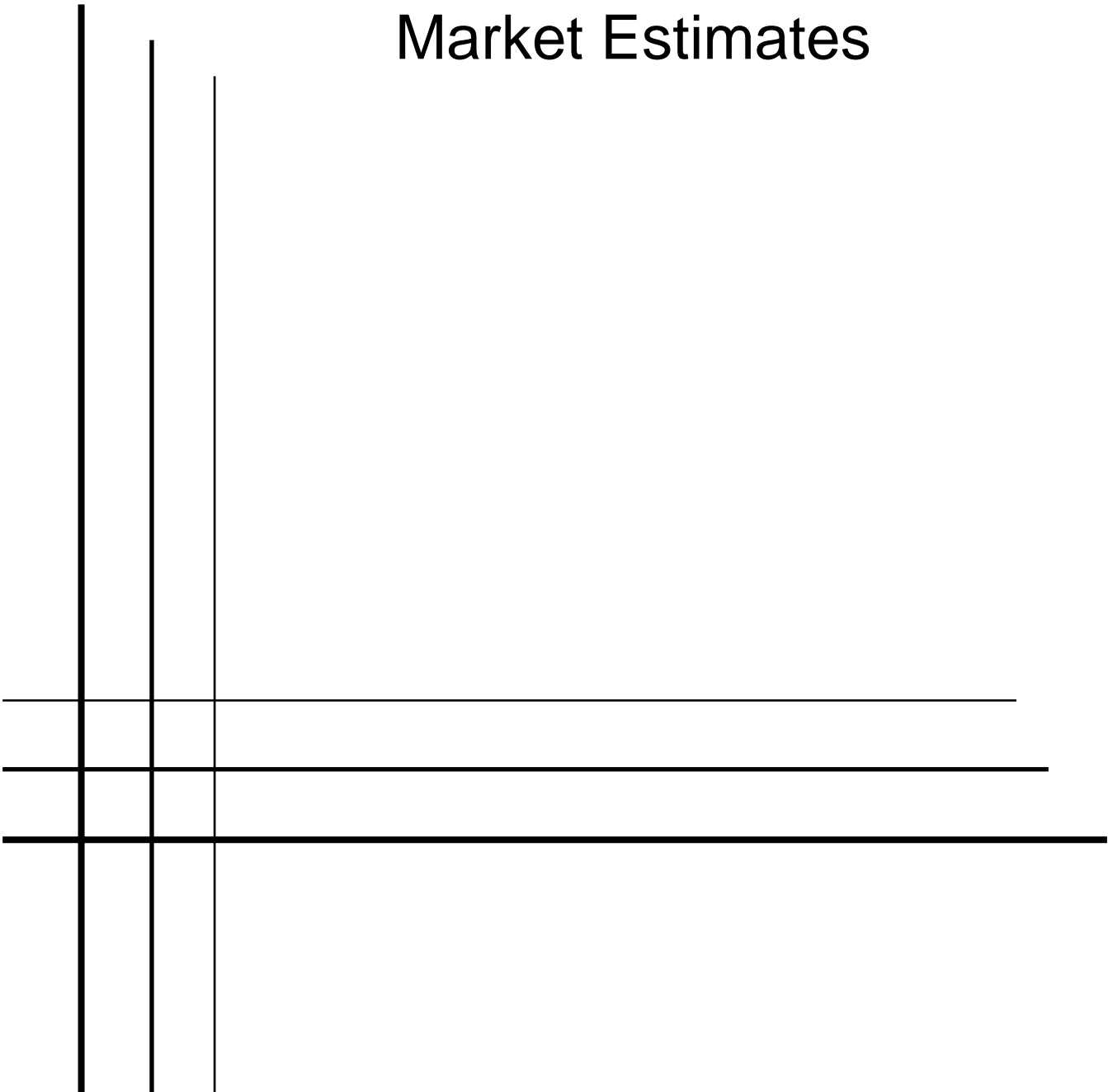




# Pesticides Industry Sales and Usage

2000 and 2001  
Market Estimates





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# **Pesticides Industry Sales and Usage**

## **2000 and 2001 Market Estimates**

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# 1. Introduction

## Purpose of Report

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug, and Cosmetic Act (FFDCA), U.S. Environmental Protection Agency (EPA), in cooperation with the States and other agencies, such as the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA), is responsible for regulating the production and use of pesticides in the United States. This report provides contemporary and historical economic information on the U.S. pesticide producing and using sectors covered by these state and federal regulatory programs. Economic profile information covers a variety of topics, particularly the pesticide market with respect to dollar values and quantities of active ingredient. The EPA Pesticide Program has issued such market reports since 1979.

This report is intended only to present objective economic profile and trend information reflecting the best available information on pesticide sales and use. It does not attempt to interpret, reach conclusions about, or make inferences about the data. Detailed analysis of causal factors or implications, such as potential impacts on human health, the environment, or the economy, falls beyond the scope of this project.

We caution the reader not to infer too much from changes in the amount of pesticides used from year to year. Changes in the amount of pesticides used are not necessarily correlated to changes in the level of pest control or changes in the human health and environmental risks associated with pesticide use.

## Data Sources

Neither EPA nor any other agency has a program devoted specifically to estimating the overall pesticide market in terms of dollars spent and quantity of active ingredient used on an annual basis. This report uses the best available information from the public domain and proprietary sources. The numbers in the report represent approximate values rather than precise values with known statistical properties.

The Agency has a wide variety of public and proprietary information upon which to base estimates of pesticide sales and use. The Pesticide Data Center in the Biological and Economic Analysis Division (BEAD) of EPA's Office of Pesticide Programs (OPP) maintains extensive files and library materials. These materials cover different pesticide types and groupings in the agricultural market sector, which account for a majority of the use of conventional pesticides, and in non-agricultural market sectors. The Agency uses three national database services for the agricultural sector, including one from the USDA, and a number of more specific data sources. Similar data sources cover the non-agricultural sectors. EPA also uses proprietary data sources, with vendor permission, to estimate agricultural and non-agricultural market sectors. These proprietary data sources, produced by well-known organizations, also serve pesticide registrants and other private sector firms analyzing the U.S. pesticide market.

## Overview of Contents/Scope of Report

This report profiles the U.S. pesticide industry for the years 2000 and 2001. Data, estimated using several different parameters (e.g., pesticide type, pesticide group, market sector), appear in tabular format. The scope of the report is largely inclusive of the U.S. pesticide industry and includes data on expenditures, volume, imports, exports, firms, individuals involved in production and use of pesticides, number of pesticides, and number of certified applicators, among other topics. The report includes graphical representations of the data where useful. Although most of the information covers the years 2000 and 2001, this report also includes a historical section.

Following this Introduction (Section 1), Section 2 summarizes U.S. and world pesticide user expenditures in 2000 and 2001, and Section 3 summarizes U.S. and world pesticide amounts used in 2000 and 2001. Section 4 presents background information on pesticide market sectors. Finally, Section 5 presents historical data summarizing pesticide expenditures and estimates of amount used since 1982.

The writing of the 2002 and 2003 pesticides industry sales and usage report is scheduled to begin once all of the supporting pesticide sales and usage data for 2003 are published (Fall 2004). If you have questions regarding this report or need further information, please contact the authors at the following address:

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## 2. 2000 and 2001 Sales

### 2.1 World and U.S. Pesticide Expenditures

World pesticide expenditures totaled more than \$32.5 billion in 2000 and nearly \$32.0 billion in 2001 (see Table 2.1). Expenditures on herbicides accounted for the largest portion of total expenditures (more than 40%), followed by expenditures on insecticides, fungicides, and other pesticides, respectively. Total expenditures were down in 2001 due to decreased spending on all pesticide types.

