

**COMPARISON OF MALE AND FEMALE RAT
ORAL AND DERMAL LD50 VALUES
IN OPP'S ONE-LINER DATABASE**

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SUMMARY

Male and female LD50 values from acute oral and dermal studies in the rat were extracted from the Office of Pesticide Programs' (OPP) One-liner Database and compared to determine whether one sex was uniformly more sensitive in these types of tests. Results from 125 acute oral and 8 acute dermal studies on technical grade material or metabolites were analyzed. Comparison of the LD50 values found only 3 male LD50 values that were at least 1/2 of a log greater than the corresponding female LD50 value and 1 male LD50 value that was at least 1/2 of a log less than the corresponding female LD50 value. Comparison of the 95% confidence intervals for the LD50 values showed that in 14 cases no overlap of the confidence limits existed. In 11 of the 14 cases, the confidence interval of the male LD50 value was greater than the confidence interval of the female LD50 value, and in the remaining 3 cases, the male confidence interval was less than that of the females. However, comparison of the distribution of the male and female LD50 values revealed no significant differences. These data do not support the selection of either sex as a "uniformly most sensitive sex" for use in acute oral and dermal toxicity testing.

For most chemicals, acute oral and dermal toxicity tests are required for registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Only those manufacturing or end-use products that are highly volatile or corrosive substances that cannot be administered orally or dermally are exempted. Acute oral and dermal toxicity tests provide information on the health hazards associated with short-term oral and dermal exposure, give some information on the mechanisms underlying toxicity, and provide information useful for the design of longer-term studies. The results of these tests also serve as the basis for regulatory decisions such as whether to require use restrictions or special packaging or labeling.

Guidelines for acute oral and dermal testing have been developed by the Office of Pesticide Programs to provide registrants with information on the standards by which test results submitted to OPP for the purpose of registration under FIFRA will be evaluated.

The Health Effects Division of OPP is currently reevaluating and revising the pesticide assessment guidelines. As part of this process, public comment has been solicited. One issue that

was raised during the public comment period was the possibility of further reducing the number of animals required for these tests by identifying a most sensitive sex and conducting acute oral and dermal toxicity tests only, on that sex.

In order to evaluate the potential impact of single-sex testing, LD50 data from acute oral and dermal toxicity tests in OPP's One-liner Database were examined. OPP's One-liner Database contains a compilation of toxicity test results from over 30,000 studies on over 950 chemicals submitted to OPP over the past 7-12 years to support pesticide registrations under FIFRA. As such, the database contains a typical cross section of the range of acute oral and dermal toxicity test results likely to be submitted to OPP in the future.

METHODS

OPP's One-liner Database was searched and all acute oral and dermal toxicity study test results were extracted. The search was limited to studies on technical grade materials and metabolites. From this, male and female rat oral and dermal LD50 values (with their 95% confidence limits) from studies with core grade evaluations of minimum or guideline were extracted (Tables 1 and 2) and analyzed for sex-based differences. Only those studies with LD50 values for both males and females were used. In addition, only LD50 values expressed as discrete numerical values were used. LD50 values expressed as \leq or \geq a given number were not used. A study was not excluded if the 95% confidence interval was not presented. Statistical analysis of the data for differences between male and female LD50 values was performed using the Wilcoxin Rank Sum Test.

RESULTS AND DISCUSSION

A total of 125 paired acute oral LD50 values and 8 paired acute dermal LD50 values for male and female rats were extracted from the One-liner Database. Seventy-seven of the male and female oral LD50 values and 2 of the male and female dermal LD50 values were accompanied by their respective 95% confidence limits. The most direct approach for analyzing for potential differences between male and female LD50 data would have been to determine the number of

chemicals for which the male LD50 value for a chemical was significantly different from the female LD50 value for that chemical.

However, the One-liner Database did not contain this information. Therefore, the paired male and female LD50 values were examined for differences using a number of criteria. The first criteria used was to determine those male LD50 values that differed from the corresponding female LD50 values by % of a log or greater. A total of 4 out of 133 male LD50 values differed from the corresponding female LD50 values by this amount (Table 3). All 4 of the values were oral LD50 values. Three of the male oral LD50 values were 1/2 of a log greater than the corresponding female oral LD50 values and one was 1/2 of a log less.

