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LABORATORY TESTS WITH CANDIDATE BAIT TOXICANTS AGAINST THE IMPORTED FIRE ANT

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During the course of an extensive search for an effective toxic bait for control of the imported fire ant, Solenopsis saevissima richteri (Forel), tests were conducted with a large number of chemicals. Lofgren and others[4/] reported on mirex (GC-1283)--the most promising of the toxicants tested to date. Stringer and coworkers[5/] described test procedures for evaluating toxicants. They pointed out that an effective toxicant must (1) possess the quality of a delayed killing action over at least a tenfold dosage range and preferably above a hundredfold dosage range, (2) be readily transferred from one ant to another and result in mortality of the recipient, and (3) not be repellent to ants.

Since most toxicants used in insect control programs require fast kill to reduce crop damage, it is understandable that most of the commercially available insecticides do not meet these requirements of a bait toxicant. However, because of the urgency for finding an effective bait toxicant, most of the commercially available insecticides were evaluated in a quantitative screening program. This report presents the results obtained in laboratory toxic bait tests with 334 candidate toxicants.

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4/ Lofgren, C. S., Stringer, C. E., and Bartlett, F. J. Imported fire ant toxic bait studies: GC-1283, a promising toxicant. J. Econ. Entomol. 55: 405-407. 1962.

5/ Stringer, C. E., Lofgren, C. S., and Bartlett, F. J. Imported fire ant toxic bait studies: Evaluation of toxicants. J. Econ. Entomol. 57: 941-945. 1964.

Procedures

The test chamber consisted of a modification of a commercially available small plastic flower pot with a rim (16 mm. in height and 63 mm. in diameter) at the top and three holes in the bottom. Immediately below the rim the diameter is reduced to 58 mm.; thus, the rim has a ridge 2.5 mm. wide. The pot tapers to 42 mm. at the bottom. The bottom is covered with a 1/4-inch layer of plaster of paris mixed with builder's cement (9 to 1 ratio). The cement-plaster of paris mixture is necessary to prevent the ants from constructing tunnels and escaping. Sufficient water is absorbed through the plaster of paris when the pots are placed on wet peat moss to provide required moisture essential for survival of the ants. The tops of the pots are covered with small plate glass disks that rest on the ridge between the rim and the tapered sides.

The ants used in the tests were collected in the field from the same general locality. The colony and a part of the mound were held in the laboratory in large galvanized tubs. Preliminary feeding tests were conducted during a 3-day holding period to ascertain that the colony had not been overfed or starved. Twenty worker ants were placed in each test chamber the afternoon preceding the day of the test. The pretreatment transfer permitted time for recovery from effects of the CO_2 (used for immobilization) and for orientation to the container. The candidate insecticides, depending on the solubility of the chemical, were dissolved directly in the food material; that is, in peanut oil, peanut butter, or 10 percent sucrose solution. The toxic bait was offered to the ants on cotton plugs saturated with the material and placed in small vial lids. Chemicals insoluble in any of these baits were dissolved in acetone and admixed with peanut butter; the acetone was evaporated and the mixture placed in vial lids. In preliminary tests all chemicals were tested at concentrations of 1.0, 0.1, and 0.01 percent. All chemicals that gave complete kill at the lowest dosage were further tested until the lowest concentration that gave complete kill was determined.

Two procedures were followed in the evaluation of the toxicants:

1. The ants were allowed to feed as desired on the toxic bait for the entire 192-hour test period. Eight knockdown and mortality counts were made at 24-hour intervals.

2. The ants were allowed to feed as desired on the toxic bait during the first 24 hours. After this initial exposure period, the vial lids containing toxicants were removed from the cups, and the ants were kept without food for 24 hours. At the end of this period, new vial lids with peanut oil were placed in each chamber and left there for the remainder of the test. Eight knockdown and mortality counts were made at intervals of 1, 2, 3, 6, 8, 10, 13, and 14 days after exposure.

The change from test procedure 1 to procedure 2 was made to increase the certainty that any delayed kill observed was due to ingestion of the bait and that toxicants with a long delayed action would not be missed.

Bait toxicants were classified according to their effectiveness by the following system. Delayed toxicity is defined as less than 15 percent mortality after 24 hours and more than 89 percent mortality at the end of the test period.

Class I.--Compounds that give insufficient kill at the preliminary test concentrations (less than 90 percent kill at the end of the test period).

Class

Ia -- Maximum kill 0 to 29 percent.
Ib -- Maximum kill 30 to 59 percent.
Ic -- Maximum kill 60 to 89 percent.

Class II.--Compounds that kill too fast at the higher concentrations but give insufficient kill at the lower concentrations; that is, 15 percent or more kill after 24 hours and 90 to 100 percent at the end of the test period at the higher concentrations but less than 90 percent kill with the lower concentrations at the end of the test period.

Class

IIa -- Produced fast kill at 1.0 percent.
IIb -- Produced fast kill at 0.1 and 1.0 percent.
IIc -- Produced fast kill at 0.01, 0.1, and 1.0 percent.

Class III.--Compounds that show delayed action over a onefold to ninefold dosage range.

Class

IIIa -- Delayed action occurred between 0.25 to 1 percent.
IIIb -- Delayed action occurred between 0.025 to 0.1 percent.
IIIc -- Delayed action occurred between 0.0025 to 0.01 percent.

Class IV.--Compounds that show delayed action over a tenfold to ninety-ninefold dosage range.

Class V.--Compounds that show delayed action over a hundredfold or greater dosage range.

Results

The toxicants tested are listed in table 1. The mortality class is shown for each compound and the type of test used with each toxicant is also indicated in the table. A total of 334 chemicals were evaluated. The number in each class was as follows: Ia, 46; Ib, 52; Ic, 58; IIa, 35; IIb, 43; IIc, 15; IIIa, 22; IIIb, 22; IIIc, 33; IV, 7; and V, 1.