U.S. pesticide expenditures totaled more than \$11 billion in 2000 and 2001, in proportions similar to those of world expenditures, with a relatively larger proportion of total U.S. expenditures on herbicides (see Figure 2.1). U.S. expenditures accounted for more than 33% of total world expenditures on pesticides, more than 40% of world expenditures on herbicides, more than 33% of world expenditures on insecticides, and more than 10% and 25% of world expenditures on fungicides and other pesticides, respectively.<sup>2</sup> The Agency based its estimates of world and U.S. pesticide expenditures on the estimated pesticide expenditures and estimated changes in pesticide expenditures by type derived from public and proprietary EPA databases. See Section 2.3 for a more detailed look at U.S. expenditures on pesticides in 2000 and 2001.

**Table 2.1**  
**World and U.S. Pesticide Expenditures at User Level**  
**by Pesticide Type, 2000 and 2001 Estimates**

| Year                      | World Market |     | U.S. Market |     | U.S. Percentage<br>of World Market |
|---------------------------|--------------|-----|-------------|-----|------------------------------------|
|                           | Mil \$       | %   | Mil \$      | %   |                                    |
| 2000                      |              |     |             |     |                                    |
| Herbicides <sup>1</sup>   | 14,319       | 44  | 6,365       | 57  | 44                                 |
| Insecticides <sup>2</sup> | 9,102        | 28  | 3,129       | 28  | 34                                 |
| Fungicides <sup>2</sup>   | 6,384        | 19  | 860         | 8   | 13                                 |
| Other <sup>3</sup>        | 2,964        | 9   | 811         | 7   | 27                                 |
| Total                     | 32,769       | 100 | 11,165      | 100 | 34                                 |
| 2001                      |              |     |             |     |                                    |
| Herbicides <sup>1</sup>   | 14,118       | 44  | 6,410       | 58  | 45                                 |
| Insecticides <sup>2</sup> | 8,763        | 28  | 3,124       | 28  | 36                                 |
| Fungicides <sup>2</sup>   | 6,027        | 19  | 835         | 8   | 14                                 |
| Other <sup>3</sup>        | 2,848        | 9   | 721         | 7   | 25                                 |
| Total                     | 31,756       | 100 | 11,090      | 100 | 35                                 |

Note: Totals may not add due to rounding. Table does not cover wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys, Cropnosis Limited data, and EPA proprietary data.

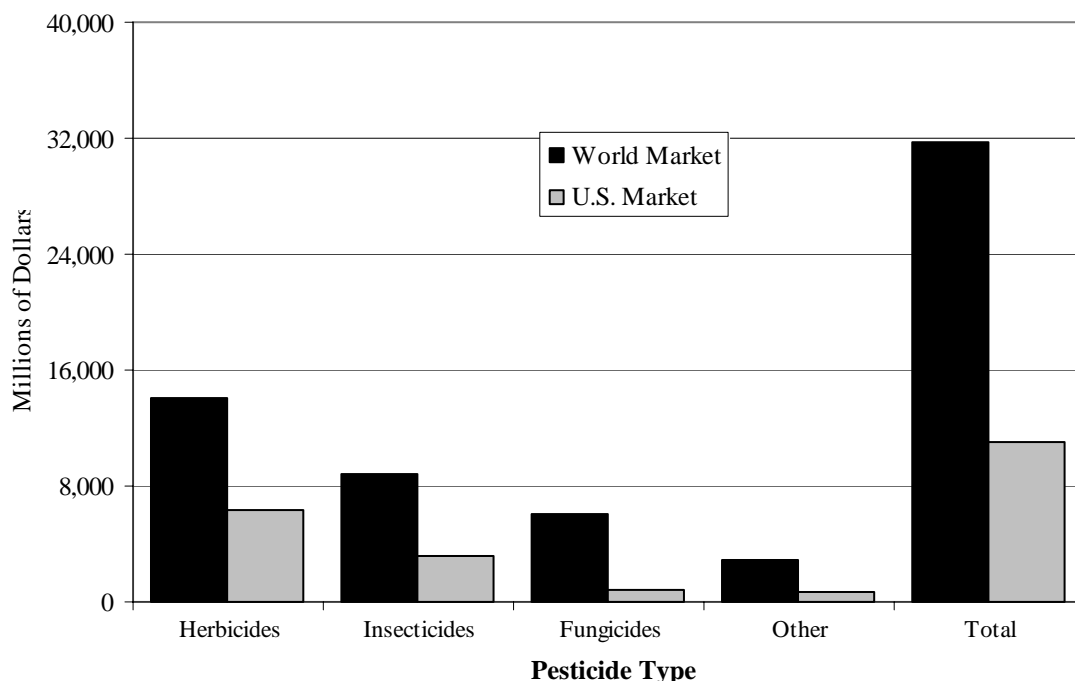
1. "Herbicides" include herbicides and plant growth regulators.

2. "Insecticides" and "fungicides" exclude sulfur and petroleum oil.

3. "Other" includes nematocides, fumigants, rodenticides, molluscicides, aquatic and fish/bird pesticides, other miscellaneous conventional pesticides, plus other chemicals used as pesticides (e.g., sulfur and petroleum oil).



**Figure 2.1**  
**World and U.S. Pesticide Expenditures at User Level**  
**by Pesticide Type, 2001 Estimates**



**2.2 Value of U.S. Pesticides: Producer Level**

Table 2.2 summarizes the 2000 and 2001 average U.S. value of pesticides at the producer level, including production, import, export, and supply (total and net). Pesticide sales related to U.S. production and consumption of pesticides comprised \$9.3 billion of domestic production, \$1.0 billion of imports, \$1.6 billion of exports, and \$8.7 billion of net supply at the producer level.

**Table 2.2**  
**Value of U.S. Pesticide Production, Imports, Exports, and Supply**  
**at Producer Level**

| Category     | Annual Sales<br>(Billions of Dollars) |
|--------------|---------------------------------------|
|              | Average of 2000 and 2001              |
| Production   | 9.3                                   |
| Imports      | 1.0                                   |
| Total Supply | 10.3                                  |
| Exports      | 1.6                                   |
| Net Supply   | 8.7                                   |

Note: Excludes industrial wood preservatives, specialty biocides, and chlorine/hypochlorites. Includes conventional pesticides and other chemicals used as pesticides (e.g., sulfur and petroleum oil). Source: EPA estimates based on Croplife America annual surveys, USDA Foreign Agricultural Service's Trade Internet System (<http://www.fas.usda.gov/ustrade>), and EPA proprietary data.

### 2.3 Pesticide Expenditures in the U.S.: Users

U.S. expenditures at the user level for conventional and other pesticides totaled more than \$11 billion in both 2000 and 2001 (see Table 2.3). The conventional and other pesticides included in the estimates are herbicides, insecticides, fungicides, nematocides, fumigants, sulfur, petroleum oil, and others. The estimates exclude expenditures on specialty biocides, wood preservatives, and chlorine/hypochlorites.

