAW-FRESH OR NFS	7F0532	P 0.500000	0.030000C		100.00	0.030000
111005JA	TOMATOES-JUICE	21 COOKED-NFS	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005RA	TOMATOES-PUREE	10 RAW-FRESH OR NFS	7F0532	P 0.500000	0.030000C		100.00	0.030000
111005RA	TOMATOES-PUREE	21 COOKED-NFS	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005RA	TOMATOES-PUREE	31 COOKED-FRESH OR CANNED	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005RA	TOMATOES-PUREE	32 COOKED-FRESH OR CANNED-BAKED	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005RA	TOMATOES-PUREE	51 COOKED-CANNED	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005TA	TOMATOES-PASTE	21 COOKED-NFS	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005TA	TOMATOES-PASTE	22 COOKED-FRESH-BAKED	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005TA	TOMATOES-PASTE	31 COOKED-FRESH OR CANNED	7F0532	P 0.500000	0.003000C		100.00	0.003000
111005UA	TOMATOES-CATSUP	21 COOKED-NFS	7F0532	P 3.000000	0.003000C		100.00	0.003000
13002AA	CELERY	10 RAW-FRESH OR NFS		P 3.000000	0.570000		100.00	0.570000
13002AA	CELERY	21 COOKED-NFS		P 3.000000	0.060000		100.00	0.060000
13005AA	BROCCOLI	21 COOKED-NFS	7F0532	P 1.000000	0.010000		0.30	0.000030
13005AA	BROCCOLI	31 COOKED FRESH OR CANNED	7F0532	P 1.000000	0.010000		0.30	0.000030
13005AA	BROCCOLI	63 COOKED-FRESH OR FROZEN-BOILED	7F0532	P 1.000000	0.010000		0.30	0.000030
13006AA	BRUSSEL SPROUTS	21 COOKED-NFS	7F0532	P 1.000000	0.010000		0.30	0.000030
13006AA	BRUSSEL SPROUTS	23 COOKED-FRESH-BOILED	7F0532	P 1.000000	0.010000		0.30	0.000030
13007AA	CABBAGE	10 RAW-FRESH OR NFS	7F0532	P 1.000000	0.090000		0.30	0.000270
13007AA	CABBAGE	11 RAW-FRESH-PICKLED, CORNED, OR CURED	7F0532	P 1.000000	0.090000		0.30	0.000270
13007AA	CABBAGE	21 COOKED-NFS	7F0532	P 1.000000	0.010000		0.30	0.000030
13008AA	CAULIFLOWER	10 RAW-FRESH OR NFS	7F0532	P 1.000000	0.090000		0.30	0.000270
13008AA	CAULIFLOWER	21 COOKED-NFS	7F0532	P 1.000000	0.010000		0.30	0.000030
13009AA	COLLARDS	51 COOKED-CANNED		P 3.000000	0.010000		0.30	0.000030
13009AA	COLLARDS	63 COOKED-FRESH OR FROZEN-BOILED		P 3.000000	0.010000		0.30	0.000030
13010AA	CABBAGE-CHINESE	10 RAW-FRESH OR NFS	7F0532	P 1.000000	0.090000		0.30	0.000270
13010AA	CABBAGE-CHINESE	21 COOKED-NFS	7F0532	P 1.000000	0.010000		0.30	0.000030
13011AA	KALE	63 COOKED-FRESH OR FROZEN-BOILED		P 3.000000	0.070000		0.30	0.000210
13013AA	LETTUCE-LEAFY	10 RAW-FRESH OR NFS	7F0532	P 1.000000	0.640000		100.00	0.640000
13016AA	FENNEL	00 NOT SPECIFIED (NO CONSUMPTION)		P 3.000000	0.570000		100.00	0.570000
13020AA	LETTUCE-UNSPEC	10 RAW-FRESH OR NFS	7F0532	P 1.000000	0.640000		100.00	0.640000
13024AA	SPINACH	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.300000		100.00	0.300000
13024AA	SPINACH	21 COOKED-NFS	7F0532	P 3.000000	0.030000		100.00	0.030000
13024AA	SPINACH	31 COOKED-FRESH OR CANNED	7F0532	P 3.000000	0.030000		100.00	0.030000
13025AA	SWISS CHARD	10 RAW-FRESH OR NFS	7F0532	P 3.000000	0.100000		100.00	0.100000