The next criteria used for analyzing the LD50 data was to determine the number of male LD50 values with 95% confidence limits that fell outside the range defined by the 95% confidence limits from the corresponding female LD50 values. A total of 14 out of 79 male LD50 values had 95% confidence limits that met this criteria (Table 4 and Figure 1). All of these were from oral studies. In 11 cases, the range defined by the 95% confidence limits of the male value was greater than the range defined by the 95% confidence limits for the female LD50 value. In the remaining 3 cases, the range defined by the 95% confidence limits of the male LD50 values was less.

Finally, the distribution of male and female oral and dermal LD50 values was examined for differences. Figures 2-4 demonstrate the frequency distribution of extracted male and female LD50 values from oral and dermal studies and the combined oral and dermal data. Although males had slightly more high LD50 values than females, statistical analysis of the data showed no significant difference ($p > 0.3796$) between the distribution of male and female LD50 values.

These results demonstrate that neither sex can be identified as the uniformly most sensitive sex for use in acute toxicity testing of rats. In addition, the data examined suggest that the sexes are not equally sensitive to all of the chemicals tested. Analysis of the overlap of 95% confidence limits for paired male and female LD50 values suggests that in some cases males were more sensitive than females and in other cases the reverse was true. In approximately 14% (11/79) of the results, female rats appeared to be more sensitive than male rats, and in 4% (3/79) of the

results, males appeared to be more sensitive. This finding indicates that the choice of a single sex as representative of both sexes would also be unreliable. Thus, the proposed use of a single sex in acute toxicity tests, either because one sex is more sensitive or because both sexes are equally sensitive, cannot be supported by the data currently in the One-liner Database.

TABLE 1. RAT ORAL LD₅₀ DATA^a

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
241253	Acephate tech 97%	1400.00	ND ^c	ND	1000.00	ND	ND
40504833	Methylthioacetate 99.2% (structural analog)	426.00	349.00	523.00	519.00	420.00	750.00
258740	Flucythrinate	33.00	24.00	47.00	29.00	21.00	41.00
99807	Acetochlor MON 097	3712.00	2794.00	5297.00	2018.00	ND	ND
249878	MON-4620 technical	8762.00	4764.00	12760.00	6395.00	5691.00	7099.00
4072242	Ethiozin tech (90% pure) Batch 5-25-0023D	1115.00	ND	ND	59.00	ND	ND
71466	KWG 0519 (Baytan) Tech (92.7%)	689.00	571.00	831.00	752.00	647.00	874.00
246070	Bis(tri-n-butyltin)oxide (95%)	193.00	136.00	250.00	123.00	97.00	149.00
246070	Bis (tributyltin) oxide (Alkyl-sourced) (95%)	180.00	130.00	230.00	150.00	130.00	160.00
265147	Boric acid (100%)	5280.00	4630.00	6020.00	5830.00	4690.00	7230.00
247193	Bronopol (2-bromo-2-nitro-1,3-propanediol) Tech.	307.00	ND	ND	342.00	ND	ND
70894	Buctril	782.00	596.00	1026.00	793.00	500.00	1258.00
70894	Bromoxynil octanoate (Buctril)	720.00	596.00	1026.00	793.00	500.00	1258.00
148500	Carbaryl (99.0%)	302.60	272.00	336.50	311.50	280.50	345.90
4570701	Mevinphos Tech.	3.50	ND	ND	2.30	1.00	3.60
244164	Chloro-m-cresol Technical	5129.00	ND	ND	3636.00	ND	ND

