

**MARYLAND PESTICIDE STATISTICS
for 2011**

Issued cooperatively by

Maryland Department of Agriculture
Earl F. Hance, Secretary
Mary Ellen Setting, Deputy Secretary

U. S. Department of Agriculture
National Agricultural Statistics Service
Cynthia Clark, Administrator

U.S. Department of Agriculture
National Agricultural Statistics Service
Maryland Field Office
Barbara Rater, Director
Douglas Boline, Deputy Director

Survey Conducted and Compiled by:

Douglas Boline
Amanda Dawson
Hope Harris
Bonet Taylor
Lynne Huff
Brent Nice
Ajka Suljevic

In consultation with
Maryland Department of Agriculture
Pesticide Regulation Section
Dennis Howard, Chief

PUBLISHED May 2013

Introduction

This publication contains estimates for specific pesticides used in Maryland during calendar year 2011. Published estimates include the combined pesticide usage of farm operators, certified private pesticide applicators, and commercially licensed businesses and public agencies.

All data were compiled by the Maryland Field Office of the National Agricultural Statistics Service (NASS) in cooperation with the Pesticide Regulation Section of the Maryland Department of Agriculture. Staff of the Pesticide Regulation Section provided technical assistance in survey planning and analysis of final summary tabulations. Data collection and summarization were completed by NASS, with access to record level data limited to NASS office personnel. All record-level data collected by NASS are confidential and protected by Title 7 of the U.S. Code.

Methodology

A survey was conducted in 2012 to estimate the amounts and types of pesticides applied in calendar year 2011 by Maryland farm operators, certified private pesticide applicators, commercially licensed businesses, and public agencies. The survey consisted of a sample of 1,501 farmers, 3,255 private applicators, 1,634 commercially licensed businesses, and 343 public agencies permitted to apply pesticides. Lists of certified applicators, businesses, and public agencies were provided by the Pesticide Regulation Section of the Maryland Department of Agriculture. The farm operator sample was selected from a comprehensive list of farm operators maintained by NASS.

In January 2012, questionnaires were mailed to all sampled operations, businesses, and agencies, with a second mailing occurring in early March 2012. Responses were received from 211 (62%) public agencies, 665 (41 %) licensed commercial applicators, 1,702 (52%) certified private applicators, and 856 (57%) of the sampled farm operators. Response was voluntary and not required by law.

Data were reviewed for completeness and accuracy and all amounts reported were converted to pounds of active ingredient. Following questionnaire review, data were keyed and summarized utilizing SAS statistical software and data analysis was conducted by NASS statisticians. Active ingredients were totaled and expanded to a State level based solely on the population of each sector, final sample sizes and survey response. The population assumed to represent total usage of the target populations.

Results

Pesticide active ingredient estimates are published only when there were a sufficient number of reports and/or amounts to deem the data reliable. Published data are listed in descending order by pounds of active ingredient and in alphabetical order. In addition, active ingredients reported but not estimated are listed. The top 20 pesticides (in terms of total pounds used), the top 10 by class (insecticides, herbicides, and fungicides) are provided in separate tables. Common formulation and type for pesticides published comparisons tables are also provided.

State Pesticides Usage Estimates - Ranked According to Pounds Used

Rank	Pesticide Common Name	Pounds Active Ingredient	Rank	Pesticide Common Name	Pounds Active Ingredient
1	Chromic acid	5,145,298	49	Dithiocarbamate	8,798
2	Arsenic Pentoxide	3,718,525	50	Triethylamine triclopyr	8,388
3	Copper(II) oxide	2,358,000	51	Glufosinate-ammonium	8,350
4	Glyphosate	721,154	52	Metam-sodium	8,010
5	s-Metolachlor	555,807	53	Propetamphos	7,374
6	2,4-D	439,538	54	Captan	7,127
7	Atrazine	381,321	55	Propiconazole	7,071
8	Dimethoate	243,677	56	Triclopyr	6,878
9	Imidacloprid	231,323	57	Quinclorac	6,859
10	Simazine	200,734	58	Ammonium Sulfate	6,829
11	Sulfuryl Fluoride	183,620	59	Oryzalin	6,543
12	Cupric Oxide	170,007	60	Copper Sulfate	6,462
13	Prodiamine	145,979	61	Tetrachloroisophthalonitrile	6,305
14	Mineral Oil	141,270	62	Acephate	6,302
15	Paraquat dichloride	137,874	63	Zeta-cypermethrin	6,070
16	Glycine, N-(phosphonomethyl)-	129,218	64	Mono- and di- potassium salts of	6,026
17	Trifluralin	125,501	65	Maneb	5,753
18	Etridiazole	118,384	66	MSMA	5,632
19	Cypermethrin	97,844	67	MCPA, dimethylamine salt	5,354
20	MCPP	85,625	68	Rimsulfuron	5,313
21	Chlorothalonil	61,069	69	Azoxystrobin	5,213
22	Boric Acid	58,573	70	Dichlobenil	5,168
23	Permethrin	53,361	71	Petroleum Distillate	5,152
24	Alkyl polyoxyethylene eaters	52,057	72	Dimethenamid-P	5,125
25	Dithiopyr	52,005	73	Boscalid	5,019
26	Dicamba	51,343	74	Pyraclostrobin	4,821
27	Clomazone	47,698	75	Nicosulfuron	4,805
28	Ethylene Oxide	45,376	76	Triisopropanolamine 2,4-dichlor	4,648
29	Sulfur	38,701	77	Difenoconazole	4,448
30	Bifenthrin	34,527	78	Iprodione	4,118
31	Piperonyl Butoxide	32,422	79	Paclbutrazol	4,027
32	Pendimethalin	30,957	80	Alachlor	3,941
33	Mancozeb	30,280	81	Thifensulfuron methyl	3,502
34	Mesotrione	25,684	82	Propamocarb Hydrochloride	3,415
35	Acetochlor	25,082	83	Sulfentrazone	3,407
36	Thiophanate-methyl	24,138	84	Copper Hydroxide	3,390
37	Fluroxypyr	21,403	85	Diazinon	3,331
38	Fipronil	21,380	86	EPTC	2,905
39	1H-1,2,4-Triazole-1-ethanol, .alj	21,084	87	Clopyralid	2,832
40	Dimethylamine 2,4-dichlorophenyl	20,513	88	Mercurous Chloride	2,797
41	Potassium Salts of Fatty Acids	19,141	89	Methomyl	2,759
42	Acetic Acid	16,813	90	Phosmet	2,758
43	Dichlorvos	13,506	91	Phosphorus Acid	2,707
44	beta-Cyfluthrin	11,267	92	Pyriproxyfen	2,544
45	Diquat Dibromide	10,835	93	Triisopropanolamine	2,485
46	Petroleum Oils	10,247	94	Phytobland Paraffinic Oil	2,365
47	Carbaryl	9,295	95	Flumioxazin	2,144
48	Chlorpyrifos	8,840	96	Mecoprop	2,098