Table 1.--Toxicity of 334 compounds in baits to imported fire ants
(®indicates a registered trademark)

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
1	20871	Acetaldehyde, 2-(2-ethoxyethoxy)ethyl 3,4-(methylenedioxy)phenyl acetal	sesamex	IIIa	1
2	27040	Acetamide, N-(1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-2-hydroxy-1,3,4-metheno-2H-cyclobuta[cd]pentalen-2-yl)-	Hooker HRS-1362	IIIb	2
3	32530	o-Acetanisidide, 2,2-dichloro		Ib	2
4	25368	Acetic acid, arsono-,trisodium salt		Ib	3/1
5	19741	Acetic acid, chloro-, pentachlorophenyl ester		Ib	2
6	23376	Acetic acid, chloro-, 2,3,4,6-tetrachlorophenyl ester		Ib	2
7	13006	m-Acetotoluidide, alpha,alpha,alpha-trifluoro-		IIIa	1
8	26187	m-Acetotoluidide, alpha,alpha,alpha-trifluoro-4'-nitro-		Ia	4/1
9	17670	o-Anisidine, 5-(ethylsulfonyl)-		Ic	2
10	26180	Anthranilic acid, ester with ethyl lactate	Maumee SD-5332	Ia	1
11	25367	Arsenomethane, disulfide		Ia	3/1
12	25369	Arsine oxide, hydroxydimethyl-	cacodylic acid	Ic	3/1
13	9770	Benzamide, 3,4-dichloro-N-methyl-		Ib	2
14	10009	Benzene, o-dibromo-		Ib	2
15	1835	Benzene, 1,2,4,5-tetrachloro-		IIIb	2
16	16050	Benzenearsonic acid		Ib	3/2
17	14867	Benzenearsonic acid, p-hydroxy-		Ic	3/2
18	16538	Benzenesulfonic acid, p-chloro-, p-chlorophenyl ester	ovex	Ia	4/1
19	9624	Benzhydrol, 4,4'-dichloro-alpha-methyl-	Dimite®	Ia	4/1
20	23648	Benzhydrol, 4,4'-dichloro-alpha-(trichloromethyl)-	dicofol	Ia	4/1
21	18596	Benzilic acid, 4,4'-dichloro-, ethyl ester	chlorobenzilate	Ib	1
22	26181	Benzoic acid, o-mercapto-, methyl ester		Ib	1
23	488	Benzonitrile, p-bromo-		Ic	2
24	26209	1,2,3-Benzotriazin-4(3H)-one, 3-butyl-		Ic	1
25	25718	Bi-2,4-cyclopentadien-1-yl, decachloro-	Pentac	Ia	2
26	18065	Butane, 1,1-bis(p-chlorophenyl)-2-nitro-	Bulan ®	Ib	1

27	18066	Butane, 1,1-bis(p-chlorophenyl)-2-nitro-, and 1,1-bis(p-chlorophenyl)-2-nitropropane (2 to 1 ratio)	Dilan®	Ic	1
28	25366	1-Butanearsonic acid		Ic	3/2
29	20852	Butyric acid, ester with dimethyl (2,2,2-trichloro-1-hydroxyethyl)phosphonate	butonate	IIIa	1
30	25661	Carbamic acid, 2-mercaptoethyl ester, S-ester with O,O-diethyl phosphorodithioate	Stauffer R-2968	IIIb	1
31	25968	Carbamic acid, butyl-, 2[(mercaptomethyl)thio]=ethyl ester, S-ester with O,O-dimethyl phosphorodithioate	Stauffer R-5977	IIa	2
32	24728	Carbamic acid, dimethyl-, ester with 3-hydroxy-5,5-dimethyl-2-cyclohexen-1-one	dimetan	Ic	1
33	25922	Carbamic acid, dimethyl-, ester with 3-hydroxy-N,N-trimethylpyrazole-1-carboxamide	dimetilan	Ic	2
34	19060	Carbamic acid, dimethyl-, 1-isopropyl-3-methylpyrazol-5-yl ester	Isolan®	Ic	2
35	19059	Carbamic acid, dimethyl-, 6-methyl-2-propyl-4-pyrimidinyl ester	Pyramat®	Ic	2
36	24977	Carbamic acid, dimethyl-, tetrahydrofurfuryl ester	Hercules AC-5199	Ic	1
37	25969	Carbamic acid, ethyl-, 2[(mercaptomethyl)thio]=ethyl ester, S-ester with O,O-dimethyl phosphorodithioate	Stauffer R-6032	IIa	2
38	25801	Carbamic acid, (2-mercaptoethyl)-, ethyl ester, S-ester with O,O-dimethyl phosphorodithioate	Stauffer R-3422	IIIb	1
39	27041	Carbamic acid, methyl-, benzo[b]thién-4-yl ester	Mobam®	Ic	2
40	25711-X	Carbamic acid, methyl-, 2-,4-, and 6-chloro-m-cumenyl esters, a mixture of isomers	Hercules 7522	IIa	1
41	25763	Carbamic acid, methyl-, 6-chloro-m-cumenyl ester	Hercules 7522H	Ic	1
42	25736	Carbamic acid, methyl-, 6-chloro-3,4-xylyl ester	Banol®	IIb	1
43	25500	Carbamic acid, methyl-, m-cumenyl ester	Union Carbide UC-10854	IIb	1
44	27109	Carbamic acid, methyl-, 4-(diallylamino)-3,5-xylyl ester	Bayer 50282	IIb	2
45	27164	Carbamic acid, methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	Niagara NIA-10242	Ib	2
46	25780	Carbamic acid, methyl-, 3,5-diisopropylphenyl ester	Hooker HRS-1422	Ic	1

