



# Pesticide Use Trends in the U.S.: a 20-Year U.S. Summary<sup>1</sup>

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## Introduction

The EPA, in cooperation with the USDA and FDA, is responsible for regulating the production and use of pesticides in the U.S. This document provides data on volumes used and sales of pesticides from EPA survey data available for the 20-year period, 1987 – 2001. The intent of this information is only to present an objective profile and does not attempt to interpret, reach conclusions about, or make inferences regarding the data. Conclusions should not be drawn in regards to impacts on human health, the environment, or the economy.

## Data sources

The data reported in this document are based upon EPA estimates. EPA does not have a program devoted specifically to estimating pesticide use; rather, they use the best available information from the public domain and proprietary sources. The data are approximate values and not statistically precise. The sources that EPA consults for compiling this information include:

- The Pesticide Data Center in the Biological and Economic Analysis Division of EPA's Office of Pesticide Programs;
- Several national database services for compiling agricultural pesticide use data, including the USDA; and
- Proprietary data sources with vendor permission, including Doane Marketing Research, Inc., Kline and Company, Inc., SRI, Inc., Wood Mackenzie; and Mike Bukley, Inc.

## Explanation of data components

The data presented in the tables separate broad classes of pesticides – herbicides, insecticides, fungicides, and other pesticides. The “herbicide” data combine plant growth regulators (PGR) with them, while “fungicides” and “other” pesticides are presented as combined data and include sulfur, petroleum oil, nematicides, fumigants, rodenticides, molluscicides, aquatic, and pesticides for the control of birds and fish. Data for wood preservatives, specialty biocides, and chlorine/hypochlorites are not

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**The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication does not signify our approval to the exclusion of other products of suitable composition. Use pesticides safely. Read and follow directions on the manufacturer's label.**

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included in the tables under any pesticide class. Totals may not add precisely due to rounding. In reporting the amount used, data contained in Tables 5 - 8 are presented as pounds of active ingredient (a.i.) per acre. The data presented in the “other” pesticide category are for miscellaneous pesticides including nematicides, fumigants, sulfur, petroleum, and other chemicals used for pesticides, such as sulfuric acid and insect repellents. These data represent the combined pesticide usage in the major markets of agriculture, home and garden – which include pesticides applied by homeowners, both indoors and outdoors. These two market sectors do not include pesticide applications by professional applicators. Industrial/commercial/governmental uses involve pesticides applied by professional applicators to industrial, commercial, and governmental facilities; plus custom/commercial applications to homes and gardens, including lawns.

Tables 6 – 8 present total volumes of pesticides applied by market sector.

### **Additional information**

Kiely, T., D. Donaldson, and A. Grube. 2004. Pesticides Industry Sales and Usage: 2000 and 2001 Market Estimates. EPA's Biological and Economic Analysis Division, Office of Pesticide Programs, and Office of Prevention, Pesticides, and Toxic Substances.  
<http://www.epa.gov/pesticides>.

**Table 1.** U.S. pesticide expenditures, all market sectors.

Year	Expenditure (Millions of Dollars)			
	Herbicides/PGR	Insecticides	Fungicide and Other	Total
2001	6,410	3,124	1,556	11,090
2000	6,365	3,129	1,671	11,165
1999	6,368	3,046	1,741	11,155
1998	6,853	2,872	1,691	11,416
1997	6,846	2,957	1,528	11,331
1996	6,599	2,849	1,521	10,969
1995	6,276	3,017	1,488	10,781
1994	5,944	2,722	1,408	10,074
1993	5,094	2,479	1,259	8,832
1992	5,004	2,198	1,183	8,385
1991	4,682	2,139	1,223	8,044
1990	4,473	2,083	1,171	7,727
1989	4,305	1,978	1,141	7,424
1988	4,121	1,964	1,190	7,275
1987	3,973	2,008	1,049	7,030
1986	3,858	1,759	967	6,584
1985	3,920	1,823	963	6,706
1984	4,488	1,809	708	7,005
1983	3,870	2,074	731	6,675
1982	3,772	2,014	540	6,326

**Table 2.** U.S. pesticide expenditures, agricultural sector.

Year	Expenditure (Millions of Dollars)			
	Herbicides/PGR	Insecticides	Fungicide and Other	Total
2001	4,987	1,326	1,091	7,404
2000	5,007	1,411	1,194	7,612
1999	5,012	1,370	1,243	7,625
1998	5,632	1,427	1,209	8,268
1997	5,610	1,551	1,124	8,285
1996	5,399	1,480	1,128	8,007
1995	5,112	1,607	1,107	7,826
1994	4,008	1,293	1,036	7,137
1993	3,987	1,123	895	6,005
1992	3,915	1,058	829	5,802
1991	3,644	687	884	5,215
1990	3,463	1,067	842	5,372
1989	3,255	978	800	5,033
1988	3,080	1,010	775	4,865
1987	2,935	1,145	650	4,730
1986	2,775	914	600	4,289
1985	2,900	990	615	4,505

**Table 2.** U.S. pesticide expenditures, agricultural sector.

Year	Expenditure (Millions of Dollars)			
	Herbicides/PGR	Insecticides	Fungicide and Other	Total
1984	3,390	903	418	4,711
1983	2,800	1,261	450	4,511
1982	2,465	1,109	268	3,842