State Pesticides Usage Estimates - Ranked According to Pounds Used

Rank	Pesticide Common Name	Pounds Active Ingredient	Rank	Pesticide Common Name	Pounds Active Ingredient
97	Alkylphenol ethoxylate, alcohol	2,052	145	Fosamine ammonium	673
98	Tebuconazole	1,914	146	Isoxaben	662
99	Ziram	1,863	147	Phosphatidylcholine,methylaceti	657
100	Triadimefon	1,840	148	3-Iodo-2-propynyl butylcarbama	656
101	Potassium Bicarbonate	1,727	149	Spiromesifen	625
102	Phosphine	1,713	150	Fluazifop-P-butyl	618
103	Fosetyl aluminum	1,681	151	9,10- anthraquinone	609
104	Clethodim	1,680	152	Aluminum Phosphide	603
105	Trichlorfon	1,651	153	Canola oil	594
106	Permethrin, mixed cis,trans	1,646	154	Chlorimuron-ethyl	589
107	Imazethapyr	1,644	155	Famoxadone	585
108	Tribenuron-methyl	1,594	156	Butoxyethyl 2,4-dichlorophenox	548
109	Basic cupric sulfate	1,587	157	Diuron	527
110	Metribuzin	1,566	158	Azinphos-methyl	524
111	Terbufos	1,520	159	Endothall	522
112	Cyfluthrin	1,432	160	Metconazole	489
113	Ethalfuralin	1,376	161	Bacillus thuringiensis	477
114	lambda-Cyhalothrin	1,375	162	Vernolate	461
115	Deltamethrin	1,350	163	Oxamyl	457
116	Fomesafen	1,326	164	Cloransulam-methyl	421
117	Elemental Sulfur	1,301	165	Pelargonic Acid	416
118	Chlorfenapyr	1,282	166	Napropamide	411
119	Myclobutanil	1,261	167	Trifloxysulfuron-sodium	410
120	Isocetyl	1,192	168	Imazapyr	408
121	Halosulfuron-methyl	1,189	169	Fenoxaprop-ethyl	408
122	Kaolin clay	1,176	170	Sodium Carbonate Peroxyhydrate	386
123	Linuron	1,174	171	Crop Oil concentrate	373
124	Ethephon	1,056	172	Thiamethoxam	363
125	Copper	1,044	173	Diflufenzopyr	361
126	s-Cyanomethrin	1,023	174	Fluthiacet-methyl	348
127	Endosulfan	981	175	Dimethylamine (R)-2-(2-methyl-	343
128	Tefluthrin	901	176	Siduron	343
129	Saflufenacil	898	177	Prometon	325
130	Triisopropanolammonium salt of	875	178	Sethoxydim	315
131	Diphenylamine	867	179	Acetamiprid	312
132	Mefanoxam	828	180	Methyl Bromide	296
133	Esfenvalerate	808	181	Bifenazate	289
134	Metalaxyl-M	803	182	Isopropyl alcohol et. Al.	285
135	Poly(oxy-1,2-ethanediyl)	799	183	Flutolanil	283
136	Prothioconazole	796	184	2,4-DP	283
137	Flurprimidol	794	185	Prohexadione- calcium	276
138	Mecoprop-P	750	186	Trifloxystrobin	267
139	Bensulide	725	187	Silicon Dioxide	259
140	Dinotefuran	725	188	Fenhexamid	258
141	Modified Vegetable Oil, Alkylate	700	189	Octanic acid ester of bromoxynil	255
142	Thiram	695	190	Calcium Hypochlorite	251
143	Malathion	691	191	1 -Methylheptyl Ester of Fluroxy	249
144	Trinexapac-ethyl	690	192	Pyrethrins	249