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
47	25784	Carbamic acid, methyl-, 4-(dimethylamino)-m-tolyl ester	Matacil®	IIIa	1
48	25766	Carbamic acid, methyl-, 4-(dimethylamino)-3,5-xylyl ester	Zectran®	IIa	1
49	25967	Carbamic acid, methyl-, 2[(mercaptomethyl)thio]=ethyl ester, S-ester with O,O-dimethyl phosphorodithioate	Stauffer R-5976	IIa	2
50	27157	Carbamic acid, methyl-, o-[1-(methoxymethyl)=allyl]phenyl ester	Hooker HRS-1631	Ic	2
51	25777	Carbamic acid, methyl-, 4-(methylthio)-m-tolyl ester	Bayer 32651	IIb	4/1
52	25726	Carbamic acid, methyl-, 4-(methylthio)-3,5-xylyl ester	Bayer 37344	Ic	1
53	23969	Carbamic acid, methyl-, 1-naphthyl ester	carbaryl	IIb	1
54	25732	Carbamic acid, methyl-, m-(2-propynyloxy)phenyl ester	Hercules 8717	IIb	1
55	25810	Carbamic acid, methyl-, o-(2-propynyloxy)phenyl ester	Hercules 9699	IIb	1
56	9735	Chlorinated camphene, chlorine content of 67-69%	toxaphene	IIIb	1
57	10027	Cinnamic acid, alpha-acetyl-, methyl ester		Ic	2
58	18869	Coumarin, 7-(diethylamino)-4-methyl-		IIIa	2
59	26185	m-Cresol, alpha,alpha,alpha-trifluoro-		Ia	1
60	10052	p-Cresol, 2-allyl-		Ib	2
61	10054	p-Cresol, 2-allyl-, acetate		Ib	2
62	10060	p-Cresol, 2-propenyl-		Ic	2
63	10064	p-Cresol, 2-propenyl-, acetate		Ib	2
64	10059	p-Cresol, 2-propyl-		Ia	2
65	10061	p-Cresol, 2-propyl-, acetate		Ib	2
66	24654	Crotonic acid, 3-hydroxy-, benzyl ester, dimethyl phosphate	Shell SD-4092	IIIa	1
67	22374	Crotonic acid, 3-hydroxy-, methyl ester, dimethyl phosphate	mevinphos	IIc	1
68	152	2,5-Cyclohexadien-1-one, hexachloro-		IIIc	2

69	9625 (8970)	2,5-Cyclohexadien-1-one, 4-methyl-4-(trichloromethyl)-		Ic	2
70	17729	Cyclohexane, 1,2-dichloro-4-(1,2-dichloroethyl)-		Ic	2
71	17731	Cyclohexene, 4-(1,3,3,3-tetrachloropropyl)-		Ic	2
72	27085	Cyclopropane, 1,1-dichloro-2,2-bis(p-chlorophenyl)-	General Chem. GC-6593	Ib	2
73	21195	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 6-bromopiperonyl ester		Ic	1
74	21557	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 6-chloropiperonyl ester	barthrin	IIIa	1
75	21825	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 3,4-dimethylbenzyl ester		Ia	1
76	50125	2-Decenoic acid, 9-oxo-, trans-		Ic	1
77	15153	4,9:5,8-Dimethano-1H-benz[f]indene, 5,6,7,8,11,11-hexachloro-3a,4,4a,5,8,8a,9,9a-octahydro-	Velsicol 49-CS-53	Ia	2
78	17251	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,endo-	endrin	IIIb	1
79	16225	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo-exo-	dieldrin	IIc	1
80	15949	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-	aldrin	IIIc	2
81	23392	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,6,9,10,10-octachloro-1,4,4a,5,6,7,8,8a-octahydro-	Shell SD-2653	Ic	1
82	25582	1,4:5,8-Dimethanophthalazine, 5,6,7,8,9,9-hexachloro-1,4,4a,5,8,8a-hexahydro-, 2-oxide	Shell SD-3450	IIa	1
83	32522	m-Dioxane, 2-(3-cyclohexen-1-yl)-5,5-diethyl-		Ib	2
84	25022-X	Disulfide, p-chlorophenyl trichloromethyl, reaction product with triethyl phosphite	Monsanto CP-7768 (mixture of CP-7769 and CP-8810 - equimolar)	IIa	1
85	22376	5,8-Epoxy-1,4-methanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-	Shell 52-RL-45	IV	2
86	22377	2,7-Epoxy-3,6-methanooxireno[b]naphthalene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-	Shell 52-RL-71	IV	2
87	4224	Ethane, 1,1-dibromo-2,2-bis(p-bromophenyl)-		Ib	2
88	4223	Ethane, 1,1-dibromo-2,2-bis(p-chlorophenyl)-		Ia	2

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
89	4225	Ethane, 1,1-dichloro-2,2-bis(p-chlorophenyl)-	TDE	Ia	1
90	4221	Ethane, 1,1,1-tribromo-2,2-bis(p-bromophenyl)-		Ib	2
91	4222	Ethane, 1,1,1-tribromo-2,2-bis(p-chlorophenyl)-		Ia	2
92	8372	Ethane, 1,1,1-trichloro-2,2-bis(5-chloro-2-methoxyphenyl)-		Ib	2
93	8379	Ethane, 1,1,1-trichloro-2,2-bis(3,5-dichloro-2-methoxyphenyl)-		Ic	2
94	8378	Ethane, 1,1,1-trichloro-2,2-bis(3,5-dichloro-4-methoxyphenyl)-		Ic	2
95	8373	Ethane, 1,1,1-trichloro-2,2-bis(2,5-dimethoxyphenyl)-		Ib	2
96	8374	Ethane, 1,1,1-trichloro-2,2-bis(3,4-dimethoxyphenyl)-		Ib	2
97	7576	Ethane, 1,1,1-trichloro-2,2-bis(p-fluorophenyl)-	DFDT	Ia	2
98	1716	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-	methoxychlor	Ia	2
99	4847	Ethane, 1,1,1-trichloro-2-(m-chlorophenyl)-2-(p-chlorophenyl)-		Ib	2
100	3983	Ethane, 1,1,1-trichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)-	o,p'-DDT	Ia	2
101	1718	Ethane, 1,1,1-trichloro-2,2-di-p-tolyl-		Ib	2
102	17635	Ethanol, 2-(allyloxy)-		Ib	2
103	10051	Ether, allyl p-tolyl		Ib	2
104	11671	Ether, benzyl 3-phenylpropyl		Ib	2
105	2160	Ether, 2-biphenylyl butyl		Ia	2
106	25456	Ether, bis(2,3,3,3-tetrachloropropyl)	octachlorodipropyl ether	Ib	1
107	10010	Ether, alpha-(bromomethyl)benzyl propyl		Ib	2
108	18170	Ether, p-tert-butylphenyl phenyl		Ib	2
109	10019	Ether, p-chloro-alpha-methylenebenzyl methyl		Ib	2
110	10026 (1089)	Formanilide		Ic	2
111	24832	Glutaconic acid, 3-hydroxy-, dimethyl ester, diethyl phosphate	General Chem. GC-3661	IIb	1
112	24833	Glutaconic acid, 3-hydroxy-, dimethyl ester, dimethyl phosphate	Bomyl®	IIa	1