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
247692	CGA-1223 tech (93+%)	118.68	99.23	141.95	48.21	40.94	56.77
41662409	SAN 582H Tech. (91.4% a.i.)	2139.80	1444.90	3168.90	1296.80	899.00	1871.50
73530	DPX-Y6202 (99.1%)	1670.00	ND	ND	1480.00	ND	ND
41206105	NC-302 (Levo minus S compound) (97% Assure)	1088.00	ND	ND	870.00	ND	ND
41206104	NC-302 (Dextro plus R cmpd) 97% (Assure)	1209.56	ND	ND	1181.75	ND	ND
72932	Anilino acid (98.6%)	424.00	382.00	471.00	346.00	310.00	385.00
259425	Cupric hydroxide (77%)	1330.10	1001.10	1768.00	682.60	332.90	1399.60
159371	Cupric hydroxide (77%)	2500.00	1714.00	3360.00	2200.00	1497.00	3234.00
261127	Copper oxychloride (94.1%)	1537.00	1319.00	1791.00	1370.00	1138.00	1649.00
248166	Cosan 145 Tech. (50% a.i.)	1950.00	1620.00	2420.00	1620.00	1270.00	1990.00
71466	KWG 0519 (Baytran) tech (92.7%)	689.00	ND	ND	752.00	ND	ND
40345406	Uniconazole (97.2%) [E/Z = 96.3/3.8; ES/ER = 79.2/20.8]	2020.00	1740.00	2340.00	1790.00	1490.00	2150.00
72008	Cyfluthrin Tech.	869.00	ND	ND	1271.00	ND	ND
41235004	Hexazinone tech (98% pure), white solid; A3674-207	1100.00	810.00	1800.00	1200.00	1000.00	2000.00
41776115	FMC 56701 Tech. (Cypermethrin S; 88.1% a.i.)	134.40	100.40	168.50	86.00	45.70	126.30
99855	Cypermethrin Tech, 53:47 cis-trans	247.00	187.00	329.00	309.00	150.00	500.00

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
41563908	CGA 163935 Tech. (96.6%)	4613.00	ND	ND	4212.00	ND	ND
40607713	Cyproconazole tech (95.7%)	1020.00	ND	ND	1330.00	ND	ND
249937	Fenpropathrin (91.8%)	70.60	53.70	92.70	66.70	50.60	87.90
249937	Fenpropathrin (97.3%)	164.00	115.00	234.00	107.00	69-80	164.00
401264	DTEA (2-Decylthioethane amine) (99.8%)	3940.00	3164.00	5556.00	2272.00	1361.00	3362.00
263861	Dicamba (3,6-dichloro-o-anisic Acid Tech.	3299.80	1849.60	5887.20	3604.00	3021.30	4299.00
73661	MON-4660(4-Dichloroacetyl-1- oxa- 4-azaspiro[4.5]decane) (94.97%)	2800.00	ND	ND	2400.00	ND	ND
251863	Diallate EC [S-(2,3-Dichlorallyl diisopropylthiocarbamate)	1256.00	961.00	1642.00	865.00	417.00	1149.00
150953	Dichlorocyanurate sodium salt tech.	2094.00	1555.00	2636.00	1671.00	1423.00	1962.00
253099	Isopropylester of 2,4-D Tech.	640.00	500.00	829.00	440.00	275.00	704.00
41164301	Sodium salt of 2,4-D	594.30	488.90	722.50	449.70	354.00	571.30
128854	2,4-DB (98%)	2.33	1.45	3.76	1.54	1.14	2.08
73192	RO 15-197/000 (99% pure)	3095.00	1990.00	4436.00	2864.00	1519.00	4033.00
41062506	Quinclorac (BAS 514 H Tech) Reg. # 150 732	3060.00	ND	ND	2190.00	ND	ND
5467	DDVP tech.	80.00	ND	ND	56.00	ND	ND
146179	Diazol Tech. (Diazinon)	775.00	583.00	967.00	499.00	363.00	635.00