State Pesticides Usage Estimates - Ranked According to Pounds Used

Rank	Pesticide Common Name	Pounds Active Ingredient	Rank	Pesticide Common Name	Pounds Active Ingredient
193	Chloroneb	245	240	Hexythiazox	77
194	Oxyfluorfen	242	241	Norflurazon	76
195	Thiabendazole	241	242	Hexazinone	74
196	Oxadiazon	238	243	Methoxyfenozide	73
197	Calcium polysulfide	227	244	Streptomycin Sulfate	62
198	Hydroprene	205	245	Bromacil	62
199	Metsulfuron-methyl	205	246	s-Cyano-2,2 dimethylcyclopropa	58
200	Prosulfuron	203	247	Daminozide	58
201	Fluoxastrobin	198	248	Aminopyralid	58
202	Cyprodinil	193	249	Spinosad	55
203	Copper Salts of fatty & rosin aci	191	250	Pyrimethanil	51
204	Amorphous Silica	176	251	Methylated Seed Oil	51
205	Bacillus spahericus	174	252	Spinetoram	49
206	2-Ethylhexyl (R)-2-(2,4-dichloro	166	253	Imuzamox	43
207	Chlormequat	160	254	Copper triethanolamine complex	43
208	Pinoxaden	159	255	Glutaraldehyde	42
209	Cyazofamid	153	256	Carbendazim	42
210	Bentazone	149	257	Thiacloprid	41
211	Borate	148	258	Fludioxonil	41
212	Indoxacarb	146	259	Carfentrazone-ethyl	39
213	Manganese	146	260	Pyrethrum	38
214	Dimethylamine [N-methylmetha	144	261	Terbacil	38
215	Copper Oxychloride Sulfate	143	262	N-thiophosphoric triamide	38
216	Flumetsulam	139	263	Imazaquin	37
217	Mefluidide	138	264	Fluridone	33
218	Fenpropathrin	133	265	Fenbuconazole	29
219	O, O-Dimethyl S-Phosphorodith	131	266	Flumiclorac-pentyl ester	28
220	Hydrogen Dioxide	130	267	BHT (Butylated Hydroxytoluene	27
221	Hydrogen peroxide	129	268	Methylantranilate	27
222	Methoxychlor	124	269	Zinc Phosphide	27
223	Ericine	121	270	Bacillus subtilis	24
224	Aminocyclopyrachlor	118	271	Noviflumuron	23
225	Kresoxim-methyl	108	272	beta-Cyfluthrin cyanol	22
226	Polyoxin D zinc salt	103	273	Etoxazole	22
227	Dicloran	99	274	Calcium oxytetracycline	21
228	Triticonazole	98	275	Abamectin	21
229	Chlorsulfuron	98	276	MCPA, 2-ethylhexyl ester	20
230	Imazalil	92	277	Mesosulfuron-methyl	20
231	Bacillus thuringiensis subsp. Isra	90	278	Sodium metaborate (NaBO2)	20
232	Clothianidin	89	279	N-methyl pyrrolidone	19
233	Chlorantraniliprole	89	280	Dikegulac Sodium	19
234	DCPA	86	281	s-Kinoprene	18
235	Imazapic	86	282	Bromoxynil	18
236	Methoprene	84	283	Clorantraniliprole	18
237	Sodium Chlorate	84	284	Zinc	18
238	Alkyl* dimethyl benzyl ammoni	82	285	Octaborate	18
239	Maleic Hydrazide	80	286	Mandipropamide Technical	17

State Pesticides Usage Estimates - Ranked According to Pounds Used

Rank	Pesticide Common Name	Pounds Active Ingredient	Rank	Pesticide Common Name	Pounds Active Ingredient
287	Chorothalonil	17	334	Pyroxsulam	3
288	Water conditioning agent	16	335	Octhilinone	3
289	Quizalofop-ethyl	16	336	Ethofenprox	3
290	Anthraquinone	15	337	Alkyl* dimethyl ethylbenzyl am	3
291	Spirodiclofen	14	338	Neem Oil	3
292	Cycloate	14	339	Putrescent Whole Egg Solids	2
293	Tartrazine	13	340	Linalool	2
294	Quinoxifen	13	341	Cytokinin (as kinetin)	2
295	Decanol plus related compounds	13	342	Carbofuran	2
296	Halofenozide	13	343	Prallethrin	2
297	Streptomycin	13	344	Borax	1
298	Kinoprene	11	345	Beauveria Bassiana	1
299	Fenarimol	11	346	d-Limonene	1
300	Vinclozolin	11	347	Flucythrinate	1
301	Topramezone	11	348	N,N-Dimethyl-2-?3-(4,6-dimeth	1
302	n-Octyl Bicyclohepten	11	349	Didecyl dimethyl ammonium chl	1
303	1,3-Dichloropropene	10	350	Clodinafop-propargyl or Hexacc	1
304	Proiconazole	10	351	Emamectin benzoate	1
305	N-octyl bicycloheptene dicarbox	10	352	Nicotonic Acid	1
306	Novaluron	10	353	Pyridaben	1
307	Octanol	10	354	Gibberellic Acid	1
308	Non-ionic surfactant blend	9	355	Fluopicolide	1
309	Cyclohexanecarboxamide	9	356	Aminoethoxyvinylglycine hydro	1
310	N6-Benzyladenine	9	357	Fluvalinate	1
311	s-Methoprene	8	358	Phenothrin	1
312	Dimethomorph	8	359	Allethrin	1
313	Sumithrin	8	360	Bromadiolone	1
314	Fenpyroximate	7	361	Pyridalyl	1
315	Buprofezin	7		Total	16,503,549
316	Triazin-3-one	6			
317	Sulfometuron methyl	6			
318	Spirotetramat	6			
319	Chloropicrin	6			
320	Diphacinone	6			
321	Ethofumesate	5			
322	Hydramethylnon	5			
323	Azadirachtin	5			
324	Fatty Acids	5			
325	5-Hydroxytetracycline monohyd	5			
326	Propoxur	5			
327	Metiram	5			
328	D-Phenothrin	4			
329	Lactofen	4			
330	Naptalam	4			
331	Tebuthiuron	4			
332	Primisulfuron-methyl	4			
333	Flonicamid	3			