113	27155	Glycine, N-carboxy-, N-(1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[cd]pentalen-2-yl) ethyl ester	General Chem. GC-8266	IIIb	2
114	26610	Hexamethylenimine		IIa	2
115	26895-X	Hi-Viz fluorescent printing pigment (red orange)		Ic	2
116	25619	Hydrazine, 1-(1-naphthyl)-2-sulfinyl-	Bayer 31956	Ia	1
117	24703	Imidazole		Ic	2
118	25809	Imidocarbonic acid, (diethoxyphosphinothioyl)=dithio-, cyclic ethylene ester	Amer. Cyan. 43064	IIIc	2
119	1946	1,3-Indandione, 2-pivaloyl-	pivalyl valone	Ia	1
120	10007	Mesoxalic acid, diethyl ester		Ib	2
121	9103	Methane, bis(p-chlorophenyl)-		Ib	2
122	24981-X	Methanearsonic acid, disodium salt (60%), mixture with sodium chloride (22%) and arsenic oxide (0.5%) in water	Ansul 100	Ic	3/2
123	27062	6,9-Methano-2,4-benzodioxepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-	Hooker HB-18	Ia	2
124	27064	6,9-Methano-2,4-benzodioxepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-3-isopropyl-	Hooker HB-20	Ia	2
125	25700-X	6,9-Methano-3H-2,4-benzodioxepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-3-methyl-, chlorinated to contain 70% total chlorine	Bayer 38920	IIIc	1
126	27063	6,9-Methano-2,4-benzodioxepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-3-phenyl-	Hooker HB-19	Ib	2
127	15156	4,7-Methanoindan, 1,2-dibromo-4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-	Velsicol 52-CS-64	IV	2
128	25584	4,7-Methanoindan, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-	heptachlor epoxide	IIc	1
129	17713	4,7-Methanoindan, 4,5,6,7,8,8-hexachloro-1,2-epoxy-3a,4,7,7a-tetrahydro-	Velsicol 49-CS-56	Ic	2
130	27001	4,7-Methanoindan, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-	Velsicol 47-CS-116	Ib	2
131	27005	4,7-Methanoindan, 1,2,3,4,5,6,7,8,8-nonachloro-3a,4,7,7a-tetrahydro-	nonachlor	IV	2
132	9932	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-	chlordane	IIIb	1
133	25960	4,7-Methanoindene, 1-bromo-4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-	1-bromochlordene	IIIb	1

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
134	27056	4,7-Methanoindene, dodecachloro-3a,4,7,7a-tetrahydro-	Hooker HB-11	Ic	2
135	15152	4,7-Methanoindene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	heptachlor	IIIc	1
136	25562	4,7-Methanoindene, 4,5,6,7,8,8-hexachloro-1-fluoro-3a,4,7,7a-tetrahydro-	1-fluorochlordene	IIIc	1
137	15150	4,7-Methanoindene, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-	Velsicol 48-CS-99	Ib	2
138	27002	4,7-Methanoinden-1-ol, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-	1-hydroxychlordene	Ib	2
139	27003	4,7-Methanoinden-1-ol, 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro-, acetate	Velsicol 48-CS-35	Ic	2
140	24880	4,7-Methanoisobenzofuran, 1,3,4,5,6,7,8,8-octachloro-1,3,3a,4,7,7a-hexahydro-	isobenzan	IIIc	1
141	27004	1,4-Methanonaphthalene-5,8-diol, 1,2,3,4,9,9-hexachloro-1,4-dihydro-	Velsicol 48-CS-36	Ib	2
142	25719	1,3,4-Metheno-2H-cyclobuta[cd]pentalene, dodecachlorooctahydro-	mirex	V	1
143	27154	1,3,4-Metheno-2H-cyclobuta[cd]pentalene-2-levulinic acid, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-2-hydroxy-, ethyl ester	General Chem. GC-9160	IIa	2
144	27153	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-ol, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-2-methyl-	General Chem. GC-9287	IIIb	2
145	16391	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, decachlorooctahydro-	Kepone®	IV	1
146	27055	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, decachlorooctahydro-, compound with diphenyl phosphite	Hooker HB-10	Ic	2
147	25274-X	Methyl sulfide (40% by volume in Deobase)		Ic	1
148	25767	4-Morpholineacetonitrile, alpha-methyl-	Wyandotte W-24	Ic	1
149	17611	Naphthalene, 2,3,6-trimethyl-		Ib	2
150	17448	1-Naphthol, 2,4-dichloro-, acetate		Ic	2

151	25487	Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-hexadecafluoro-		IIIa	2
152	23782	1-Nonanol, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-hexadecafluoro-		IIIa	2
153	27054	2,5-Norbornadiene, 1,2,3,4,7,7-hexachloro-5,6-bis(chloromethyl)-	Hooker HB-8	Ia	2
154	27007	2-Norbornene, 5-[(allylthio)methyl]-1,2,3,4,7,7-hexachloro-	Velsicol 52-CS-53	Ia	2
155	23393	2-Norbornene, 5-(bromomethyl)-1,2,3,4,7,7-hexachloro-	Shell SD-2774	IIIb	1
156	27053	2-Norbornene, 1,2,3,4,7,7-hexachloro-5,6-bis(chloromethyl)-	Hooker HB-7	Ia	2
157	23394	2-Norbornene, 1,2,3,4,7,7-hexachloro-5-(chloromethyl)-	Shell SD-2801	IIa	1
158	23447	2-Norbornene, 1,4,5,6,7,7-hexachloro-5-(dichloromethyl)-	Hercules 426	IIa	1
159	27006	2-Norbornene, 1,2,3,4,7,7-hexachloro-5-phenyl-	Velsicol 49-CS-51	Ia	2
160	23979	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro-, cyclic sulfite	endosulfan	Ia	1
161	5734	9-Octadecenylamine, N,N-dimethyl-	Armour ARD-198	Ia	1
162	26663-X	Oleamide, N,N-dimethyl- (80%), mixture with related amides (20%)	Hallcomid M-18-OL	Ia	2
163	25525	1-Oxaspiro[4.4]nona-6,8-diene, 2,3,6,7,8,9-hexachloro-	Velsicol 57-CS-41	Ia	1
164	26839	Oxazole Fluorescor A		IIIa	2
165	24978	3-Pentenoic acid, 4-hydroxy-, methyl ester, dimethyl phosphate	Newphos #1	Ib	1
166	17499	3-Phenanthrylamine		Ib	2
167	17446	Phenol, o-cyclohexyl-, acetate		Ib	2
168	17447	Phenol, p-cyclohexyl-, acetate		Ia	2
169	25768	Phenol, 2,6-di-tert-butyl-4-nitro-, compound with butylamine	Bayer 41522	Ic	1
170	17440	Phenol, p-(alpha,alpha-dimethylbenzyl)-, p-toluenesulfonate		Ic	2
171	134	Phenol, pentachloro-	pentachlorophenol	Ic	2
172	17304	Phenol, pentachloro-, acetate		IIIb	2
173	17651	Phenol, 2,2'-thiobis[4-tert-butyl-		Ia	2
174	9772	Phenol, 4,4'-(2,2,2-trichloroethylidene)bis[2,6-dichloro-		Ib	2