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
246501	Diiodomethyl-para-tolyl-sulfone	15400.00	ND	ND	15400.00	. ND	ND
246798	Metacil 180 oil flowable	148.00	131.00	168.00	162.00	137.00	190.00
40583901	Dimethyl formamide tech (99.1%)	477.50	ND	ND	387.50	ND	ND
243414	Methyl parathion tech (after 1 year storage)	14.00	11.02	17.78	18.50	11.21	30.53
256258	NIRAN M/8 (80%) (AEML-05001)	10.00	ND	ND	15.00	ND	ND
40280101	Azinphos-methyl tech (85%)	9.00	7.20	11.40	6.70	5.60	7.90
261098	Bidrin (dicrotophos) tech. (88.3% a.i.)	11.00	ND	ND	8.00	ND	ND
248349	Diodine (98.9%)	1931.00	ND	ND	1117.00	ND	ND
70652	EL-919	7.20	6.70	7.70	9.30	8.88	9.72
71259	Isouron (94.4%)	613.00	ND	ND	484.00	ND	ND
40042106	1[[Bis(4-fluorophenyl)methyl- silyl]methyl]-1H,1,2,4-triazole (97%)	1110.00	1008.00	1222.00	674.00	563.00	765.00
40042106	INH-6573 tech (97%) Batch #	1110.00	ND	ND	674.00	ND	ND
249155	3,5-Dibromo-4-hydroxy- benzonitrile (94.0%) Inerts (6%)	81.	ND	ND	93.30	ND	ND
157590	Ethion tech (purity 98.8%)	191.00	ND	ND	21.00	ND	ND
255690	FMC 67825 (94.9%) (in corn oil)	47.50	40.30	54.70	30.10	26.50	33.80
72165	Cycloate Tech. (98.0%)	3200.00	2717.00	3769.00	2275.00	2066.00	2505.00

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
254690	Butylate Tech. (98.0%) Lot # GGC-0301	4850.00	ND	ND	4785.00	ND	ND
261729	EPTC tech	1465.00	1290.00	1663.00	1712.00	1324.00	2214.00
41379716	Flucycloxuron (PH 70-23 liq 25)	4061.00	ND	ND	4585.00	ND	ND
248473	FMC 54800 Tech. (91.4%)	70.10	57.07	83.13	53.80	48.88	58.72
265046	Flutriafol Tech. (93%) Batch P10,D2518/75	1140.00	880.00	1470.00	1480.00	1090.00	1980.00
40700917	HWG 1608 (97.1% a.i.) (Terbuconazole)	4264.00	3952.30	5330.20	3352.00	2341.40	3977.50
253165	Folpet tech (91.2% a.i.) (code SX-1346)	43800.00	35000.00	55600.00	19500.00	7500.00	51000.00
263525	Hexaconazole (PP523) (92.3% a.i.)	2189.00	1076.00	4083.00	6071.00	2283.00	0.00
257431	3-Iodo-2-propynyl butyl carbamate (99%)	1795.00	1437.00	2243.00	1065.00	783.00	1329.00
41013703	Chlorpropham Tech. (SX-1817) (99.7% pure)	4100.00	0.00	7000.00	4800.00	2900.00	7100.00
72853	S-(1,1-dimethyl)-o-ethyl-ethyl-phosphorothioate Tech. (93%)	3.90	3.20	4.60	2.10	ND	ND
263461	Butoxyethyl ester of 2-methyl-4-chlorophenoxyacetic acid (93.3%)	1000.00	ND	ND	785.00	ND	ND
245474	Vydate (97.1%) Inerts (2.9%)	3.10	2.60	3.50	2.50	2.40	2.70
364390	Methylisothiocyanate (97%)	82.00	43.00	155.00	55 00	12.00	99 00
264268	Zectran Tech. (90.5% a.i.)	8.51	ND	ND	9.12	ND	ND
72962	HOE 39866 (92.1% a.i.)	2000.00	1600.00	2490.00	1620.00	1190.00	1740.00