State Pesticide Usage Estimates - Alphabetical

Rank	Pesticide Common Name	Pounds Active Ingredient	Rank	Pesticide Common Name	Pounds Active Ingredient
191	1-Methylheptyl Ester of Fluroxypr	249	73	Boscalid	5,019
303	1,3-Dichloropropene	10	245	Bromacil	62
39	1H-1,2,4-Triazole-1-ethanol, .alpl	21,084	360	Bromadiolone	1
6	2,4-D	439,538	282	Bromoxynil	18
184	2,4-DP	283	315	Buprofezin	7
206	2-Ethylhexyl (R)-2-(2,4-dichlorop	166	156	Butoxyethyl 2,4-dichlorophenoxyace	548
148	3-Iodo-2-propynyl butylcarbamate	656	190	Calcium Hypochlorite	251
325	5-Hydroxytetracycline monohydr	5	274	Calcium oxytetracycline	21
151	9,10- anthraquinone	609	197	Calcium polysulfide	227
275	Abamectin	21	153	Canola oil	594
62	Acephate	6,302	54	Captan	7,127
179	Acetamiprid	312	47	Carbaryl	9,295
42	Acetic Acid	16,813	256	Carbendazim	42
35	Acetochlor	25,082	342	Carbofuran	2
80	Alachlor	3,941	259	Carfentrazone-ethyl	39
24	Alkyl poloxyethylene eaters	52,057	233	Chlorantraniliprole	89
238	Alkyl* dimethyl benzyl ammoniu	82	118	Chlorfenapyr	1,282
337	Alkyl* dimethyl ethylbenzyl amm	3	154	Chlorimuron-ethyl	589
97	Alkylphenol ethoxylate, alcohol e	2,052	207	Chlormequat	160
359	Allethrin	1	193	Chloroneb	245
152	Aluminum Phosphide	603	319	Chloropicrin	6
224	Aminocyclopyrachlor	118	21	Chlorothalonil	61,069
356	Aminoethoxyvinylglycine hydrocl	1	48	Chlorpyrifos	8,840
248	Aminopyralid	58	229	Chlorsulfuron	98
58	Ammonium Sulfate	6,829	287	Chorothalonil	17
204	Amorphous Silica	176	1	Chromic acid	5,145,298
290	Anthraquinone	15	104	Clethodim	1,680
2	Arsenic Pentoxide	3,718,525	350	Clodinafop-propargyl or Hexaconaz	1
7	Atrazine	381,321	27	Clomazone	47,698
323	Azadirachtin	5	87	Clopyralid	2,832
158	Azinphos-methyl	524	164	Cloransulam-methyl	421
69	Azoxystrobin	5,213	283	Clorantraniliprole	18
205	Bacillus spahericus	174	232	Clothianidin	89
270	Bacillus subtilis	24	125	Copper	1,044
161	Bacillus thuringiensis	477	84	Copper Hydroxide	3,390
231	Bacillus thuringiensis subsp. Israe	90	215	Copper Oxychloride Sulfate	143
109	Basic cupric sulfate	1,587	203	Copper Salts of fatty & rosin acid	191
345	Beauveria Bassiana	1	60	Copper Sulfate	6,462
139	Bensulide	725	254	Copper triethanolamine complex	43
210	Bentazone	149	3	Copper(II) oxide	2,358,000
44	beta-Cyfluthrin	11,267	171	Crop Oil concentrate	373
272	beta-Cyfluthrin cyanol	22	12	Cupric Oxide	170,007
267	BHT (Butylated Hydroxytoluene)	27	209	Cyazofamid	153
181	Bifenazate	289	292	Cycloate	14
30	Bifenthrin	34,527	309	Cyclohexanecarboxamide	9
211	Borate	148	112	Cyfluthrin	1,432
344	Borax	1	19	Cypermethrin	97,844
22	Boric Acid	58,573	202	Cyprodinil	193

State Pesticide Usage Estimates - Alphabetical

Pesticide Common Name	Pounds Active Ingredient	Pesticide Common Name	Pounds Active Ingredient
341 Cytokinin (as kinetin)	2	169 Fenoxaprop-ethyl	408
247 Daminozide	58	218 Fenpropathrin	133
234 DCPA	86	314 Fenpyroximate	7
295 Decanol plus related compounds	13	38 Fipronil	21,380
115 Deltamethrin	1,350	333 Flonicamid	3
85 Diazinon	3,331	150 Fluazifop-P-butyl	618
26 Dicamba	51,343	347 Flucythrinate	1
70 Dichlobenil	5,168	258 Fludioxonil	41
43 Dichlorvos	13,506	216 Flumetsulam	139
227 Dicloran	99	266 Flumiclorac-pentyl ester	28
349 Didecyl dimethyl ammonium chl	1	95 Flumioxazin	2,144
77 Difenconazole	4,448	355 Fluopicolide	1
173 Diflufenzopyr	361	201 Fluoxastrobin	198
280 Dikegulac Sodium	19	264 Fluridone	33
72 Dimethenamid-P	5,125	37 Fluroxypyr	21,403
8 Dimethoate	243,677	137 Flurprimidol	794
312 Dimethomorph	8	174 Fluthiacet-methyl	348
175 Dimethylamine (R)-2-(2-methyl-4	343	183 Flutolanil	283
214 Dimethylamine [N-methylmethan	144	357 Fluvalinate	1
40 Dimethylamine 2,4-dichlorophen	20,513	116 Fomesafen	1,326
140 Dinotefuran	725	145 Fosamine ammonium	673
320 Diphacinone	6	103 Fosetyl aluminum	1,681
131 Diphenylamine	867	354 Gibberellic Acid	1
45 Diquat Dibromide	10,835	51 Glufosinate-ammonium	8,350
49 Dithiocarbamate	8,798	255 Glutaraldehyde	42
25 Dithiopyr	52,005	16 Glycine, N-(phosphonomethyl)- pota	129,218
157 Diuron	527	4 Glyphosate	721,154
346 d-Limonene	1	296 Halofenozide	13
328 D-Phenothrin	4	121 Halosulfuron-methyl	1,189
117 Elemental Sulfur	1,301	242 Hexazinone	74
351 Emamectin benzoate	1	240 Hexythiazox	77
127 Endosulfan	981	322 Hydramethylnon	5
159 Endothall	522	220 Hydrogen Dioxide	130
86 EPTC	2,905	221 Hydrogen peroxide	129
223 Ericine	121	198 Hydroprene	205
133 Esfenvalerate	808	230 Imazalil	92
113 Ethalfluralin	1,376	235 Imazapic	86
124 Ethephon	1,056	168 Imazapyr	408
336 Ethofenprox	3	263 Imazaquin	37
321 Ethofumesate	5	107 Imazethapyr	1,644
28 Ethylene Oxide	45,376	9 Imidacloprid	231,323
273 Etoxazole	22	253 Imuzamox	43
18 Etridiazole	118,384	212 Indoxacarb	146
155 Famoxadone	585	78 Iprodione	4,118
324 Fatty Acids	5	120 Isoctyl	1,192
299 Fenarimol	11	182 Isopropyl alcohol et. Al.	285
265 Fenbuconazole	29	146 Isoxaben	662
188 Fenhexamid	258	122 Kaolin clay	1,176