ANTICIPATED RESIDUE INFORMATION FOR CASWELL NUMBER 586

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DATE: 03/02/92

CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Naled (Dibrom)		2yr feeding- rat NOEL= 0.2000 mg/kg LEL= 2.0000 mg/kg ONCO: Negative- 2 species		Doses by gavage. tion of brain ChE, slight inhibition of RBC, plasma ChE at 10 mg/kg. No evi- dence of oncogenicity in rats or mice.		PADI UF -->100 OPP RfD= 0.002000 EPA RfD= 0.002000		Developmental tox- rabbit (Core-Supplementary) UF of 100 due to brain ChE inhibition.		HED complete 05/19/86. EPA verified 07/22/86. HED reassess 03/17/87. EPA verified 04/15/87. 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)			
24004AA	RICE-ROUGH	21 COOKED-NFS	7F0532	P 0.500000	0.045000		100.00	0.045000			
24004AA	RICE-ROUGH	23 COOKED-FRESH-BOILED	7F0532	P 0.500000	0.045000		100.00	0.045000			
24004AB	RICE-MILLED	21 COOKED-NFS	7F0532	P 0.500000	0.045000		100.00	0.045000			
24004AB	RICE-MILLED	22 COOKED-FRESH-BAKED	7F0532	P 0.500000	0.045000		100.00	0.045000			
24004AB	RICE-MILLED	23 COOKED-FRESH-BOILED	7F0532	P 0.500000	0.045000		100.00	0.045000			
24004AB	RICE-MILLED	31 COOKED-FRESH OR CANNED	7F0532	P 0.500000	0.045000		100.00	0.045000			
25002SA	BET SUGAR	10 RAW-FRESH OR NFS	7F0532	P 0.500000	0.040000		100.00	0.040000			
25002SA	BET SUGAR	21 COOKED-NFS		P 0.500000	0.004000		100.00	0.004000			
25002SA	BET SUGAR	22 COOKED-FRESH-BAKED		P 0.500000	0.004000		100.00	0.004000			
25002SA	BET SUGAR	31 COOKED-FRESH OR CANNED		P 0.500000	0.004000		100.00	0.004000			
27003OA	COTTONSEED-OIL	18 PROCESSED OIL	7F0532	P 0.500000	0.030000		100.00	0.030000			
27003OA	COTTONSEED-MEAL	18 PROCESSED OIL	7F0532	P 0.500000	0.030000		100.00	0.030000			
27008AA	SAFFLOWER-SEED	00 NOT SPECIFIED (NO CONSUMPTION)		P 0.500000	0.040000		100.00	0.040000			
27008AA	SAFFLOWER-OIL	18 PROCESSED OIL		P 0.500000	0.040000		100.00	0.040000			
43058AA	WINE AND SHERRY	10 RAW-FRESH OR NFS		P 0.500000	0.020000		0.10	0.000020			
50000DB	MILK-NON-FAT SOL	21 COOKED-NFS		P 0.050000	0.014000		100.00	0.014000			
50000DB	MILK-NON-FAT SOL	10 RAW-FRESH OR NFS		P 0.050000	0.014000		100.00	0.014000			
50000DB	MILK-NON-FAT SOL	51 COOKED-CANNED		P 0.050000	0.014000		100.00	0.014000			
50000FA	MILK-FAT SOLIDS	10 RAW-FRESH OR NFS		P 0.050000	0.014000		100.00	0.014000			
50000FA	MILK-FAT SOLIDS	21 COOKED-NFS		P 0.050000	0.014000		100.00	0.014000			
50000FA	MILK-FAT SOLIDS	51 COOKED-CANNED		P 0.050000	0.014000		100.00	0.014000			
50000SA	MILK SUG (LACT)	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			
50000SA	MILK SUG (LACT)	51 COOKED-CANNED		P 0.050000	0.013600		100.00	0.013600			
53001BA	BEEF-MEAT BYP	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			
53001BA	BEEF-MEAT BYP	26 COOKED-FRESH-PICKLED,CORNEED,OR CURED		P 0.050000	0.013600		100.00	0.013600			
53001BB	BEEF-OTH ORGAN	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			
53001BB	BEEF-OTH ORGAN	51 COOKED-CANNED		P 0.050000	0.013600		100.00	0.013600			
53001DA	BEEF-DRIED	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			
53001FA	BEEF-FAT	10 RAW-FRESH OR NFS		P 0.050000	0.013600		100.00	0.013600			
53001FA	BEEF-FAT	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			
53001FA	BEEF-FAT	22 COOKED-FRESH-BAKED		P 0.050000	0.013600		100.00	0.013600			
53001FA	BEEF-FAT	23 COOKED-FRESH-BOILED		P 0.050000	0.013600		100.00	0.013600			
53001FA	BEEF-FAT	24 COOKED-FRESH-BROILED		P 0.050000	0.013600		100.00	0.013600			
53001FA	BEEF-FAT	25 COOKED-FRESH-FRIED		P 0.050000	0.013600		100.00	0.013600			
53001KA	BEEF-KIDNEY	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			
53001LA	BEEF-LIVER	25 COOKED-FRESH-FRIED		P 0.050000	0.013600		100.00	0.013600			
53001LA	BEEF-LIVER	31 COOKED-FRESH OR CANNED		P 0.050000	0.013600		100.00	0.013600			
53001MA	BEEF-LEAN	10 RAW-FRESH OR NFS		P 0.050000	0.013600		100.00	0.013600			
53001MA	BEEF-LEAN	21 COOKED-NFS		P 0.050000	0.013600		100.00	0.013600			