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations 1/	Mortality class	Type test 2/
175	38	Phenothiazine		Ic	2
176	37	Phenoxathiin		Ib	2
177	25609	Phosphinothioic acid, dimethyl-, O-[4-(methylthio)-m-tolyl] ester	Bayer 34098	IIc	4/1
178	24952	Phosphonic acid, carbonyldi-, tetraethyl ester, ethyl phenyl mercaptole	Monsanto CP-12376	IIIa	1
179	27065	Phosphonic acid, (chloromethyl)-, cyclic diester with 1,4,5,6,7,7-hexachloro-5-norbornene-2,3-dimethanol	Hooker HB-21	Ia	2
180	24831	Phosphonic acid, [1-(difluoromethyl)-2,2-difluoro-1-hydroxyethyl]-, diethyl ester	General Chem. GC-3562	IIc	1
181	24830	Phosphonic acid, [1-(difluoromethyl)-2,2-difluoro-1-hydroxyethyl]-, dimethyl ester	General Chem. GC-3561	IIc	1
182	24044	Phosphonic acid, (dithiodimethylene)di-, tetramethyl ester	Monsanto CP-8574	IIa	1
183	24695	Phosphonic acid, [(ethylthio)methylidyne]tri-, hexaethyl ester	Monsanto CP-7769	IIa	1
184	24953	Phosphonic acid, (1-hydroxyvinyl)-, dimethyl ester, diethyl phosphate	Monsanto CP-12432	IIa	1
185	24415	Phosphonic acid, (1-hydroxyvinyl)-, dimethyl ester, dimethyl phosphate	Monsanto CP-10502	IIa	1
186	24950-X	Phosphonic acid, [[(mercaptomethyl)dithio]=methyl]-, O,O-diethyl ester, ethylxanthate (50% solution in bis(chloromethyl)sulfide)	Monsanto CP-11901	IIb	1
187	24951	Phosphonic acid, (mercaptomethylidyne)tri-, hexaethyl ester, S-ester with O,O-diethyl phosphorothioate	Monsanto CP-11447	IIIa	1
188	19763	Phosphonic acid, (2,2,2-trichloro-1-hydroxy=ethyl)-, dimethyl ester	trichlorfon	IIIb	1
189	25835	Phosphonodithioic acid, (chloromethyl)-, O-ethyl S-p-tolyl ester	Stauffer B-10190	IIa	2
190	25765	Phosphonodithioic acid, ethyl-, S-p-tert-butylphenyl O-ethyl ester	Stauffer N-3051	IIIb	1

191	27013	Phosphonodithioic acid, ethyl-, O-ethyl ester, S-ester with N-(2-mercaptoethyl)dimethane= sulfonamide	Stauffer N-4171	IIb	2
192	25713	Phosphonodithioic acid, ethyl-, O-ethyl S-p-tolyl ester	Stauffer N-2788	IIIc	1
193	27015	Phosphonodithioic acid, ethyl-, O-isobutyl ester, S-ester with N-(mercaptomethyl)= phthalimide	Stauffer N-4543	IIb	2
194	25980	Phosphonodithioic acid, methyl-, S,S-dipropyl ester	V-C 3-676	IIa	2
195	25995	Phosphonodithioic acid, methyl-, O-methyl ester, S-ester with 2-mercapto-N,N-dimethylpropionamide	Bayer 51580	IIb	2
196	25977	Phosphonodithioic acid, methyl-, O-methyl ester, S-ester with 2-mercapto-N-methylacetamide	Monsanto CP-19203	IIIc	2
197	25961	Phosphonodithioic acid, methyl-, O-methyl S-phenyl ester	Stauffer N-3727	IIa	2
198	25978	Phosphonodithious acid, methyl-, dipropyl ester	V-C 3-665	IIb	2
199	25704	Phosphonothioic acid, (chloromethyl)-, O-ethyl O-p-nitrophenyl ester	DuPont 691	IIIc	1
200	25758	Phosphonothioic acid, (chloromethyl)-, O-isobutyl ester, anhydride with diethyl phosphate	Stauffer B-8778	IIa	1
201	25757	Phosphonothioic acid, (chloromethyl)-, O-isopropyl ester, anhydride with diisopropyl phosphate	Stauffer B-8760	IIa	1
202	25869	Phosphonothioic acid, ethyl-, O-2-chloroethyl ester, O-ester with p-hydroxybenzonitrile	Monsanto CP-40115	IIc	2
203	25754	Phosphonothioic acid, ethyl-, O-(2-chloro-4-nitrophenyl) O-ethyl ester	Stauffer N-2230	IIb	1
204	25755	Phosphonothioic acid, ethyl-, O-(2-chloro-4-nitrophenyl) O-isopropyl ester	Stauffer N-2404	IIb	1
205	25826	Phosphonothioic acid, ethyl-, O-ethyl O-4-nitro-m-tolyl ester	Bayer 45556	IIIc	2
206	25702	Phosphonothicic acid, ethyl-, O-[2-(ethylthio)-6-methyl-4-pyrimidinyl] O-methyl ester	Bayer 39193	IIIc	1
207	25712	Phosphonothioic acid, ethyl-, O-ethyl O-2,4,5-trichlorophenyl ester	Bayer 37289	IIIc	1
208	25785	Phosphonothioic acid, methyl-, O-2-chloroallyl O-p-nitrophenyl ester	Monsanto CP-40272	Ic	2