State Pesticide Usage Estimates - Alphabetical

Pesticide Common Name	Pounds Active Ingredient	Pesticide Common Name	Pounds Active Ingredient
299 Kinoprene	11	302 n-Octyl Bicyclohepten	11
226 Kresoxim-methyl	108	305 N-octyl bicycloheptene dicarboximic	10
330 Lactofen	4	308 Non-ionic surfactant blend	9
115 lambda-Cyhalothrin	1,375	241 Norflurazon	76
341 Linalool	2	306 Novaluron	10
124 Linuron	1,174	271 Noviflumuron	23
144 Malathion	691	262 N-thiophosphoric triamide	38
240 Maleic Hydrazide	80	219 O, O-Dimethyl S-Phosphorodithioate	131
33 Mancozeb	30,280	285 Octaborate	18
287 Mandipropamide Technical	17	189 Octanic acid ester of bromoxynil	255
65 Maneb	5,753	307 Octanol	10
214 Manganese	146	335 Octhilinone	3
277 MCPA, 2-ethylhexyl ester	20	59 Oryzalin	6,543
68 MCPA, dimethylamine salt	5,354	196 Oxadiazon	238
20 MCPP	85,625	163 Oxamyl	457
97 Mecoprop	2,098	194 Oxyfluorfen	242
139 Mecoprop-P	750	79 Paclbutrazol	4,027
133 Mefanoxam	828	15 Paraquat dichloride	137,874
218 Mefluidide	138	165 Pelargonic Acid	416
89 Mercurous Chloride	2,797	32 Pendimethalin	30,957
278 Mesosulfuron-methyl	20	23 Permethrin	53,361
34 Mesotrione	25,684	106 Permethrin, mixed cis,trans	1,646
135 Metalaxyl-M	803	71 Petroleum Distillate	5,152
52 Metam-sodium	8,010	46 Petroleum Oils	10,247
161 Metconazole	489	358 Phenothrin	1
90 Methomyl	2,759	90 Phosmet	2,758
237 Methoprene	84	147 Phosphatidylcholine,methylacetic aci	657
223 Methoxychlor	124	102 Phosphine	1,713
244 Methoxyfenozide	73	91 Phosphorus Acid	2,707
181 Methyl Bromide	296	94 Phytobland Paraffinic Oil	2,365
269 Methylantranilate	27	208 Pinoxaden	159
252 Methylated Seed Oil	51	31 Piperonyl Butoxide	32,422
328 Metiram	5	135 Poly(oxy-1,2-ethanediyl)	799
111 Metribuzin	1,566	226 Polyoxin D zinc salt	103
200 Metsulfuron-methyl	205	101 Potassium Bicarbonate	1,727
14 Mineral Oil	141,270	41 Potassium Salts of Fatty Acids	19,141
142 Modified Vegetable Oil, Alkyla	700	343 Prallethrin	2
64 Mono- and di- potassium salts	6,026	332 Primisulfuron-methyl	4
66 MSMA	5,632	13 Prodiamine	145,979
120 Myclobutanil	1,261	185 Prohexadione- calcium	276
349 N,N-Dimethyl-2-(4,6-dimetho	1	304 Proiconazole	10
311 N6-Benzyladenine	9	177 Prometon	325
167 Napropamide	411	82 Propamocarb Hydrochloride	3,415
331 Naptalam	4	53 Propetamphos	7,374
339 Neem Oil	3	55 Propiconazole	7,071
76 Nicosulfuron	4,805	326 Propoxur	5
353 Nicotonic Acid	1	200 Prosulfuron	203
280 N-methyl pyrrolidone	19	136 Prothioconazole	796

State Pesticide Usage Estimates - Alphabetical

Pesticide Common Name	Pounds Active Ingredient	Pesticide Common Name	Pounds Active Ingredient
339 Putrescent Whole Egg Solids	2	81 Thifensulfuron methyl	3,502
74 Pyraclostrobin	4,821	36 Thiophanate-methyl	24,138
192 Pyrethrins	249	142 Thiram	695
260 Pyrethrum	38	301 Topramezone	11
353 Pyridaben	1	100 Triadimefon	1,840
361 Pyridalyl	1	316 Triazin-3-one	6
250 Pyrimethanil	51	108 Tribenuron-methyl	1,594
92 Pyriproxyfen	2,544	105 Trichlorfon	1,651
334 Pyroxsulam	3	56 Triclopyr	6,878
57 Quinclorac	6,859	50 Triethylamine triclopyr	8,388
294 Quinoxifen	13	186 Trifloxystrobin	267
289 Quizalofop-ethyl	16	167 Trifloxysulfuron-sodium	410
68 Rimsulfuron	5,313	17 Trifluralin	125,501
129 Saflufenacil	898	93 Triisopropanolamine	2,485
246 s-Cyano-2,2 dimethylcyclopropan	58	76 Triisopropanolamine 2,4-dichloroph	4,648
126 s-Cyanomethrin	1,023	130 Triisopropanolammonium salt of 2-p	875
178 Sethoxydim	315	144 Trinexapac-ethyl	690
176 Siduron	343	228 Triticonazole	98
187 Silicon Dioxide	259	162 Vernolate	461
10 Simazine	200,734	300 Vinclozolin	11
281 s-Kinoprene	18	288 Water conditioning agent	16
311 s-Methoprene	8	63 Zeta-cypermethrin	6,070
5 s-Metolachlor	555,807	284 Zinc	18
170 Sodium Carbonate Peroxyhydrate	386	269 Zinc Phosphide	27
237 Sodium Chlorate	84	99 Ziram	1,863
278 Sodium metaborate (NaBO2)	20	Total	16,503,549
252 Spinetoram	49		
249 Spinosad	55		
291 Spirodiclofen	14		
149 Spiromesifen	625		
318 Spirotetramat	6		
297 Streptomycin	13		
244 Streptomycin Sulfate	62		
83 Sulfentrazone	3,407		
317 Sulfometuron methyl	6		
29 Sulfur	38,701		
11 Sulfuryl Fluoride	183,620		
313 Sumithrin	8		
293 Tartrazine	13		
98 Tebuconazole	1,914		
331 Tebuthiuron	4		
128 Tefluthrin	901		
261 Terbacil	38		
111 Terbufos	1,520		
61 Tetrachloroisophthalonitrile	6,305		
195 Thiabendazole	241		
257 Thiacloprid	41		
172 Thiamethoxam	363		