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
253414	NAK-1654 tech (97.2% pure)	85.00	69.00	101.00	87.00	69.00	106.00
247582	1-Sodium naphthyl acetate (95%)	1350.00	1120.00	1640.00	930.00	630.00	1380.00
248688	Paclobutrazol (97% pure)	1954.00	1147.00	4985.00	1336.00	837.00	1969.00
40521001	p-Dichlorobenzene	3863.00	3561.00	4153.00	3790.00	3425.00	4277.00
243412	Parathion Tech. (in corn oil)	10.80	6.75	15.12	2.52	1.33	4.76
248286	Pentachlorobenzene (99%)	1125.00	1015.00	1247.00	1080.00	ND	ND
40883711	Fortress (86% a.i.)	4.80	4.40	5.30	1.80	1.70	2.00
40667411	XRD-429 (Lot # AGR-185781) (98.8% purity)	3.20	ND	ND	1.10	ND	ND
73280	Pyridate Tech. (90.3% a.i.)	5993.00	3164.00	33610.00	3544.00	871.00	8848.00
248855	Sulfaquinoxaline Tech. (99.5%)	1370.00	940.00	1860.00	1600.00	1140.00	2100.00
40974507	RE-45601 tech (SX-1688) (83.3%)	1630.00	ND	ND	1360.00	ND	ND
72896	RH-53,866 Tech. (Lot # 83159-5) (91.9% pure)	1600.00	ND	ND	2290.00	ND	ND
259842	Gokilaht tech (93.6%)	318.00	219.00	463.00	419.00	281.00	624.00
259805	Karate (92.6% & 96%)	79.00	ND	ND	56.00	40.00	78.00
264268	Zectran tech (96.5% a.i.)	9.77	ND	ND	12.00	ND	ND
73203	Cyhalothrin - 94% pyrethoid, 97% cis-isomer	243.00	183.00	312.00	144.00	100.00	320.00

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
256581	Trophy tech	2479.00	ND	ND	2283.00	ND	ND
252599	Captafol Tech. (98.3%)	6780.00	ND	ND	6330.00	ND	ND
246326	Captafol (80%)	5600.00	4000.00	7700.00	3800.00	2400.00	6100.00
261401	PP93 tech	21.80	ND	ND	34.60	ND	ND
251666	Dazomet (99%)	596.00	ND	ND	415.00	ND	ND
246892	o,o,o,o-tetrapropyldithio- pyrophosphate (90%) Inerts (10%)	2800.00	2314.00	3388.00	740.00	623.00	879.00
247279	Thiabendazole (98.5%) [2-(4-thiazolyl)benzimidazole]	5070.00	3982.00	6389.00	4734.00	3371.00	6541.00
244531	2-(4-thiazolyl)bezimidazole (98.5%) (43410-T)	3970.00	2920.00	5400.00	3540.00	2140.00	5850.00
41127501	AO159 tech insecticide (98.0%) (2H-1,3-thiazine-tetrahydro-2 nitromethylene)	285.00	ND	ND	314.00	192.00	398.00
163854	Thiram tech (99.4%)	3700.00	ND	ND	1800.00	ND	ND
150959	Trichlorocyanurate Tech.	787.00	585.00	1059.00	868.00	622.00	1114.00
242367	Trichlopyr tech (Dow233) intubation in acetone/corn oil (1:9)	729.00	515.00	1127.00	630.00	450.00	829.00
73463	Triflumizole tech	1057.00	863.00	1297.00	1780.00	1369.00	2314.00
249422	Landrin tech (in corn oil)	125.00	ND	ND	134.00	ND	ND
71364	Triphenyltin hydroxide tech	165.00	113.00	230.00	156.00	115.00	208.00
252512	Triphenyltin hydroxide (96%)	165.00	ND	ND	156.00	ND	ND

TABLE 1. (Continued)

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
71811	Larvin tech (in corn oil)	84.10	61.50	115.00	50.00	34.90	71.70
/1811	Larvin tech (in methyl cellulose)	82.70	65.70	104.00	50.80	39.30	65.70
71811	Larvin tech (in methyl cellulose)	96.10	59.90	154.00	57.40	39.80	82.80
71811	Larvin tech (in methyl cellulose)	51.60	46.30	57.50	36.70	28.60	47.20
718111	Larvin tech (in methyl cellulose)	74.80	59.90	106.00	72.00	49.20	102.00
71811	Larvin tech (in methyl cellulose)	46.50	33.40	64.70	50.90	46.10	56.20
71811	Larvin tech (in methyl cellulose)	129.00	89.60	186.00	59.10	40.70	86.00
71811	Larvin tech (in methyl cellulose)	68.90	56.60	83.80	39.10	29.40	52.10
248139	U56215 Tech.	9098.00	ND	ND	7652.00	ND	ND
251418	Vitamin D3 tech	352.00	263.00	484.00	619.00	495.00	782.00
72330	SY-83 (L(+))Lactic acid)	4936	ED	ND	3543	ND	ND
248258	Haloxypop methyl (99.0%)	393	339	465	599	453	874
248473	FMC 57020 Tech. (88.8% a.i.) (Dimethazone)	2077	1976	2358	1369	1127	1611