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations 1/	Mortality class	Type test 2/
209	25789	Phosphonothioic acid, methyl-, O-2-chloroallyl O-(alpha,alpha,alpha-trifluoro-4-nitro-m-tolyl) ester	Monsanto CP-40298	IIIc	2
210	25788	Phosphonothioic acid, methyl-, O-4-chlorobutyl O-(alpha,alpha,alpha-trifluoro-4-nitro-m-tolyl) ester	Monsanto CP-40296	IIa	2
211	25714	Phosphonothioic acid, methyl-, O-2,4-dichloro=phenyl O-ethyl ester	Bayer 38333	IIb	1
212	25635	Phosphonothioic acid, methyl-, O-2,4-dichloro=phenyl O-methyl ester	Bayer 30911	IIIc	1
213	25781	Phosphonothioic acid, methyl-, O-ethyl ester, O-ester with N-hydroxynaphthalimide	Bayer 39197	IIb	1
214	25616	Phosphonothioic acid, methyl-, O-ethyl O-[p-(ethylsulfinyl)phenyl] ester	Bayer 30749	IIIc	1
215	25617	Phosphonothioic acid, methyl-, O-ethyl O-[p-(ethylsulfonyl)phenyl] ester	Bayer 30750	IIb	1
216	25614	Phosphonothioic acid, methyl-, O-ethyl O-[p-(ethylthio)phenyl] ester	Bayer 30468	IIIc	1
217	25612	Phosphonothioic acid, methyl-, O-ethyl O-[p-(methylthio)phenyl] ester	Bayer 29952	IIIc	1
218	25615	Phosphonothioic acid, methyl-, O-methyl O-[p-(methylsulfinyl)phenyl] ester	Bayer 30554	IIIc	1
219	25613	Phosphonothioic acid, methyl-, O-methyl O-[p-(methylthio)pehnyl] ester	Bayer 30237	IIIc	1
220	25787	Phosphonothioic acid, methyl-, O-p-nitrophenyl O-phenyl ester	Monsanto CP-40294	IIIc	2
221	25786	Phosphonothioic acid, methyl-, O-p-nitrophenyl O-propyl ester	Monsanto CP-40273	IIc	2
222	27066	Phosphonothioic acid, phenyl-, cyclic O,O-diester with 1,4,5,6,7,7-hexachloro-5-norbornene-2,3-dimethanol	Hooker HB-22	Ia	2
223	17798	Phosphonothioic acid, phenyl-, O-ethyl O-p-nitrophenyl ester	EPN	IIc	1

224	25979	Phosphonotrithioic acid, methyl-, dipropyl ester	V-C 3-670	IIa	2
225	27034	Phosphoramidothioic acid, [ethyl(2-hydroxypropyl)thiocarbamoyl]-, O,O-dimethyl ester	Stauffer B-10497	Ic	2
226	27035	Phosphoramidothioic acid, [(2-hydroxypropyl)=methylthiocarbamoyl]-, O,O-dimethyl ester	Stauffer B-10498	Ib	2
227	25647	Phosphoramidothioic acid, isopropyl-, O-2,4-dichlorophenyl O-methyl ester	Zytron®	IIIc	2
228	25610	Phosphoramidothioic acid, methyl-, O-ethyl O-[4-(methylthio)-m-tolyl] ester	Bayer 34042	IIIc	1
229	27019	Phosphoric acid, 1-(2-bromo-4,5-dichlorophenyl)-2-chlorovinyl dimethyl ester	Shell SD-8949	IIc	2
230	27021	Phosphoric acid, 1-(4-bromo-2,5-dichlorophneyl)-2-chlorovinyl dimethyl ester	Shell SD-8972	IIb	2
231	27043	Phosphoric acid, 2-bromo-1-(2,4-dichlorophenyl)=vinyl dimethyl ester	Shell SD-8988	Ic	2
232	24969	Phosphoric acid, 2-chloro-1-(2,4-dichlorophenyl)=vinyl diethyl ester	Compound 4072	IIIb	1
233	24968	Phosphoric acid, 2-chloro-1-(2,5-dichlorophenyl)=vinyl diethyl ester	General Chem. GC-3583	IIIb	1
234	24941	Phosphoric acid, 2-chloroethyl 2,2-dichlorovinyl methyl ester	Bayer S 209 (22684)	IIb	1
235	25841	Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl ester	Shell 8447	IIb	2
236	24988	Phosphoric acid, 1,2-dibromo-2,2-dichloroethyl dimethyl ester	naled	IIIb	1
237	24967	Phosphoric acid, 2,2-dichloro-1-(2,5-dichlorophenyl)vinyl diethyl ester	General Chem. GC-3582	IIa	1
238	25560-X	Phosphoric acid, 2,2-dichloro-1-(2-methoxy=ethoxy)vinyl dimethyl ester (25% E.C.)	Geigy G-31528	Ia	1
239	24729	Phosphoric acid, diethyl ester, ester with hydroxyketone, diethyl mercaptole	Hercules 3895	IIIa	1
240	24585	Phosphoric acid, diethyl 2-(ethylthio)-1-methylvinyl ester	Hercules 3004	IIIc	1
241	24586	Phosphoric acid, diethyl 1-methyl-2-(methylthio)vinyl ester	Hercules 3653	IIIc	1
242	25734	Phosphoric acid, dimethyl p-(methylthio)phenyl ester	General Chem. GC-6506	Ic	1
243	24482	Phosphoric acid, dimethyl ester, ester with 3-hydroxy-N,N-dimethyl-cis-crotonamide	Bidrin®	IIb	2