Reductions in spending in the agricultural sector on all pesticide types more than offset increases in spending in the non-agricultural sectors (industry/commercial/government, home and garden) in 2001, resulting in a decline in total 2001 expenditures. Expenditures in the agriculture sector accounted for more than two-thirds of total expenditures in both years. Herbicide expenditures dominated in all sectors except the home and garden sector, where insecticides comprised nearly 60% of all expenditures (see Figure 2.2). The estimated expenditures rely on the estimated changes in pesticide expenditures by sector and type provided in public and proprietary EPA databases.

**Table 2.3**  
**User Expenditures on Pesticides in the U.S.**  
**by Pesticide Type and Market Sector, 2000 and 2001 Estimates**

| Year          | Herbicides / Plant Growth Regulators |     | Insecticides / Miticides |     | Fungicides |     | Other <sup>1</sup> |     | Total  |     |
|---------------|--------------------------------------|-----|--------------------------|-----|------------|-----|--------------------|-----|--------|-----|
|               | Mil \$                               | %   | Mil \$                   | %   | Mil \$     | %   | Mil \$             | %   | Mil \$ | %   |
| 2000          |                                      |     |                          |     |            |     |                    |     |        |     |
| Agriculture   | 5,007                                | 79  | 1,411                    | 45  | 647        | 75  | 547                | 67  | 7,612  | 68  |
| Ind/Comm/Gov  | 762                                  | 12  | 468                      | 15  | 172        | 20  | 83                 | 10  | 1,485  | 13  |
| Home & Garden | 596                                  | 9   | 1,250                    | 40  | 41         | 5   | 181                | 22  | 2,068  | 19  |
| Total         | 6,365                                | 100 | 3,129                    | 100 | 860        | 100 | 811                | 100 | 11,165 | 100 |
| 2001          |                                      |     |                          |     |            |     |                    |     |        |     |
| Agriculture   | 4,987                                | 78  | 1,326                    | 42  | 615        | 74  | 476                | 66  | 7,404  | 67  |
| Ind/Comm/Gov  | 792                                  | 12  | 510                      | 16  | 172        | 21  | 61                 | 8   | 1,535  | 14  |
| Home & Garden | 631                                  | 10  | 1,288                    | 41  | 48         | 6   | 184                | 26  | 2,151  | 19  |
| Total         | 6,410                                | 100 | 3,124                    | 100 | 835        | 100 | 721                | 100 | 11,090 | 100 |

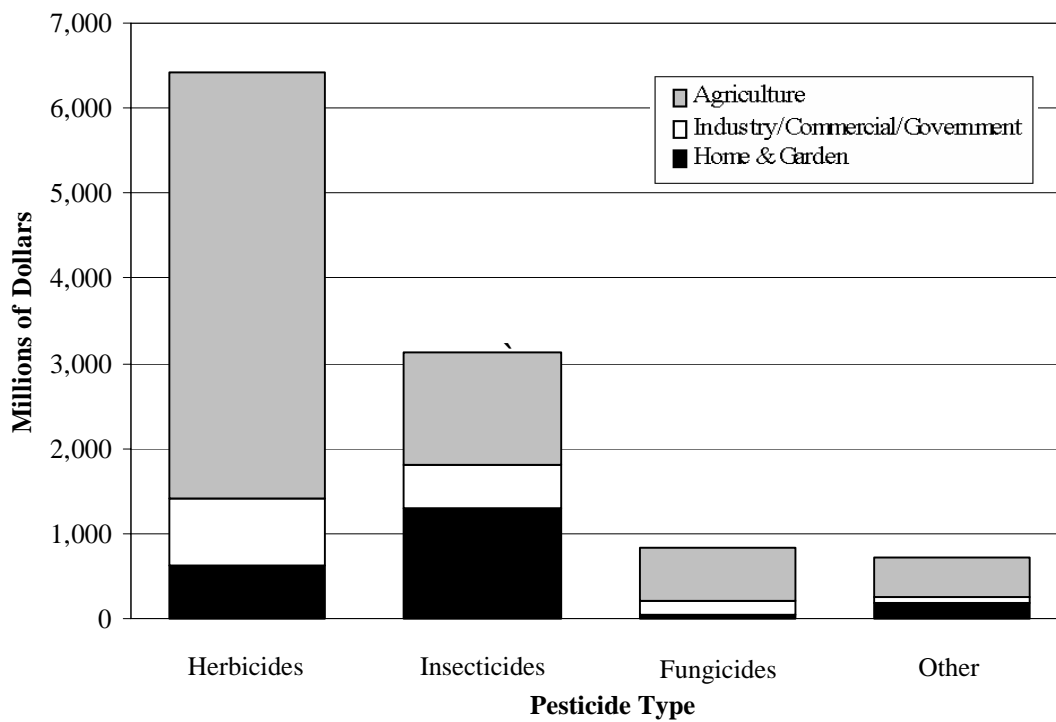
Note: Totals may not add due to rounding. Table does not cover industrial wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys and EPA proprietary data.

See Tables 5.1 to 5.4 for 1982-2001 estimates.

1. "Other" includes nematocides, fumigants, rodenticides, molluscicides, aquatic and fish/bird pesticides, other miscellaneous conventional pesticides, plus other chemicals used as pesticides (e.g., sulfur and petroleum oil).

**Figure 2.2**  
**User Expenditures on Pesticides in the U.S.**  
**by Pesticide Type and Market Sector, 2001 Estimates**



**2.4 Pesticide and Farm Expenditures in the U.S.**

Pesticides are an important component of total farm expenditures and are integral to farm budgeting and management. U.S. pesticide expenditures in 2000 and 2001 totaled 3.9% and 3.7% of total farm expenditures, respectively (see Table 2.4). Total farm expenditures increased slightly in 2001 while pesticide expenditures declined. Total farm expenditures are based on USDA estimates and pesticide expenditure estimates from Table 2.3.

**Table 2.4**  
**Farm Production Expenditures in the U.S.**

| Expenditure (Billion \$) | 2000    | 2001    |
|--------------------------|---------|---------|
| Pesticides               | \$7.6   | \$7.4   |
| Total                    | \$193.6 | \$200.8 |
| Pesticides as % of Total | 3.9%    | 3.7%    |

Source: EPA Estimates (Table 2.3); USDA/National Agricultural Statistics Service (NASS) (<http://www.usda.gov/nass>).

### 3. 2000 and 2001 Usage

#### 3.1 World and U.S. Pesticide Amount Used

World pesticide amount used exceeded 5.0 billion pounds in 2000 and 2001 (see Table 3.1). Herbicides accounted for the largest portion of total use, followed by other pesticide use, insecticide use, and fungicide use. Total world pesticide amount used decreased in 2001 for all pesticide types.

U.S. pesticide amount used in both 2000 and 2001 exceeded 1.2 billion pounds, in proportions similar to those of world pesticide use, with a larger portion of total U.S. pesticide use on herbicides and other pesticides (see Figure 3.1). U.S. pesticide amount used accounted for more than 20% of total world pesticide amount used, more than 25% of world herbicide amount used, less than 10% of world insecticide amount used, and approximately 15% and 30% of world fungicides and other pesticide amount used, respectively. The estimates of world and U.S. pesticide use rely on estimated pesticide amount used and estimated changes in pesticide amount used by type derived from public and proprietary EPA databases. Subsequent sections provide a more detailed analysis of U.S. pesticide amount used in 2000 and 2001.