^aData presented in mg/kg.^bMRID No., Master Record Identification Number A unique identifying number assigned to each document submitted to the Office of Pesticide Programs. The numbers listed identify the report of the Acute Toxicity Study from which the compound-related data were extracted.^cNo Data

TABLE 2. RAT DERMAL LD₅₀ DATA^a

MRID No. ^b	CHEMICAL NAME	MALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD ₅₀	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
261971	Methylthioacetate (SX-1500) (99% pure)	1590.00	ND ^c	ND	1580.00	ND	ND
40504836	Methylthioacetate (99.2%) (conaminant)	1920.00	1550.00	2390.00	1410.00	1140.00	1760.00
261971	Methylthioacetate (SX 1500) (99% pure) (conaminant)	1590.00	ND	ND	1580.00	ND	ND
40364203	Benazolin tech (97.6%) Batch CR16/343/3	2100.00	ND	ND	2100.00	ND	ND
5467	DDVP Tech.	107.00	ND	ND	75.00	ND	ND
261098	Bidrin (dicrotophos) tech (88.3% a.i.)	876.00	ND	ND	487.00	ND	ND
259805	Karate (92.6%)	632.00	300.00	900.00	696.00	309.00	1169.00
261401	FP993 Tech.	316.00	ND	ND	177.00	ND	ND

^aData presented in mg/kg.^bMRID No., Master Record Identification Number A unique identifying number assigned to each document submitted to the Office of Pesticide Programs. The numbers listed identify the report of the Acute Toxicity Study from which the compound-related data were extracted.^cNo Data

TABLE 3. CHEMICALS WITH MALE AND FEMALE LD₅₀ VALUES DIFFERING BY GREATER THAN 1/2 LOG^a

MRID No. ^b	CHEMICAL NAME	MALE LD50	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD50	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
40042106	1[[Bis(4-fluorophenyl)methyl-silyl]methyl]-1H,1,2,4-triazole (97%)	1110.00	1008.00	1222.00	674.00	563.00	765.00
157590	Ethion tech (purity 98.8%)	191.00	ND ^c	ND	21.00	ND	ND
243412	Parathion Tech (in corn oil)	10.80	6.75	15.12	2.52	1.33	4.76
246892	o,o,o,o-tetrapropylthiopyrophosphate (90%); Inerts (10%)	2800.00	2314.00	3388.00	740.00	623.00	879.00

^aData presented in mg/kg.^bMRID No., Master Record Identification Number A unique identifying number assigned to each document submitted to the Office of Pesticide Programs. The numbers listed identify the report of the Acute Toxicity Study from which the compound-related data were extracted.^cNo Data