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
244	23970	Phosphorochloridothioic acid, cyclic O,O-diester with 2-hydroxy-alpha-methylcyclohexanemethanol	Union Carbide UC-8305	IIb	1
245	25739	Phosphorodithioic acid, S-benzylidene O,O-dimethyl ester	Shell SD-7438	IIb	1
246	25599 (25586)	Phosphorodithioic acid, S-[[(p-chloromethyl)=thio]methyl] O,O-dimethyl ester	Methyl Trithion®	IIIb	1
247	25685	Phosphorodithioic acid, S-p-chlorophenyl O,O-dimethyl ester	Bayer 42524	IIb	1
248	25596	Phosphorodithioic acid, S-[2-[(p-chlorophenyl)=thio]ethyl] O,O-dimethyl ester	Bayer 26405	IIIa	1
249	27061	Phosphorodithioic acid, cyclic O,O-diester with 1,4,5,6,7,7-hexachloro-5-norbornene-2,3-dimethanol	Hooker HB-17	Ia	2
250	25554-X	Phosphorodithioic acid, S-[[(2,5-dichlorophenyl)=thio]methyl] O,O-dimethyl ester (25% E.C.)	Geigy G-30494	IIIb	1
251	25555-X	Phosphorodithioic acid, S-[[(3,4-dichlorophenyl)=thio]methyl] O,O-diethyl ester (25% E.C.)	Geigy G-27365	IIIa	1
252	22897	Phosphorodithioic acid, O,O-diethyl ester, S,S-diester with 2,3-p-dioxanedithiol	dioxathion	IIb	1
253	24954	Phosphorodithioic acid, O,O-diethyl ester, S,S-diester with thiodimethanethiol	Monsanto CP-13206	IIa	1
254	24652	Phosphorodithioic acid, O,O-diethyl ester, S-ester with N-isopropyl-2-mercaptoacetamide	Amer. Cyan. 18682	IIb	1
255	25532	Phosphorodithioic acid, O,O-diethyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-1448	IIb	1
256	27070	Phosphorodithioic acid, O,O-diethyl ester, S-ester with mercapto-2-propanone, diethyl mercaptole	Stauffer B-9323	IIa	2
257	24105	Phosphorodithioic acid, O,O-diethyl S-methylene ester	ethion	IIb	1
258	24399	Phosphorodithioic acid, O,O-diethyl S-1,4-oxathien-3-yl ester	Hercules 2032	IIb	1

259	25506	Phosphorodithioic acid, O,O-dimethyl ester, S-ester with N-ethyl-2-mercaptoacetamide	Amer. Cyan. 18706	IIIc	1
260	25827	Phosphorodithioic acid, O,O-dimethyl ester, S-ester with 2-mercapto-N,N-dimethylmalonamide	Bayer 47043	IIc	2
261	24650-X	Phosphorodithioic acid, O,O-dimethyl ester, S-ester with 2-mercapto-N-methylacetamide (46% soluble concentrate)	dimethoate	IIb	2
262	27110	Phosphorodithioic acid, O,O-dimethyl ester, S-ester with 3-(mercaptomethyl)-2-benzoxazolinone	Chipman RP-11783	Ic	2
263	25705	Phosphorodithioic acid, O,O-dimethyl ester, S-ester with N-(mercaptomethyl)phthalimide	Imidan®	IIb	1
264	27072	Phosphorodithioic acid, O,O-dimethyl ester, S-ester with mercapto-2-propanone, diethyl mercaptole	Stauffer B-9627	IIa	2
265	25703	Phosphorodithioic acid, O,O-dimethyl S-[(5-nitro-1H-indazol-1-yl)methyl] ester	Bayer 25316	IIIc	1
266	25866	Phosphorodithioic acid, O-ethyl O-isopropyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-5724-A	IIb	2
267	25865	Phosphorodithioic acid, O-ethyl O-methyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-5723-A	IIa	2
268	25864	Phosphorodithioic acid, O-ethyl O-propyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-5722-A	IIb	2
269	24869	Phosphorodithioic acid, S-[2-(ethylsulfinyl)-ethyl] O,O-dimethyl ester	Bayer 23453	IIIb	1
270	25820	Phosphorodithioic acid, S-[2-[[(1,4,5,6,7,7-hexachloro-5-norbornen-2-yl)methyl]thio]-1-methylethyl] O,O-dimethyl ester	Velsicol 58-CS-52	IIIa	1
271	25867	Phosphorodithioic acid, O-isopropyl O-methyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-5725-A	IIb	2
272	25821	Phosphorodithioic acid, O-methyl S,S-dipropyl ester	V-C 3-607	IIb	1
273	15108	Phosphorothioic acid, O,O-diethyl O-p-nitrophenyl ester	parathion	IIIc	1
274	17035	Phosphorothioic acid, O-(2-chloro-4-nitrophenyl) O,O-dimethyl ester	dicapthon	IIa	1
275	17470	Phosphorothioic acid, O-2,4-dichlorophenyl O,O-diethyl ester	Nemacide®	IV	1
276	17957	Phosphorothioic acid, O,O-diethyl ester, O-ester with 3-chloro-7-hydroxy-4-methylcoumarin	coumaphos	IIIc	1

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
277	24653	Phosphorothioic acid, O,O-dimethyl ester, S-ester with 2-(mercaptomethyl)-5-methoxy-4H-pyran-4-one	endothion	IIIa	3/1
278	24948	Phosphorothioic acid, O,O-diethyl S-pentachlorophenyl ester	Monsanto CP-11903	Ic	1
279	24949	Phosphorothioic acid, O,O-diethyl S-2-propynyl ester	Monsanto CP-11549	IIIb	1
280	24964-X	Phosphorothioic acid, S-[2-(ethylsulfinyl)ethyl] O,O-dimethyl ester (25% E.C.)	oxydemetonmethyl	IIa	1
281	24970	Phosphorothioic acid, O,O-diethyl ester, O-ester with N-hydroxyphthalimide	Bayer 22408	IIIc	1
282	24980-X	Phosphorothioic acid, S-[2-(diethylamino)ethyl] O,O-diethyl ester, p-toluenesulfonate	Chipman 6200	IIIc	3/1
283	25540	Phosphorothioic acid, O,O-dimethyl O-[4-(methylthio)-m-tolyl] ester	fenthion	IIb	1
284	25553-X	Phosphorothioic acid, S-[[(2,5-dichlorophenyl)thio]methyl] O,O-diethyl ester (25% E.C.)	Geigy G-32500	Ic	1
285	25557-X	Phosphorothioic acid, O,O-diethyl O-3-methyl-pyrazol-5-yl ester (25% E.C.)	Pyrazothion®	IIIb	1
286	25568	Phosphorothioic acid, O,O-dimethyl S-[2-(methylsulfinyl)ethyl] ester	Bayer 24498	IIa	1
287	25611	Phosphorothioic acid, O,O-diethyl ester, O-ester with 3-(hydroxymethyl)-1,2,3-benzotriazin-4(3H)-one	Bayer 25660	IIb	1
288	25636	Phosphorothioic acid, O,O-diethyl O-[4-methylthio)-m-tolyl] ester	Bayer 29492	IIIc	1
289	25673	Phosphorothioic acid, O,O-diethyl O-[4-(methylthio)-3,5-xylyl] ester	Bayer 37341	IIb	1
290	25674	Phosphorothioic acid, S-[2-(ethylsulfinyl)-1-methylethyl] O,O-dimethyl ester	Bayer 23655	Ib	1
291	25675	Phosphorothioic acid, O,O-dimethyl ester, O-ester with p-hydroxybenzonitrile	Bayer 34727	IIc	1
292	25684	Phosphorothioic acid, O,O-dimethyl O-[4-(methylthio)-3,5-xylyl] ester	Bayer 37342	IIa	1