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CHEMICAL		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Naled (Dibrom)		2yr feeding- rat NOEL= 0.2000 mg/kg 0.00 ppm LEL= 2.0000 mg/kg 0.00 ppm ONCO: Negative- 2 species		Doses by gavage. Inhibi- tion of brain ChE, slight inhibition of RBC, plasma ChE at 10 mg/kg. No evi- dence of oncogenicity in rats or mice.		PAD1 UF -->100 OPP RfD= 0.002000 EPA RfD= 0.002000		Developmental tox- rabbit (Core-Supplementary) UF of 100 due to brain ChE inhibition.		HED complete 05/19/86. EPA verified 07/22/86., HED reassess 03/17/87. EPA verified 04/15/87. 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)			
53001MA	BEEF-LEAN	22 COOKED-FRESH-BAKED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53001MA	BEEF-LEAN	23 COOKED-FRESH-BOILED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53001MA	BEEF-LEAN	24 COOKED-FRESH-BROILED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53002BA	GOAT-MEAT BYP	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53002BB	GOAT-OTH ORGAN	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53002FA	GOAT-FAT	23 COOKED-FRESH-BOILED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53002FA	GOAT-FAT	25 COOKED-FRESH-FRIED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53002KA	GOAT-KIDNEY	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53002LA	GOAT-LIVER	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53002MA	GOAT-LEAN	23 COOKED-FRESH-BOILED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53002MA	GOAT-LEAN	25 COOKED-FRESH-FRIED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003AA	HORSE	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53003BA	SHEEP-MEAT BYP	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003BB	SHEEP-OTH ORGAN	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003FA	SHEEP-FAT	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003KA	SHEEP-KIDNEY	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003LA	SHEEP-LIVER	00 NOT SPECIFIED (NO CONSUMPTION)	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53003MA	SHEEP-LEAN	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003MA	SHEEP-LEAN	31 COOKED-FRESH OR CANNED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003MA	SHEEP-MEAT BYP	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003MA	SHEEP-OTH ORGAN	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53003MA	SHEEP-OTH ORGAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006FA	PORK-FAT	10 RAW-FRESH OR NFS	P 0.050000	P 0.050000	0.136000		100.00	0.136000			
53006FA	PORK-FAT	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006FA	PORK-FAT	23 COOKED-FRESH-BOILED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006FA	PORK-FAT	25 COOKED-FRESH-FRIED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006FA	PORK-FAT	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006KA	PORK-KIDNEY	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006LA	PORK-LIVER	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006LA	PORK-LIVER	25 COOKED-FRESH-FRIED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006MA	PORK-LEAN	21 COOKED-NFS	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006MA	PORK-LEAN	25 COOKED-FRESH-FRIED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53006MA	PORK-LEAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	P 0.050000	P 0.050000	0.013600		100.00	0.013600			
53008BA	TURKEY-BYP	21 COOKED-NFS	P 0.050000	P 0.050000	0.003000		100.00	0.003000			
53008BA	TURKEY-BYP	26 COOKED-FRESH-PICKLED, CORNED, OR CURED	P 0.050000	P 0.050000	0.003000		100.00	0.003000			
53008LA	TURKEY ORGAN	21 COOKED-NFS	P 0.050000	P 0.050000	0.003000		100.00	0.003000			
53008LA	TURKEY ORGAN	25 COOKED-FRESH-FRIED	P 0.050000	P 0.050000	0.003000		100.00	0.003000			
53008MA	TURKEY W/O SKIN	21 COOKED-NFS	P 0.050000	P 0.050000	0.003000		100.00	0.003000			
53008MA	TURKEY W/O SKIN	31 COOKED-FRESH OR CANNED	P 0.050000	P 0.050000	0.003000		100.00	0.003000			
53008MA	TURKEY W/O SKIN	62 COOKED-FRESH OR FROZEN-BAKED	P 0.050000	P 0.050000	0.003000		100.00	0.003000			