**Table 3.1**  
**World and U.S. Amount of Pesticide Active Ingredient at User Level**  
**by Pesticide Type, 2000 and 2001 Estimates**

| Year                    | World Market       |     | U.S. Market        |     | U.S. Percentage<br>of World Market |
|-------------------------|--------------------|-----|--------------------|-----|------------------------------------|
|                         | Mil lbs<br>of a.i. | %   | Mil lbs<br>of a.i. | %   |                                    |
| 2000                    |                    |     |                    |     |                                    |
| Herbicides <sup>1</sup> | 1,944              | 36  | 542                | 44  | 28                                 |
| Insecticides            | 1,355              | 25  | 122                | 10  | 9                                  |
| Fungicides              | 516                | 10  | 74                 | 6   | 14                                 |
| Other <sup>2</sup>      | 1,536              | 29  | 496                | 40  | 32                                 |
| Total                   | 5,351              | 100 | 1,234              | 100 | 23                                 |
| 2001                    |                    |     |                    |     |                                    |
| Herbicides <sup>1</sup> | 1,870              | 37  | 553                | 46  | 30                                 |
| Insecticides            | 1,232              | 24  | 105                | 9   | 9                                  |
| Fungicides              | 475                | 9   | 73                 | 6   | 15                                 |
| Other <sup>2</sup>      | 1,469              | 29  | 472                | 39  | 32                                 |
| Total                   | 5,046              | 100 | 1,203              | 100 | 24                                 |

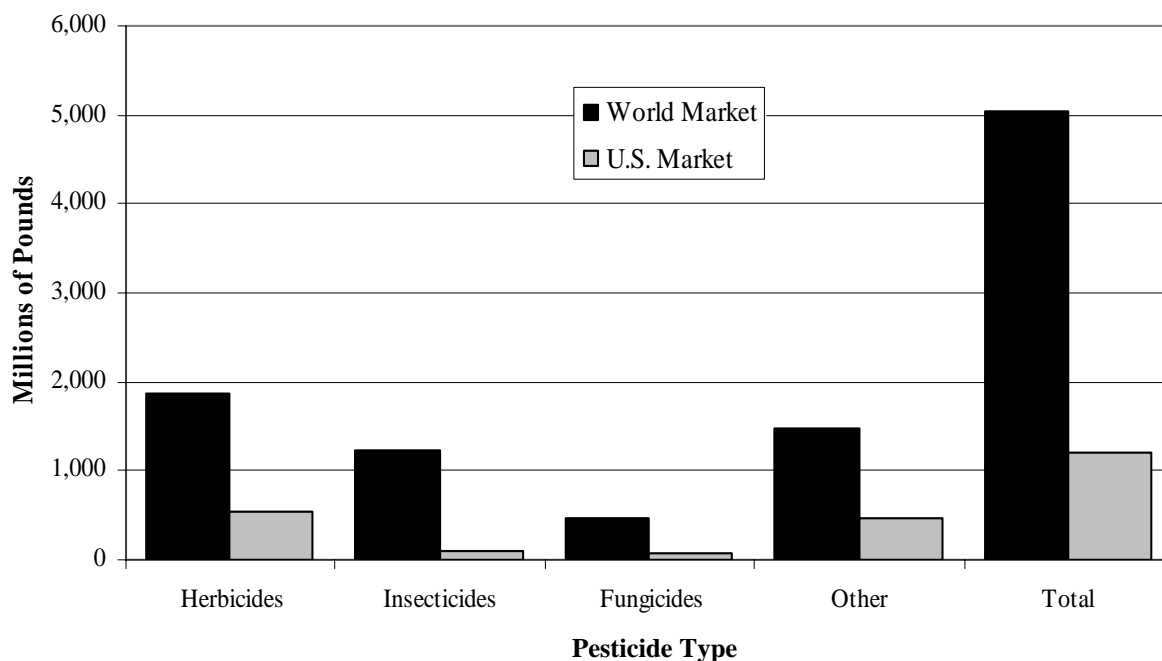
Note: Totals may not add due to rounding. Table does not cover wood preservatives, specialty biocides, and chlorine/hypochlorites. The abbreviation "a.i." stands for active ingredient.

Source: EPA estimates based on Croplife America annual surveys, Croponosis Limited data, USDA/NASS data (<http://www.usda.gov/nass>), and EPA proprietary data.

1. "Herbicides" include herbicides and plant growth regulators.

2. "Other" includes nematicides, fumigants, rodenticides, molluscicides, aquatic and fish/bird pesticides, other miscellaneous conventional pesticides, plus other chemicals used as pesticides (e.g., sulfur and petroleum oil).

**Figure 3.1**  
**World and U.S. Pesticide Amounts of Active Ingredient at User Level**  
**by Pesticide Type, 2001 Estimates**



**3.2 Pesticide Supply in the U.S.: Producer Level**

Table 3.2 summarizes the 2000 and 2001 average U.S. distribution of pesticides at the producer level, including amount of production, amount of imports, amount of exports, and amount of supply (total and net). Pesticide amount related to U.S. pesticide production and consumption comprised 1.6 billion pounds of domestic production, 0.1 billion pounds of imports, 0.4 billion pounds of exports, and 1.3 billion pounds of net supply.

**Table 3.2**  
**U.S. Pesticide Production, Imports, Exports, and Supply**  
**in Amount of Active Ingredient Produced at the Producer Level**

| Category     | Active Ingredient<br>(Billions of Pounds) |
|--------------|---|
|              | Average of 2000 and 2001                  |
| Production   | 1.6                                       |
| Imports      | 0.1                                       |
| Total Supply | 1.7                                       |
| Exports      | 0.4                                       |
| Net Supply   | 1.3                                       |

Note: Excludes industrial wood preservatives, specialty biocides, and chlorine/hypochlorites. Includes conventional pesticides and other chemicals used as pesticides (e.g., sulfur and petroleum oil). Source: EPA estimates based on Croplife America annual surveys, USDA Foreign Agricultural Service's Trade Internet System (<http://www.fas.usda.gov/ustrade>), and EPA proprietary data.

### 3.3 Pesticide Amount Used in the U.S.: Total

Total pesticide amount used in the United States approximated 5 billion pounds in both 2000 and 2001 (see Table 3.3). This estimate includes the conventional, other, wood preservative, specialty biocide, and chlorine/hypochlorite pesticide groups. With more than 2.5 billion pounds used, chlorine/hypochlorites exceeded all other pesticide groups combined (see Figure 3.2). The estimates of use by group rely on the estimated amount used and changes in estimated amount used by pesticide group derived from public and proprietary EPA databases. A discussion of the amount used of each pesticide group in 2000 and 2001 appears in subsequent sections (see footnotes to Table 3.3 for locations).

**Table 3.3**  
**Amount of Pesticides Used in the U.S.**  
**by Pesticide Group, 2000 and 2001 Estimates**

| Pesticide Group                      | Total (Million Pounds) |              |
|--------------------------------------|------------------------|--------------|
|                                      | 2000                   | 2001         |
| Conventional Pesticides <sup>1</sup> | 926                    | 888          |
| Other Pesticides <sup>2</sup>        | 308                    | 315          |
| Specialty Biocides <sup>3</sup>      | 353                    | 363          |
| Chlorine/Hypochlorites <sup>4</sup>  | 2,532                  | 2,609        |
| Wood Preservatives <sup>5</sup>      | 809                    | 797          |
| <b>Total</b>                         | <b>4,928</b>           | <b>4,972</b> |

1. See Table 3.4 (conventional pesticides) for additional details and specific source information.

2. "Other pesticides" include other chemicals used as pesticides (e.g. sulfur and petroleum oil). See Table 3.11 (other pesticides) for additional details and specific source information.