TABLE 4. CHEMICALS WITHOUT OVERLAPPING MALE AND FEMALE LD₅₀ 95% CONFIDENCE LIMITS^a

MRID No. ^b	CHEMICAL NAME	MALE LD50	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT	FEMALE LD50	LOWER 95% CONFIDENCE LIMIT	UPPER 95% CONFIDENCE LIMIT
247692	CCA-123 tech (93+%)	118.68	99.23	141.95	48.21	40.94	56.77
70652	EL-919	7.20	6.70	7.70	9.30	8.88	9.72
40042106	1[[Bis(4-fluorophenyl)methyl- silyl]methyl]-1H,1,2,4-triazole (97%)	1110.00	1008.00	1222.00	674.00	563.00	765.00
255690	FMC 67825 94.9% (in corn oil)	47.50	40.30	54.70	30.10	26.50	33.80
72165	Cycloate Tech (98%)	3200.00	2717.00	3769.00	2275.00	2066.00	2505.00
248473	FMD 57020 Tech. (88.8% a.i.) (Dimethazone)	2077.00	1976.00	2358.00	1369.00	1127.00	1611.00
257431	3-Iodo-2-propynyl butyl carbamate (99%)	1795.00	1437.00	2243.00	1065.00	783.00	1329.00
243412	Parathion Tech (in corn oil)	10.80	6.75	15.12	2.52	1.33	4.76
40883711	Fortress (86% a.i.)	4.80	4.40	5.30	1.80	1.70	2.00
246892	o,o,o,o-tetrapropylthiopyro phosphate (90%); Inerts (10%)	2800.00	2314.00	3388.00	740.00	623.00	879.00
73463	Tiflumizole tech	1057.00	863.00	1297.00	1780.00	1369.00	2314.00
71181	Larvin Tech. (in methyl cellulose)	129.00	89.60	186.00	59.10	40.70	86.00
71181	Larvin Tech. (in methyl cellulose)	68.90	56.60	83.80	39.10	29.40	52.10
251418	Vitamin D3 Technical	352.00	263.00	484.00	619.00	495.00	782.00

^aData presented in mg/kg.^bMRID No., Master Record Identification Number A unique identifying number assigned to each document submitted to the Office of Pesticide Programs. The numbers listed identify the report of the Acute Toxicity Study from which the compound-related data were extracted.^cNo Data

Figure 1
Comparison of Overlap of 95%
Confidence Limits of Oral and Dermal
LD₅₀ Values