CHEMICAL		STUDY TYPE		EFFECTS	REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS
Naled (Dibrom) Caswell #586 CAS No. 300-76-5 A.I. CODE: 034401 CFR No. 180.215		2yr feeding- rat NOEL= 0.2000 mg/kg 0.00 ppm LEL= 2.0000 mg/kg 0.00 ppm ONCO: Negative- 2 species		Doses by gavage. Inhibi- tion of brain CHE, slight inhibition of RBC, plasma CHE at 10 mg/kg. No evi- dence of oncogenicity in rats or mice.	PADI UF -->100 OPP RfD= 0.002000 EPA RfD= 0.002000	Developmental tox- rabbit (Core-Supplementary) UF of 100 due to brain ChE inhibition.		HED complete 05/19/86. EPA verified 07/22/86. HED reassess 03/17/87. EPA verified 04/15/87. 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)	
55008MB	TURKEY+SKIN	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55008MB	TURKEY+SKIN	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	
55008MC	TURKEY-UNSPEC	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55013BA	POULTRY,OTH-BYP	00 NOT SPECIFIED (NO CONSUMPTION)		P 0.050000	0.030000		100.00	0.030000	
55013LA	POULTRY,ORGAN	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	
55013MA	POULTRY,OTHER	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55014AA	EGGS-WHOLE	10 RAW-FRESH OR NFS		P 0.050000	0.030000		100.00	0.030000	
55014AA	EGGS-WHOLE	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55014AA	EGGS-WHOLE	22 COOKED-FRESH-BAKED		P 0.050000	0.003000		100.00	0.003000	
55014AA	EGGS-WHOLE	23 COOKED-FRESH-BOILED		P 0.050000	0.003000		100.00	0.003000	
55014AA	EGGS-WHOLE	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	
55014AB	EGGS-WHITE ONLY	10 RAW-FRESH OR NFS		P 0.050000	0.030000		100.00	0.030000	
55014AB	EGGS-WHITE ONLY	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55014AB	EGGS-WHITE ONLY	22 COOKED-FRESH-BAKED		P 0.050000	0.003000		100.00	0.003000	
55014AB	EGGS-WHITE ONLY	62 COOKED-FRESH OR FROZEN-BAKED		P 0.050000	0.003000		100.00	0.003000	
55014AB	EGGS-WHITE ONLY	81 COOKED-FROZEN		P 0.050000	0.003000		100.00	0.003000	
55014AC	EGGS-YOLK ONLY	10 RAW-FRESH OR NFS		P 0.050000	0.030000		100.00	0.030000	
55014AC	EGGS-YOLK ONLY	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55014AC	EGGS-YOLK ONLY	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	
55014AC	EGGS-YOLK ONLY	31 COOKED-FRESH OR CANNED		P 0.050000	0.003000		100.00	0.003000	
55014AC	EGGS-YOLK ONLY	00 NOT SPECIFIED (NO CONSUMPTION)		P 0.050000	0.030000		100.00	0.030000	
55015BA	CHICKEN-BYP	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55015LA	CHICKEN-ORGAN	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	
55015LA	CHICKEN-ORGAN	26 COOKED-FRESH-PICKLED, CORNED, OR CURED		P 0.050000	0.003000		100.00	0.003000	
55015MA	CHICKEN-W/O SKIN	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55015MA	CHICKEN-W/O SKIN	22 COOKED-FRESH-BAKED		P 0.050000	0.003000		100.00	0.003000	
55015MA	CHICKEN-W/O SKIN	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	
55015MA	CHICKEN-W/O SKIN	31 COOKED-FRESH OR CANNED		P 0.050000	0.003000		100.00	0.003000	
55015MA	CHICKEN-W/O SKIN	53 COOKED-CANNED-BOILED		P 0.050000	0.003000		100.00	0.003000	
55015MB	CHICKEN+SKIN	21 COOKED-NFS		P 0.050000	0.003000		100.00	0.003000	
55015MB	CHICKEN+SKIN	25 COOKED-FRESH-FRIED		P 0.050000	0.003000		100.00	0.003000	