Pesticides Reported But Not Estimated¹

Name	Type
1-Naphthaleneacetic Acid, Sodium Salt	Insecticide
2-Phenylethyl propionate	Insecticide
5-Chloro-2-methyl-3(2H)-isothiazolone	Bacteriocide
6-Benzyladenine	Regulator
Ancymidol	Insecticide
Bacillus thuringiensis subsp. Kurstaki	Insecticide
Benefin	Herbicide
Bentazon	Herbicide
Bioallethrin	Insecticide
Brodifacoum	Rodenticide
Bromethalin	Rodenticide
Capsaicin	Repellent
Carboxin	Fungicide
Chlorophacinone	Rodenticide
Cholecalciferol	Rodenticide
Clofentezine	Insecticide
d-Allethrin	Insecticide
Diatomaceous Earth	Insecticide
Difethialone	Rodenticide
Dimethyl Benzyl Ammonium Chloride	Fungicide
Dimethyl Ethyl-Benzyl Ammonium Chloride	Fungicide
d-trans-Allethrin	Insecticide
Fenoxaprop-P-ethyl	Herbicide
Fenoxycarb	Insecticide
gamma-Cyhalothrin	Insecticide
Garlic Oil	Repellent
Gibberellin A4 mixt. with Gibberellin A8	Plant Growth Regulator
Imazamox	Herbicide
Imibenconazole	Fungicide
Methiocarb	Insecticide
Octanoic Acid	Herbicide
Paraffinic oil	Insecticide
Peroxyacetic Acid	Herbicide
Picloram	Herbicide
Pyridine	Insecticide
Resmethrin	Insecticide
Rotenone	Insecticide
Sodium hypochlorite	Fungicide
Streptomyces lydicus	Insecticide
Sulfluramid	Insecticide
Tembotrione	Herbicide
Tert-butyl(E)-a-(1,3-dimethyl-5-phenoxy	Insecticide
Tetramethrin	Insecticide
Thiocarbazone-methyl	Herbicide
Trichoderma harzianum Rifai	Fungicide
Tricosene	Insecticide
Triflimizole	Fungicide
Triforine	Fungicide
Uniconazole-P	Plant Growth Regulator
Warfarin	Rodenticide

¹ Reported amounts less than 1 lb.

Top 20 Reported Pesticides in 2011 Compared to 2004, 2000, 1997, 1994

Rank	Pesticide Common Name	Pounds of Active Ingredient Used					Usage Ranking for			
		2011	2004	2000	1997	1994	2004	2000	1997	1994
1	Chromic acid	5,145,298	-	-	-	-	-	-	-	-
2	Arsenic Pentoxide	3,718,525	-	-	-	-	-	-	-	-
3	Copper(II) oxide	2,358,000	-	-	-	-	-	-	-	-
4	Glyphosate	721,154	2,821,085	950,269	366,496	410,291	1	4	5	5
5	S-Metolachlor	555,807	872,768	109,566	1/	1/	5	17	-	-
6	2,4-D	439,538	199,141	225,426	168,723	226,054	10	9	9	8
7	Atrazine	381,321	1,109,475	618,515	487,837	1,166,064	3	5	4	3
8	Dimethoate	243,677	2,211	13	17,019	20,174	92	264	32	41
9	Imidacloprid	231,323	128,707	131,773	2,113	186	12	15	102	173
10	Simazine	200,734	72,883	301,427	172,911	153,240	19	7	8	12
11	Sulfuryl Fluoride	183,620	-	286	18,866	4,071	-	193	30	90
12	Cupric Oxide	170,007	46,277	1,775,876	1,026,000	1,126,997	24	2	2	4
13	Prodiamine	145,979	2,921	18,190	2,065	537	84	44	104	146
14	Mineral Oil	141,270	-	-	-	-	-	-	-	-
15	Paraquat dichloride	137,874	127,869	156,131	141,262	175,607	13	11	11	11
16	Glycine, N-(phosphonomethyl)-	129,218	-	-	-	-	-	-	-	-
17	Trifluralin	125,501	36,019	34,509	9,657	36,895	32	29	48	28
18	Etridiazole	118,384	1,217	5,325	1,368	191	116	81	127	171
19	Cypermethrin	97,844	63,871	57,280	14,983	5,637	20	22	35	78
20	MCPPP	85,625	13,130	34,366	58,544	25,656	51	30	17	36

Top 10 Reported Insecticides in 2011 Compared to 2004, 2000, 1997, 1994

Rank	Pesticide Common Name	Pounds of Active Ingredient Used					Usage Ranking for			
		2011	2004	2000	1997	1994	2004	2000	1997	1994
1	Dimethoate	243,677	2,211	13	17,019	20,174	-	-	-	-
2	Imidacloprid	231,323	128,707	131,773	2,113	186	-	-	-	-
3	Cypermethrin	97,844	63,871	57,280	14,983	5,637	-	-	-	-
4	Boric Acid	58,573	488	5,194	2,817	47,992	-	-	-	-
5	Permethrin	53,361	38,038	86,681	82,730	82,985	-	-	-	-
6	Bifenthrin	34,527	1,307	2,351	304	90	-	-	-	-
7	Fipronil	21,380	15,696	78	-	-	-	-	-	-
8	Dichlorvos	13,506	-	-	-	-	-	-	-	-
9	beta-Cyfluthrin	11,267	-	-	-	-	-	-	-	-
10	Petroleum Oils	10,247	47,641	229,896	166,646	221,603	-	8	10	9

Top 10 Reported Herbicides in 2011 Compared to 2004, 2000, 1997, 1994

Rank	Pesticide Common Name	Pounds of Active Ingredient Used					Usage Ranking for			
		2011	2004	2000	1997	1994	2004	2000	1997	1994
1	Glyphosate	721,154	2,821,085	950,269	366,496	410,291	1	4	5	5
2	s-Metolachlor	555,807	872,768	109,566	1/	1/	5	1	-	-
3	2,4-D	439,538	199,141	225,426	170,559	226,054	10	9	9	8
4	Atrazine	381,321	1,109,475	618,515	487,837	1,166,064	3	5	4	3
5	Simazine	200,734	72,883	301,427	172,911	153,240	-	7	8	-
6	Prodiamine	145,979	2,921	18,190	2,065	537	-	-	-	-
7	Paraquat dichloride	137,874	127,869	156,131	141,262	175,607	-	-	-	-
8	Glycine, N-(phosphonomethyl)-	129,218	-	-	-	-	-	-	-	-
9	Trifluralin	125,501	36,019	34,509	9,657	36,895	-	-	-	-
10	MCPP	85,625	13,130	34,366	58,544	25,656	-	-	-	-