293	25706	Phosphorothioic acid, O,O-diethyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-1505	IIb	1
294	25707	Phosphorothioic acid, O,O-dimethyl ester, S-ester with N-(mercaptomethyl)phthalimide	Stauffer R-1571	IIa	1
295	25715	Phosphorothioic acid, O,O-dimethyl O-4-nitro-m-tolyl ester	Bayer 41831	IIIc	1
296	25776	Phosphorothioic acid, O,O-dimethyl ester, S-ester with 2-mercapto-N-methylacetamide	Bayer 45432	IIc	1
297	25837	Phosphorothioic acid, O,O-dimethyl ester, O-ester with 3-chloro-4-hydroxybenzonitrile	Bayer 47940	IIc	2
298	25923	Phosphorothioic acid, O,O-dimethyl O-m-nitrophenyl ester	Bayer 45515	IIa	2
299	27311	Phosphorothioic acid, O,O-diethyl O-3,5,6-trichloro-2-pyridyl ester	Dursban®	IIc	2
300	32685	Phthalic acid, tetrachloro-, methyl ester		Ic	2
301	22784	Propane, 1,1-bis(p-chlorophenyl)-2-nitro-	Prolan®	Ic	1
302	27068	Propane, octachloro-	Hooker HRS-229	Ia	2
303	25364	1-Propanearsonic acid		Ib	3/2
304	25717	1,2-Propanediol, 3-[(1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-2-hydroxy-1,3,4-metheno-2H-cyclobuta[cd]pentalen-2-yl)oxy]-	Hooker HRS-1243	IV	1
305	17637	2-Propen-1-ol, 2-methyl-, benzoate		Ia	2
306	17677	Propionanilide, 4'-bromo-		Ib	2
307	17638	Propionic acid, 3-(2,4,6-trimethylphenyl)-		Ic	2
308	26852-X	Powdered thermaplastic melamine-sulfonamide-formaldehyde resin impregnated with soluble fluorescent dyes		Ic	2
309	133	Rotenone		Ib	1
310	123	Sabadilla seed, powdered	sabadilla	Ia	4/1
311	24982-X	Sodium, [(dimethylarsino)oxy]-, As-oxide (31%), mixture with sodium chloride (42%), disodium methylarsonate (4.5%) and arsenic oxide (0.6%) in water	Ansul 200	Ia	2/2
312	24984-X	Sodium hexafluoroaluminate (72%)	Kryocide Super-seventy (72% cryolite)	Ia	4/1
313	17034	Succinic acid, mercapto-, diethyl ester, S-ester with O,O-dimethyl phosphorodithioate	malathion	IIb	1

Table 1.--Continued.

Item No.	Entomology No. (ENT-)	Chemical name	Other designations[1/]	Mortality class	Type test[2/]
314	27009	Succinic acid, mercapto-, diethyl ester, S-ester with O-ethyl ethylphosphonodithioate	Stauffer N-2793	IIb	2
315	8607	Sulfone, chloromethyl p-chlorophenyl	lauseto neu	IIIa	1
316	17941	Sulfone, p-chlorophenyl phenyl	Sulphenone®	Ia	2
317	16519	Sulfurous acid, 2-(p-tert-butylphenoxy)isopropyl 2-chloroethyl ester	Aramite®	Ia	1
318	19442	Terpene polychlorinates (65% chlorine)	Strobane®	Ib	1
319	25778	2H-1,3,5-Thiadiazine-3(4H)-acetic acid, dihydro-5-methyl-6-thioxo-	Bayer 29852	Ic	1
320	25526	Thiocyanic acid, (1,4,5,6,7,7-hexachloro-2,5-norbornadien-2-yl)methyl ester	Velsicol 57-CS-5	Ic	2
321	25559-X	Thiocyanic acid, 2-hydroxypropyl ester, dimethylcarbamate (25% E.C.)	Geigy G-31987	Ic	1
322	28009	Tin, hydroxytriphenyl-	DuTer®	IIIa	2
323	26853-X	Tinopal PCR fluorescent brightening agent		Ic	2
324	26854	Tinopal SFG fluorescent brightening agent		Ic	2
325	26184	Toluene, 4-chloro-alpha,alpha,alpha-trifluoro-3-nitro-		IIIa	1
326	26183	m-Toludine, 6-chloro-alpha,alpha,alpha-trifluoro-		IIa	1
327	7422	m-Toluidine, alpha,alpha,alpha-trifluoro-		IIIa	1
328	26188	m-Toluidine, alpha,alpha,alpha-trifluoro-4-nitro-		Ib	1
329	26182	o-Toluidine, alpha,alpha,alpha-trifluoro-		Ic	1
330	25618	p-Toluidine, N-(p-chlorophenyl)-alpha,alpha,alpha trifluoro-2-nitro-	Bayer 31757	Ia	1
331	26186	p-Toluidine, alpha,alpha,alpha-trifluoro-2-nitro-		Ic	1
332	17193	s-Triazine-2,4,6(1H,3H,5H)-trione, trichloro-		Ia	4/1
333	3582	Urea, thio-	thiourea	IIIa	2
334	77	Xanthen-9-one	xanthone	Ia	2

1/ Mention of a proprietary product in this publication does not constitute a guarantee or warranty of the product by the U. S. Department of Agriculture nor imply its approval by the Department to the exclusion of other products that may also be suitable.

2/ Unless indicated otherwise, toxicants were tested in peanut oil bait. No. 1 indicates test with continuous access to bait throughout test, and No. 2 indicates 24-hour access to bait.

3/ Toxicant was tested in 10 percent sugar water.

4/ Toxicant was tested in peanut butter.

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