TABLE 2

TOLERANCE ASSESSMENT SYSTEM ROUTING CHRONIC ANALYSIS

DATE: 03/02/92

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CHEMICAL INFORMATION		STUDY TYPE		EFFECTS		REFERENCE DOSES		DATA GAPS/COMMENTS		STATUS	
Naled (Dibrom) Caswell #586 CAS No. 300-76-5 A.I. CODE: 034401 CFR No. 180.215		2yr feeding- rat NOEL= LEL= ONCO: Negative- 2 species		Doses by gavage. Inhibi- tion of brain ChE, slight inhibition of RBC, plasma ChE at 10 mg/kg. No evi- dence of oncogenicity in rats or mice.		PADI UF -->100 OPP RfD= 0.002000 EPA RfD= 0.002000		Developmental tox- rabbit (Core-Supplementary) UF of 100 due to brain ChE inhibition.		HED complete 05/19/86. EPA verified 07/22/86. HED reassess 03/17/87. EPA verified 04/15/87. 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	
POPULATION SUBGROUP								ARC		%RFD	
U.S. POPULATION - 48 STATES				0.010464		0.010464		523.179400		0.000000 0.000566 28.31825	
U.S. POPULATION - SPRING SEASON				0.010478		0.010478		523.921950		0.000000 0.000575 28.76845	
U.S. POPULATION - SUMMER SEASON				0.010048		0.010048		502.392600		0.000000 0.000707 35.32580	
U.S. POPULATION - FALL SEASON				0.010485		0.010485		524.247350		0.000000 0.000483 24.15675	
U.S. POPULATION - WINTER SEASON				0.010831		0.010831		541.566800		0.000000 0.000499 24.93620	
NORTHEAST REGION				0.012565		0.012565		628.226200		0.000000 0.000600 30.00670	
NORTH CENTRAL REGION				0.010251		0.010251		512.566250		0.000000 0.000580 28.98360	
SOUTHERN REGION				0.008838		0.008838		441.892400		0.000000 0.000464 23.20870	
WESTERN REGION				0.010745		0.010745		537.242100		0.000000 0.000676 33.79105	
HISPANICS				0.013371		0.013371		668.553650		0.000000 0.000656 32.79120	
NON-HISPANIC WHITES				0.010092		0.010092		504.620850		0.000000 0.000581 29.02520	
NON-HISPANIC BLACKS				0.010973		0.010973		548.659300		0.000000 0.000423 21.12810	
NON-HISPANIC OTHERS				0.014806		0.014806		740.318500		0.000000 0.000620 30.98890	
NURSING INFANTS (< 1 YEAR OLD)				0.009590		0.009590		479.487650		0.001305 65.25610	
NON-NURSING INFANTS (< 1 YEAR OLD)				0.022845		0.022845		1142.246450		0.002523 126.17195	
FEMALES (13+ YEARS, PREGNANT)				0.008564		0.008564		428.175900		0.000452 22.60910	
FEMALES 13+ YEARS, NURSING				0.008802		0.008802		440.082000		0.000554 27.70535	
CHILDREN (1-6 YEARS OLD)				0.026015		0.026015		1300.766500		0.001084 54.18805	
CHILDREN (7-12 YEARS OLD)				0.015265		0.015265		763.271500		0.000804 40.18960	
MALES (13-19 YEARS OLD)				0.008995		0.008995		449.726000		0.000478 23.90480	
FEMALES (13-19 YEARS OLD, NOT PREG. OR NURSING)				0.008424		0.008424		421.201350		0.000454 22.68975	
MALES (20 YEARS AND OLDER)				0.006758		0.006758		337.924300		0.000403 20.17450	
FEMALES (20 YEARS AND OLDER, NOT PREG. OR NURS)				0.008130		0.008130		406.524400		0.000456 22.79310	

*Current TMRC does not include new or pending tolerances.

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