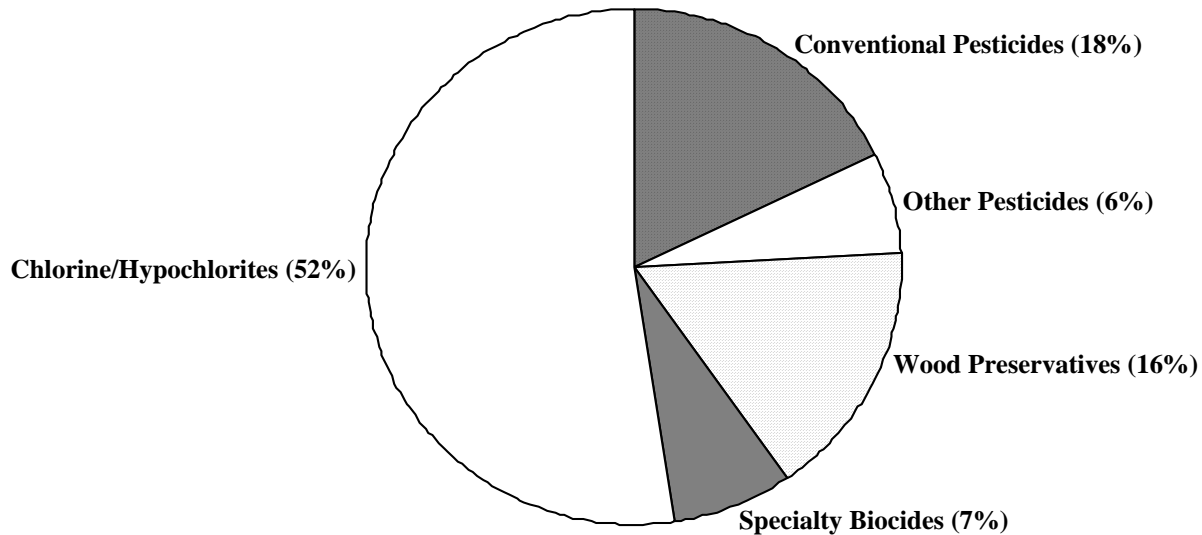
3. See Table 3.12 (specialty biocides) for additional details and specific source information.

4. See Table 3.13 (chlorine/hypochlorites) for additional details and specific source information.

5. Source: American Wood Preservatives Institute (AWPI) and EPA proprietary data.

"Wood Preservatives" include creosote, pentachlorophenol, and chromated copper arsenate (CCA).

**Figure 3.2**  
**Amount of Pesticides Used in the U.S.**  
**by Pesticide Group, 2001 Estimates**



**3.4 Amount of Pesticides Used in the U.S.: Conventional**

Table 3.4 shows that conventional pesticide amount used in 2000 and 2001 totaled 926 and 888 million pounds of active ingredient, respectively. This category of pesticide use was second highest among all pesticide groups in the U.S. after chlorine/hypochlorites. Table 3.4 shows the breakout of this use by pesticide type and market sector. Pesticide types in this group include herbicides, plant growth regulators, insecticides, miticides, fungicides, nematicides, fumigants, and others.<sup>1</sup> The amount used in the agricultural sector accounted for the majority of the total amount used in both years, with the two non-agricultural sectors (industry/commercial/government and home & garden) cumulatively accounting for less than 25% of the total use in each year (see Table 3.4). The amount used in the agriculture sector accounted for the majority of the total amount used by pesticide type in both years as well – more than 60% of the total amount used of each type, except for fungicides in 2000 (59%) and 2001 (58%). Figure 3.3 graphs the distribution of use by pesticide type and sector. The estimated use levels rely on the estimated amount used and changes in amount used of conventional pesticides by sector and type derived from public and proprietary EPA databases.

**Table 3.4  
Amount of Conventional Pesticide Active Ingredient Used in the U.S.  
by Pesticide Type and Market Sector, 2000 and 2001 Estimates**

| Year          | Herbicides / Plant Growth Regulators |            | Insecticides / Miticides |            | Fungicides      |            | Nematicide / Fumigant |            | Other Conventional <sup>1</sup> |            | Total           |            |
|---------------|--------------------------------------|------------|--------------------------|------------|-----------------|------------|-----------------------|------------|---------------------------------|------------|-----------------|------------|
|               | Mil lbs of a.i.                      | %          | Mil lbs of a.i.          | %          | Mil lbs of a.i. | %          | Mil lbs of a.i.       | %          | Mil lbs of a.i.                 | %          | Mil lbs of a.i. | %          |
| 2000          |                                      |            |                          |            |                 |            |                       |            |                                 |            |                 |            |
| Agriculture   | 432                                  | 80         | 90                       | 74         | 44              | 59         | 131                   | 84         | 25                              | 78         | 722             | 78         |
| Ind/Comm/Gov  | 48                                   | 9          | 17                       | 14         | 19              | 26         | 24                    | 15         | 6                               | 19         | 114             | 12         |
| Home & Garden | 62                                   | 11         | 15                       | 12         | 11              | 15         | 1                     | 1          | 1                               | 3          | 90              | 10         |
| <b>Total</b>  | <b>542</b>                           | <b>100</b> | <b>122</b>               | <b>100</b> | <b>74</b>       | <b>100</b> | <b>156</b>            | <b>100</b> | <b>32</b>                       | <b>100</b> | <b>926</b>      | <b>100</b> |
| 2001          |                                      |            |                          |            |                 |            |                       |            |                                 |            |                 |            |
| Agriculture   | 433                                  | 78         | 73                       | 70         | 42              | 58         | 102                   | 80         | 25                              | 83         | 675             | 76         |
| Ind/Comm/Gov  | 49                                   | 9          | 15                       | 14         | 19              | 26         | 24                    | 19         | 4                               | 13         | 111             | 13         |
| Home & Garden | 71                                   | 13         | 17                       | 16         | 12              | 16         | 1                     | 1          | 1                               | 3          | 102             | 11         |
| <b>Total</b>  | <b>553</b>                           | <b>100</b> | <b>105</b>               | <b>100</b> | <b>73</b>       | <b>100</b> | <b>127</b>            | <b>100</b> | <b>30</b>                       | <b>100</b> | <b>888</b>      | <b>100</b> |

Note: Totals may not add due to rounding. Table does not cover industrial wood preservatives, specialty biocides, chlorine/hypochlorites, and other chemicals used as pesticides (e.g., sulfur and petroleum oil). The abbreviation “a.i.” stands for active ingredient.