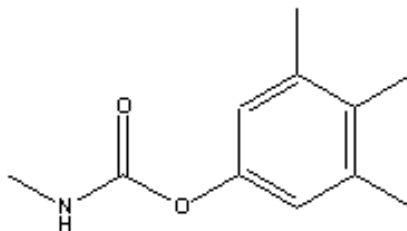


Figure 2
LD₅₀ Frequencies, Oral Dosing

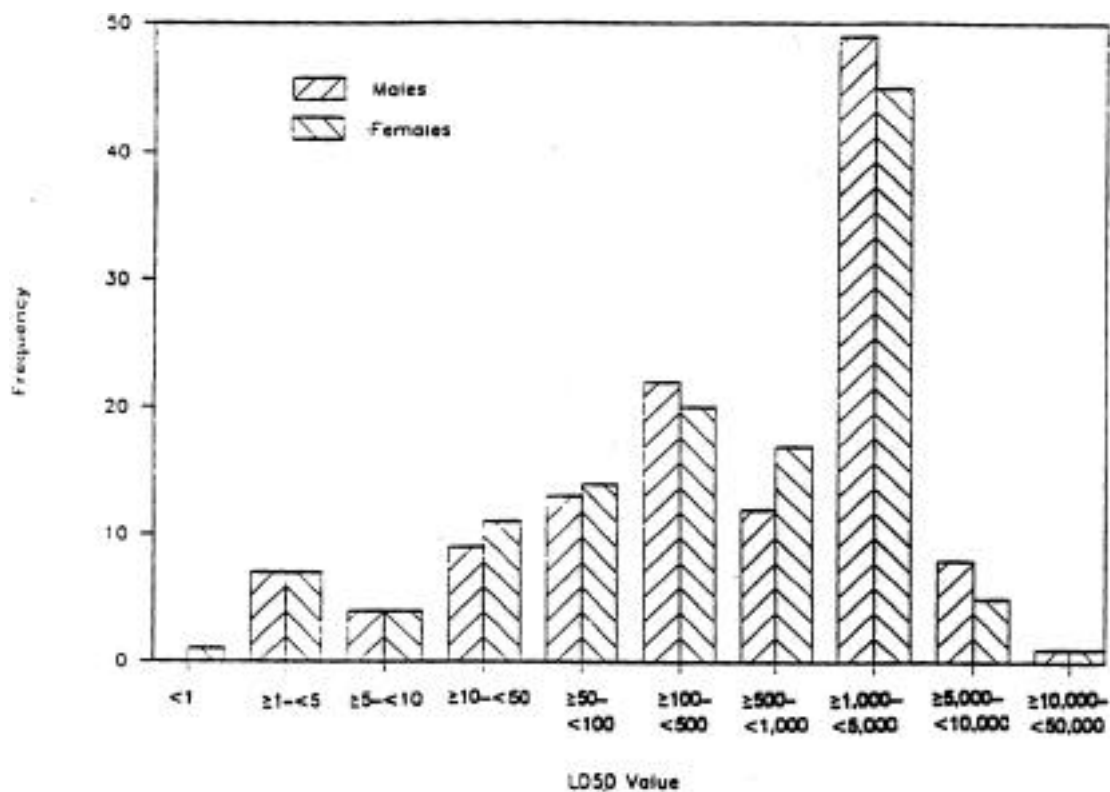


Figure 3
LD₅₀ Frequencies, Dermal Dosing

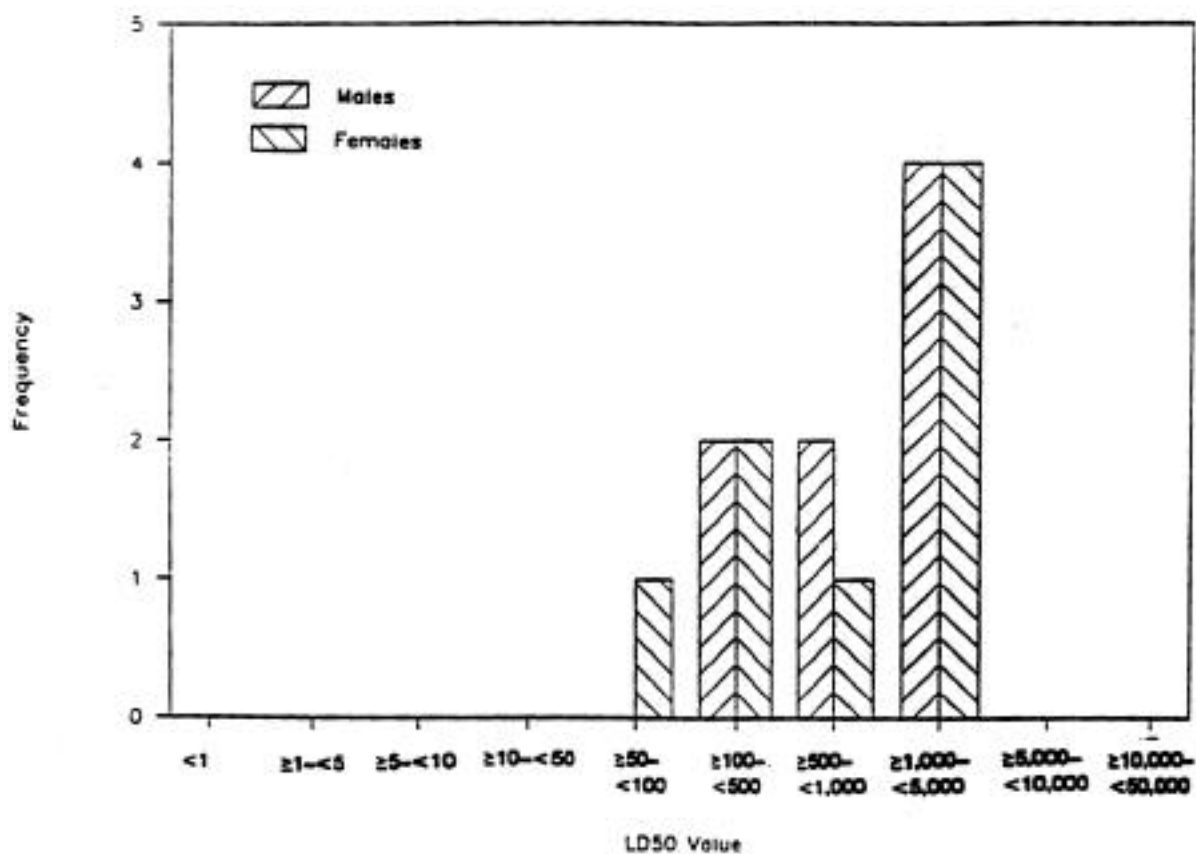


Figure 4**LD₅₀ Frequencies, Combined Dosing Data**