Top 10 Reported Fungicides in 2011 Compared to 2004, 2000, 1997, 1994

Rank	Pesticide Common Name	Pounds of Active Ingredient Used					Usage Ranking for			
		2011	2004	2000	1997	1994	2004	2000	1997	1994
1	Mineral Oil	141,270	-	-	-	-	-	-	-	-
2	Etridiazole	118,384	1,217	5,325	1,368	191	-	-	-	-
3	Chlorothalonil	61,069	1,529,493	115,194	48,331	76,600	2	-	-	-
4	Sulfur	38,701	6,959	12,088	14,178	11,576	-	-	-	-
5	Mancozeb	30,280	254,254	38,107	37,343	17,572	6	-	-	-
6	Thiophanate-methyl	24,138	130,637	19,939	10,747	6,502	-	-	-	-
7	1H-1,2,4-Triazole-1-ethanol, .	21,084	-	-	-	-	-	-	-	-
8	Dithiocarbamate	8,798	-	-	-	-	-	-	-	-
9	Captan	7,127	81,816	22,095	16,412	24,694	-	-	-	-
10	Propiconazole	7,071	18,861	50,029	23,990	11,045	5	-	-	-

1/ Not reported.

**Comparison of Pesticide Use
Classes Reported in
1994, 1997, 2000, 2004, 2011**

Pesticide Class		1994	1997	2000	2004	2011	Percent Change			
							94-11	97-11	00-11	04-11
Total Usage	<i>pounds</i>	13,881,629	10,331,821	17,123,643	10,722,796	16,503,533	19%	60%	-4%	54%
Herbicides	<i>pounds</i>	5,677,775	3,195,407	4,619,656	6,310,097	3,406,867	-40%	7%	-26%	-46%
	<i>% of Total</i>	41%	31%	27%	59%	21%				
Insecticides	<i>pounds</i>	997,913	465,729	1,104,249	875,511	831,769	-17%	79%	-25%	-5%
	<i>% of Total</i>	7%	5%	6%	8%	5%				
Fungicides	<i>pounds</i>	301,612	199,373	599,556	3,387,026	538,940	79%	170%	-10%	-84%
	<i>% of Total</i>	2%	2%	4%	32%	3%				
Wood Preservatives	<i>pounds</i>	6,769,673	6,156,000	10,655,541	49,879	11,221,823	66%	82%	5%	22398%
	<i>% of Total</i>	49%	60%	62%	^{3/}	68%				
Antifoulants	<i>pounds</i>	27,045	1,520	3,606	46,316	^{1/}	-----	-----	-----	-----
	<i>% of Total</i>	^{3/}	^{3/}	^{3/}	^{3/}	^{1/}				
Others ^{2/}	<i>pounds</i>	107,611	313,792	141,035	53,967	504,134	368%	61%	257%	834%
	<i>% of Total</i>	1%	3%	1%	1%	3%				

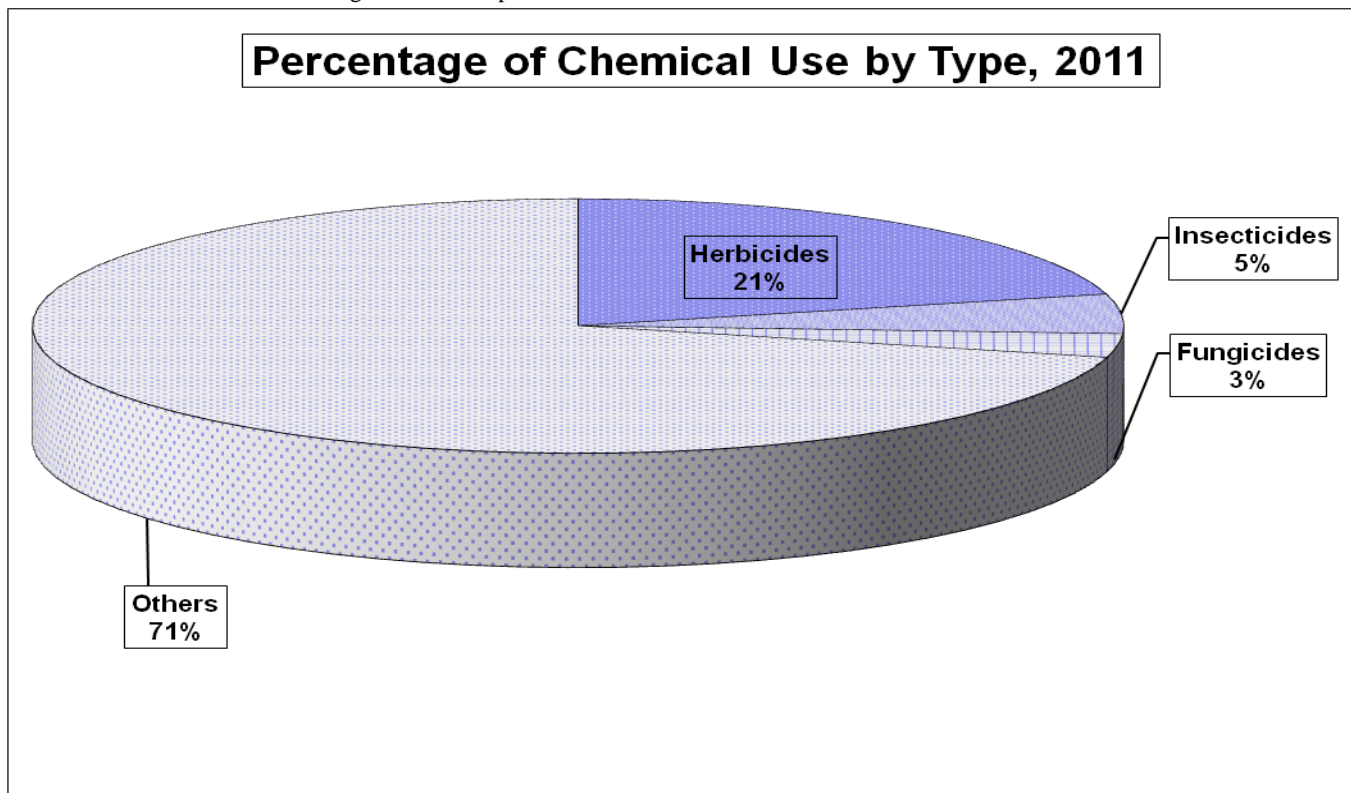
¹ Not reported.