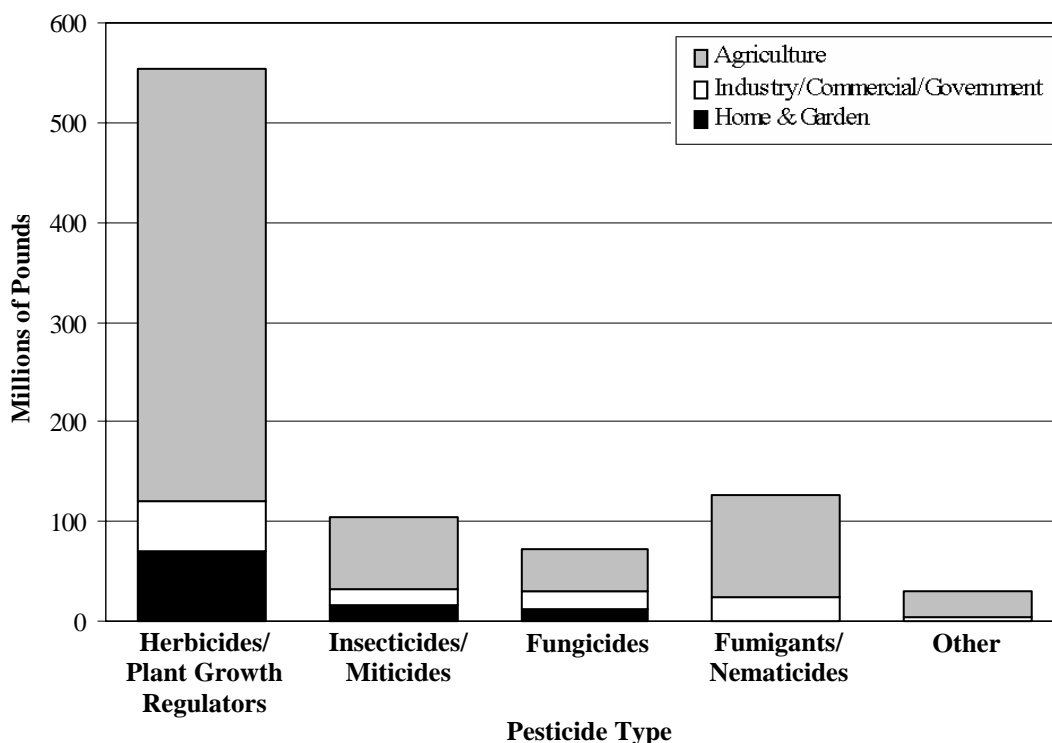
Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass/>), and EPA proprietary data.

See Tables 5.5 to 5.8 for 1982-2001 estimates.

1. “Other Conventional” pesticides include rodenticides, molluscicides, aquatic and fish/bird pesticides, and other miscellaneous conventional pesticides.



**Figure 3.3**  
**Amount of Conventional Pesticide Active Ingredient Used in the U.S.**  
**by Pesticide Type and Market Sector, 2001 Estimates**



**3.5 Share of U.S. Amount of Conventional Pesticide Active Ingredient Used in the Agricultural and Non-Agricultural Market Sectors**

Table 3.5 shows the agricultural and non-agricultural market share of total conventional pesticides consumed in 2000 and 2001. The agricultural sector accounts for more than 75% of the total amount of conventional pesticides used in both years. See Table 5.9 in the Historical Data section of this report for data covering the years 1964 through 2001.

**Table 3.5**  
**Share of U.S. Amount of Conventional Pesticide Active Ingredient**  
**Agricultural and Non-Agricultural Market Sector Shares, 2000 and 2001 Estimates**

| Year | U.S.            | Agricultural Market Sector |           | Non-Agricultural Market Sector |           |
|------|-----------------|----------------------------|-----------|--------------------------------|-----------|
|      | Mil lbs of a.i. | Mil lbs of a.i.            | % of U.S. | Mil lbs of a.i.                | % of U.S. |
| 2000 | 926             | 722                        | 78        | 204                            | 22        |
| 2001 | 888             | 675                        | 76        | 213                            | 24        |

Note: Conventional pesticides only, excluding sulfur, petroleum oil and other chemicals used as pesticides (e.g., sulfuric acid and insect repellents), wood preservatives, specialty biocides, and chlorine/hypochlorites.  
 See Table 5.9 for 1964 - 2001. The abbreviation "a.i." stands for active ingredient.  
 Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

### 3.6 Most Commonly Used Conventional Pesticide Active Ingredients in the U.S. Agricultural Market Sector

Table 3.6 shows the 25 most commonly used conventional pesticide active ingredients in the agricultural sector in 2001 and selected earlier years. Glyphosate was the most used active ingredient in 2001 (between 85 million and 90 million pounds), displacing atrazine, which had been the most used active ingredient in agriculture for a number of years. Fifteen of the top 25 active ingredients used are herbicides; three are fungicides; two are insecticides; four are fumigants; and one is a plant growth regulator. The rankings rely on the estimated pounds of conventional pesticides used in the agricultural sector, taken from public and proprietary EPA databases.

**Table 3.6**  
**Most Commonly Used Conventional Pesticide Active Ingredients,**  
**Agricultural Market Sector, 2001, 1999, 1997, and 1987 Estimates**  
**(Ranked by Range in Millions of Pounds of Active Ingredient)**

| Active Ingredient | Type | 2001 |       | 1999 |       | 1997 |       | 1987 |       |
|-------------------|------|------|-------|------|-------|------|-------|------|-------|
|                   |      | Rank | Range | Rank | Range | Rank | Range | Rank | Range |
| Glyphosate        | H    | 1    | 85-90 | 2    | 67-73 | 5    | 34-38 | 17   | 6-8   |
| Atrazine          | H    | 2    | 74-80 | 1    | 74-80 | 1    | 75-82 | 1    | 71-76 |
| Metam Sodium      | Fum  | 3    | 57-62 | 3    | 60-64 | 3    | 53-58 | 15   | 5-8   |
| Acetochlor        | H    | 4    | 30-35 | 4    | 30-35 | 7    | 31-36 | NA   | NA    |
| 2,4-D             | H    | 5    | 28-33 | 6    | 28-33 | 8    | 29-33 | 5    | 29-33 |
| Malathion         | I    | 6    | 20-25 | 7    | 28-32 | NA   | NA    | NA   | NA    |
| Methyl Bromide    | Fum  | 7    | 20-25 | 5    | 28-33 | 4    | 38-45 | NA   | NA    |
| Dichloropropene   | Fum  | 8    | 20-25 | 11   | 17-20 | 6    | 32-37 | 4    | 30-35 |
| Metolachlor-s     | H    | 9    | 20-24 | 12   | 16-19 | NA   | NA    | NA   | NA    |
| Metolachlor       | H    | 10   | 15-22 | 8    | 26-30 | 2    | 63-69 | 3    | 45-50 |
| Pendimethalin     | H    | 11   | 15-19 | 10   | 17-22 | 9    | 24-28 | 10   | 10-13 |
| Trifluralin       | H    | 12   | 12-16 | 9    | 18-23 | 10   | 21-25 | 6    | 25-30 |
| Chlorothalonil    | F    | 13   | 8-11  | 13   | 9-11  | 15   | 7-10  | 19   | 5-7   |
| Copper Hydroxide  | F    | 14   | 8-10  | 15   | 8-10  | 13   | 10-13 | 19   | 5-7   |
| Chlorpyrifos      | I    | 15   | 8-10  | 16   | 8-10  | 14   | 9-13  | 14   | 6-9   |
| Alachlor          | H    | 16   | 6-9   | 17   | 7-10  | 12   | 13-16 | 2    | 55-60 |
| Propanil          | H    | 17   | 6-9   | 18   | 7-10  | 22   | 6-8   | 13   | 7-10  |
| Chloropicrin      | Fum  | 18   | 5-9   | 14   | 8-10  | 25   | 5-6   | NA   | NA    |
| Dimethenamid      | H    | 19   | 6-8   | 20   | 6-8   | 20   | 6-9   | NA   | NA    |
| Mancozeb          | F    | 20   | 6-8   | 21   | 6-8   | 17   | 7-10  | 21   | 4-6   |
| Ethephon          | PGR  | 21   | 5-8   | 24   | 5-6   | NA   | NA    | NA   | NA    |
| EPTC              | H    | 22   | 5-8   | 19   | 7-9   | 18   | 7-10  | 8    | 17-21 |
| Simazine          | H    | 23   | 5-7   | NA   | NA    | NA   | NA    | NA   | NA    |
| Dicamba           | H    | 24   | 5-7   | 22   | 6-8   | 16   | 7-10  | 23   | 4-6   |
| Sulfosate         | H    | 25   | 3-7   | NA   | NA    | NA   | NA    | NA   | NA    |

Note: List is limited to conventional pesticides and does not include sulfur and petroleum oil usage (see Table 3.11 for estimates).