**Table 3.** U.S. pesticide expenditures, industry/commercial/government sector.

Year	Expenditure (Millions of Dollars)			
	Herbicides/PGR	Insecticides	Fungicide and Other	Total
2001	792	510	233	1,535
2000	762	468	255	1,485
1999	794	463	289	1,546
1998	728	425	292	1,445
1997	743	386	214	1,343
1996	721	458	208	1,387
1995	700	527	202	1,429
1994	679	533	197	1,409
1993	660	406	191	1,257
1992	648	378	186	1,212
1991	616	328	176	1,120
1990	593	307	169	1,069
1989	630	317	180	1,127
1988	600	394	240	1,234
1987	576	330	210	1,116
1986	642	316	192	1,150
1985	600	315	180	1,095
1984	720	365	150	1,235
1983	720	288	144	1,152
1982	852	305	142	1,299

**Table 4.** U.S. pesticide expenditures, home and garden sector.

Year	Expenditure (Millions of Dollars)			
	Herbicides/PGR	Insecticides	Fungicide and Other	Total
2001	631	1,288	232	2,151
2000	596	1,250	222	2,068
1999	562	1,213	209	1,984
1998	493	1,020	190	1,703
1997	493	1,020	190	1,703
1996	479	910	185	1,574
1995	465	883	179	1,527

**Table 4.** U.S. pesticide expenditures, home and garden sector.

Year	Expenditure (Millions of Dollars)			
	Herbicides/PGR	Insecticides	Fungicide and Other	Total
1994	456	895	175	1,526
1993	446	870	174	1,490
1992	441	762	168	1,371
1991	423	724	162	1,309
1990	417	710	160	1,287
1989	420	683	161	1,264
1988	441	601	175	1,217
1987	462	534	189	1,185
1986	441	529	175	1,145
1985	420	518	168	1,106
1984	378	542	140	1,060
1983	350	525	137	1,012
1982	445	600	130	1,175

**Table 5.** U.S. pesticide amounts used, all market sectors.

Year	Million Pounds of Active Ingredient				
	Herbicides/PGR	Insecticides	Fungicides	Other	Total
2001	553	105	73	472	1,203
2000	542	122	74	496	1,234
1999	534	126	79	505	1,244
1998	555	103	86	462	1,206
1997	568	112	81	467	1,228
1996	578	116	79	456	1,229
1995	556	125	77	452	1,210
1994	583	124	79	443	1,229
1993	527	115	80	440	1,162
1992	554	116	81	435	1,186
1991	546	114	86	408	1,154
1990	564	121	91	425	1,201
1989	567	123	98	405	1,193
1988	557	132	99	403	1,191
1987	532	141	100	402	1,175
1986	590	151	109	416	1,266
1985	611	161	110	422	1,304
1984	634	173	109	429	1,345
1983	573	185	115	435	1,308
1982	620	198	117	447	1,382

**Table 6.** U.S. pesticide amounts used, agricultural sector.

Year	Million Pounds of Active Ingredient				
	Herbicides/PGR	Insecticides	Fungicides	Other	Total
2001	433	73	42	359	907
2000	432	90	44	382	948
1999	428	93	45	390	956
1998	465	69	54	348	936
1997	470	79	53	353	955
1996	481	81	51	342	955
1995	461	85	49	338	933
1994	485	80	48	326	939
1993	425	72	47	320	864
1992	450	78	45	311	884
1991	440	77	47	284	848
1990	455	82	50	297	884
1989	460	85	54	274	873
1988	450	91	54	272	867
1987	425	98	52	271	846
1986	481	105	59	282	927
1985	501	113	59	288	961
1984	516	122	56	294	988
1983	455	131	59	296	941
1982	503	141	59	308	1011

**Table 7.** U.S. pesticide amounts used, industry/commercial/government sector.

Year	Million Pounds of Active Ingredient				
	Herbicides/PGR	Insecticides	Fungicides	Other	Total
2001	49	15	19	50	133
2000	48	17	19	52	136
1999	52	19	24	53	148
1998	41	21	24	52	138
1997	49	20	20	52	141
1996	49	24	20	52	145
1995	48	28	20	53	149
1994	52	30	23	54	159
1993	56	30	25	56	167
1992	58	27	28	57	170
1991	60	26	30	58	174
1990	63	27	31	60	181
1989	63	27	31	60	181
1988	64	27	32	61	184
1987	65	28	34	61	188
1986	68	29	36	64	197
1985	70	30	37	64	201
1984	78	31	38	65	212

**Table 8.** U.S. pesticide amounts used, home and garden sector.

Year	Million Pounds of Active Ingredient				
	Herbicides/PGR	Insecticides	Fungicides	Other	Total
2001	71	17	12	63	163
2000	62	15	11	62	150
1999	54	14	10	62	140
1998	49	13	8	62	132
1997	49	13	8	62	132
1996	48	12	8	62	130
1995	47	12	8	61	128
1994	46	13	8	63	130
1993	46	13	8	64	131
1992	46	12	8	66	132
1991	46	12	9	67	134
1990	46	12	10	68	136
1989	44	12	13	70	139
1988	43	13	13	70	139
1987	42	14	14	70	140
1986	41	16	14	70	141
1985	40	18	14	70	142
1984	40	20	15	70	145
1983	38	22	16	70	146
1982	37	24	17	70	148