² Others include Algicides, Bactericides, Fumigants, Growth Regulators, Miticides,

Molluscicides,

Repellents, and Rodenticides.

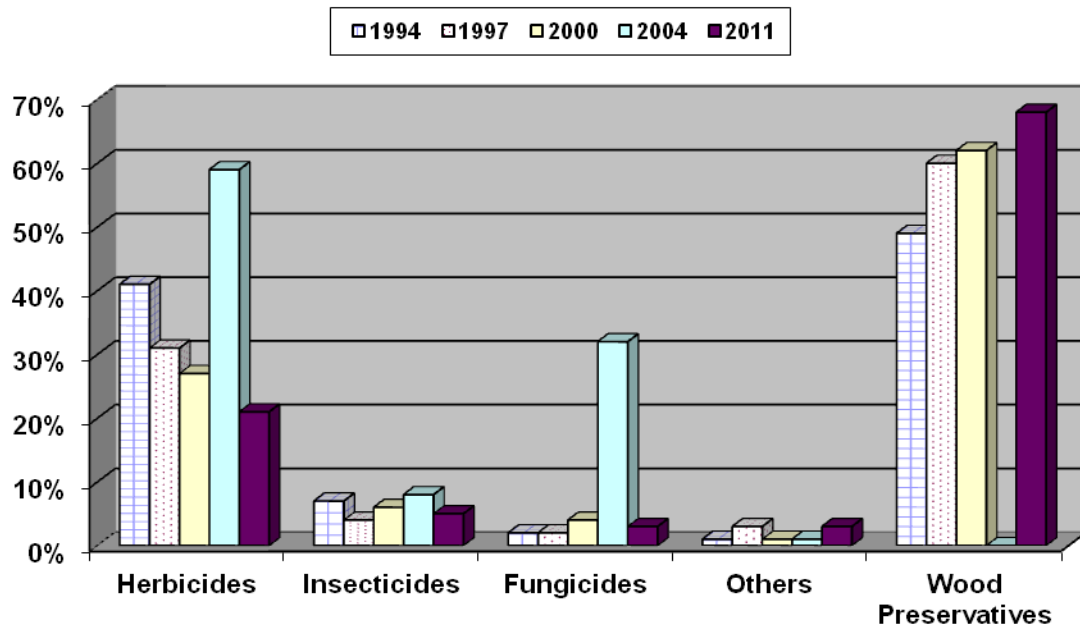
³ Percentage too small to publish.



¹ Others includes antifoulants and wood preservatives.

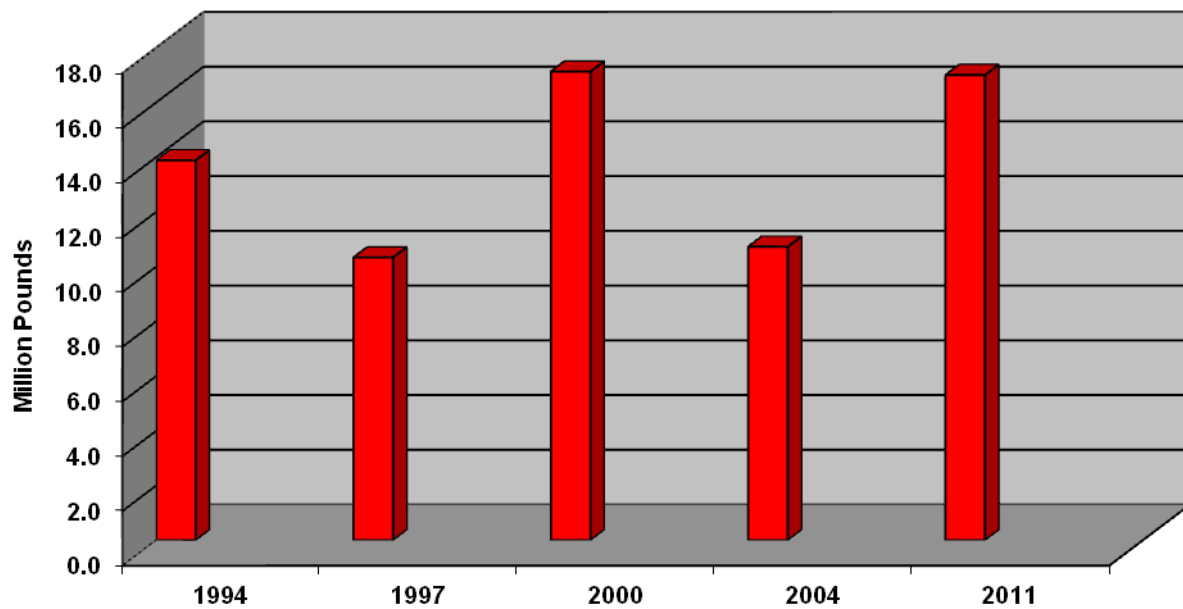
Percent of Chemical Usage by Type

1994, 1997, 2000, 2004 and 2011



Total Pounds of Pesticides Used

1994, 1997, 2000, 2004 and 2011



Integrated Pest Management (IPM)

Farmer and Private Applicators

	Year	Never	Sometimes	Almost Always	Not Applicable
		<i>percent</i>			
Monitoring practices such as scouting for pests, soil testing, field mapping, etc	2011	13	13	56	18
	2004	10	15	49	26
Avoidance practices such as crop rotation, alternate planting dates, companion cropping, trapping, etc.	2011	11	17	54	18
	2004	8	16	51	25
Preventative practices such as mowing, burning, chopping, tillage, etc.	2011	10	25	50	15
	2004	7	21	52	20
Suppression practices such as biological pesticides, mating disruptors, beneficial organisms, genetically modified products, etc.	2011	27	24	27	22
	2004	31	26	16	27