H indicates herbicide; I, insecticide; Fum, fumigant; F, fungicide; and PGR, plant growth regulator. NA indicates that an estimate is not available.

Source: EPA estimates based on USDA/NASS (<http://www.usda.gov/nass>) and EPA proprietary data.

**3.7 Most Commonly Used Conventional Pesticide Active Ingredients in the U.S. Non-Agricultural Market Sectors**

Tables 3.7 and 3.8 show the ten most commonly used conventional pesticide active ingredients in the two non-agricultural sectors (home & garden and industry/commercial/government) in both 2001 and 1999. In both sectors, 2,4-D was the most used active ingredient, with between eight and eleven million pounds used in the home and garden sector (see Table 3.7), and between 16 and 18 million pounds used in the industry/commercial/government sector (see Table 3.8). Seven of the top ten in the home and garden sector are herbicides and three are insecticides. Six of the top ten in the industry/commercial/government sector are herbicides, two are fungicides, and two are insecticides. As noted in Table 3.8, due to the fact that some applicators apply pesticide in both markets, there may be some usage reported in one market that may have occurred in the other. The rankings rely on the estimated amount used of conventional pesticides in the non-agricultural sector taken from EPA proprietary databases.

**Table 3.7  
Most Commonly Used Conventional Pesticide Active Ingredients, Home and Garden Market Sector, 2001 and 1999 Estimates (Ranked by Range in Millions of Pounds of Active Ingredient)**

| Active Ingredient | Type | 2001 |       | 1999 |       |
|-------------------|------|------|-------|------|-------|
|                   |      | Rank | Range | Rank | Range |
| 2,4-D             | H    | 1    | 8-11  | 1    | 7-9   |
| Glyphosate        | H    | 2    | 5-8   | 2    | 5-8   |
| Pendimethalin     | H    | 3    | 3-6   | NA   | NA    |
| Diazinon          | I    | 4    | 4-6   | 5    | 2-4   |
| MCPP              | H    | 5    | 4-6   | 3    | 3-5   |
| Carbaryl          | I    | 6    | 2-4   | 7    | 2-4   |
| Dicamba           | H    | 7    | 2-4   | 4    | 3-5   |
| Malathion         | I    | 8    | 2-4   | 9    | 1-3   |
| DCPA              | H    | 9    | 1-3   | 10   | 1-3   |
| Benefin           | H    | 10   | 1-3   | 8    | 1-3   |

Note: Does not include moth controls: Paradiolobenzene (30 - 35 million pounds per year) and naphthalene (2 - 4 million pounds per year). Also does not include insect repellent N,N-diethyl-meta-toluamide (5 - 7 millions pounds per year). H indicates herbicide and I, insecticide. NA indicates that an estimate is not available. Source: EPA proprietary data.

**Table 3.8  
Most Commonly Used Conventional Pesticide Active Ingredients, Industry/Commercial/Government Market Sector, 2001 and 1999 Estimates (Ranked by Range in Millions of Pounds of Active Ingredient)**

| Active Ingredient | Type | 2001 |       | 1999 |       |
|-------------------|------|------|-------|------|-------|
|                   |      | Rank | Range | Rank | Range |
| 2,4-D             | H    | 1    | 16-18 | 1    | 17-20 |
| Glyphosate        | H    | 2    | 13-15 | 2    | 11-14 |
| Copper Sulfate    | F    | 3    | 4-6   | 3    | 5-7   |
| Pendimethalin     | H    | 4    | 3-5   | 4    | 3-5   |
| Chlorothalanyl    | F    | 5    | 2-4   | 7    | 2-4   |
| Chlorpyrifos      | I    | 6    | 2-4   | 5    | 3-5   |
| Diuron            | H    | 7    | 2-4   | 8    | 2-4   |
| MSMA              | H    | 8    | 2-4   | 6    | 2-4   |
| Triclopyr         | H    | 9    | 1-3   | 10   | 1-3   |
| Malathion         | I    | 10   | 1-3   | 9    | 1-3   |

Note: Includes applications to homes and gardens by professional applicators. Does not include sulfur or petroleum oil. H indicates herbicide; I, insecticide; and F, fungicide. Source: EPA proprietary data.

### 3.8 Amount of Organophosphate Insecticides Used in the U.S.

Table 3.9 shows the total amount of organophosphate insecticide used in 1980, 1985, and annually since 1990. The top ten active ingredients in this pesticide class include malathion, chlorpyrifos, terbufos, diazinon, methyl-parathion, phorate, acephate, phosmet, azinphos-methyl, and dimethoate (see Table 3.10). Since the passage of the Food Quality Protection Act (FQPA) in 1996, this class of conventional pesticides has been a primary focus of EPA reregistration activities. For more information on the active ingredients included in this pesticide class and their reregistration and registration status, go to U.S. EPA's Office of Pesticide Programs Web site at <http://www.epa.gov/pesticides/op/>.

The amount of organophosphate insecticides used has declined nearly 45% since 1980, from an estimated 131 million pounds in 1980 to 73 million pounds in 2001 (see Figure 3.4). Since 1980, however, organophosphate use as a percent of total insecticide use has increased, from 58% in 1980 to 70% in 2001. The increase in use in 1999 was due mainly to the increased amount of malathion used as part of the USDA-sponsored Boll Weevil Eradication Program (<http://www.aphis.usda.gov/ppq/weevil/>). Malathion use in this program decreased over the last two years, resulting in a decline in total organophosphate use. The estimates of organophosphate insecticide use rely on the estimated amount used and changes in the amount used of organophosphates from public and proprietary EPA databases.

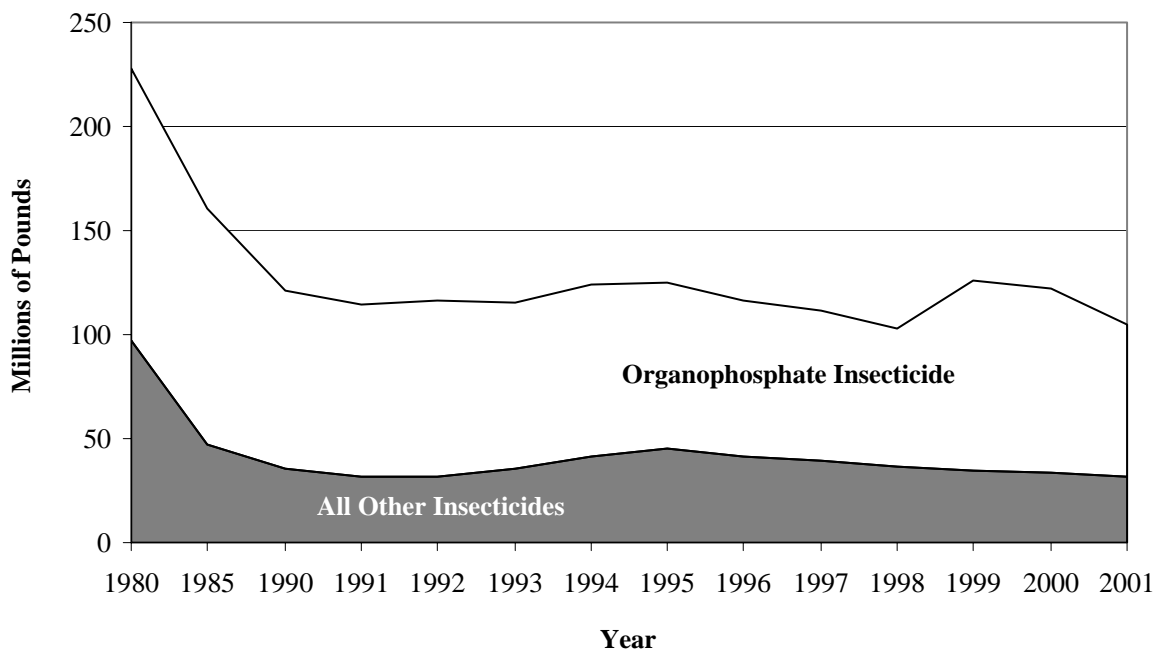
**Table 3.9**  
**Amount of Organophosphate Insecticide Active Ingredients Used in the U.S.,**  
**All Market Sectors, 1980 - 2001 Estimates**

| Year | All Insecticides | Organophosphates |                       |
|------|------------------|------------------|-----------------------|
|      | Mil lbs of a.i.  | Mil lbs of a.i.  | % of All Insecticides |
| 1980 | 228              | 131              | 58                    |
| 1985 | 161              | 114              | 71                    |
| 1990 | 121              | 85               | 70                    |
| 1991 | 114              | 82               | 72                    |
| 1992 | 116              | 84               | 72                    |
| 1993 | 115              | 79               | 69                    |
| 1994 | 124              | 83               | 67                    |
| 1995 | 125              | 80               | 64                    |
| 1996 | 116              | 75               | 65                    |
| 1997 | 112              | 73               | 65                    |
| 1998 | 103              | 66               | 64                    |
| 1999 | 126              | 91               | 72                    |
| 2000 | 122              | 88               | 72                    |
| 2001 | 105              | 73               | 70                    |

Note: The abbreviation "a.i." stands for active ingredient.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass/>), and EPA proprietary data.

**Figure 3.4**  
**Total Amount of Organophosphate and All Other Insecticides Active Ingredients**  
**Used in the U.S. in All Market Sectors, 1980 - 2001**



**Table 3.10**  
**Most Commonly Used Organophosphate Insecticide Active Ingredients,**  
**All Market Sectors, 2001 and 1999 Estimates**  
**(Ranked by Range in Millions of Pounds of Active Ingredient)**

| Active Ingredient | 2001 |       | 1999 |       |
|-------------------|------|-------|------|-------|
|                   | Rank | Range | Rank | Range |
| Malathion         | 1    | 23-32 | 1    | 30-38 |
| Chlorpyrifos      | 2    | 11-16 | 2    | 13-19 |
| Diazinon          | 3    | 4-7   | 4    | 4-7   |
| Terbufos          | 4    | 3-5   | 3    | 5-7   |
| Acephate          | 5    | 2-3   | 7    | 2-3   |
| Phorate           | 6    | 2-3   | 6    | 2-3   |
| Methyl Parathion  | 7    | 1-3   | 5    | 2-4   |
| Phosmet           | 8    | 1-2   | 9    | 1-2   |
| Azinphos-Methyl   | 9    | 1-2   | 8    | 1-2   |
| Dimethoate        | 10   | 1-2   | 10   | 1-2   |

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass/>), and EPA proprietary data.

### 3.9 Pesticide Amount Used in the U.S.: Other

The total amount of other pesticides used in the U.S. was more than 300 million pounds in 2000 and 2001 (see Table 3.11). The pesticides in this group include sulfur and petroleum oil and other chemicals used as pesticides, such as sulfuric acid, insect repellants (e.g., DEET), moth control products (e.g., paradichlorobenzene), and others.<sup>1</sup> Nearly all of the sulfur and oil used (85%) is in the agricultural sector, while the use of the other pesticides in this group is mainly in the agricultural and home and garden sectors (93%). The increase in the amount used in 2001 resulted mainly from an increase in the use of sulfur and petroleum oil in the agricultural sector. The amount of sulfur and petroleum oil and of the other pesticides used in this group in the non-agricultural sectors did not change substantially between 2000 and 2001. Nearly three-fourths of the total amount of sulfur, oil, and other pesticides used was in the agricultural sector. The estimated use levels rely on the amount used and changes in the amount used of sulfur, oil, and other pesticides by sector and type derived from public and proprietary EPA databases.

**Table 3.11**  
**Other Pesticides Used in the U.S.**  
**by Pesticide Type and Market Sector, 2000 and 2001 Estimates**

| Year          | Sulfur & Oil       |     | Other <sup>1</sup> |     | Total              |     |
|---------------|--------------------|-----|--------------------|-----|--------------------|-----|
| Sector        | Mil lbs<br>of a.i. | %   | Mil lbs<br>of a.i. | %   | Mil lbs<br>of a.i. | %   |
| 2000          |                    |     |                    |     |                    |     |
| Agriculture   | 166                | 85  | 60                 | 53  | 226                | 73  |
| Ind/Comm/Gov  | 14                 | 7   | 8                  | 7   | 22                 | 7   |
| Home & Garden | 15                 | 8   | 45                 | 40  | 60                 | 19  |
| Total         | 195                | 100 | 113                | 100 | 308                | 100 |
| 2001          |                    |     |                    |     |                    |     |
| Agriculture   | 172                | 86  | 60                 | 53  | 232                | 74  |
| Ind/Comm/Gov  | 14                 | 7   | 8                  | 7   | 22                 | 7   |
| Home & Garden | 15                 | 7   | 46                 | 40  | 61                 | 19  |
| Total         | 201                | 100 | 114                | 100 | 315                | 100 |

Note: Totals may not add due to rounding. Table estimates do not include industrial wood preservatives, specialty biocides, and chlorine/hypochlorites. The abbreviation "a.i." stands for active ingredient.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

See Tables 5.5 to 5.8 for 1982-2001 estimates.

1. "Other" includes sulfuric acid, insect repellents, zinc sulfate, moth control chemicals (e.g., Paradichlorobenzene and naphthalene), and other miscellaneous chemicals produced largely for non-pesticidal purposes.

### 3.10 Pesticide Amount Used in the U.S.: Specialty Biocides and Chlorine/Hypochlorites

Tables 3.12 and 3.13 show the total amount of specialty biocides and chlorine/hypochlorites by end-use market in the U.S. in 2000 and 2001, respectively. Specialty biocides include water treatment chemicals, disinfectants and sanitizers, and products for other uses, such as in adhesives and sealants, leather, etc. More than two-thirds of the total amount of specialty biocides comprised water treatment chemicals. Chlorine/hypochlorites serve as water disinfectants, with 60% of their amount used in potable and waste water and 40% in recreational water. The estimates of the amount used rely on EPA proprietary databases and industry projections.

**Table 3.12**  
**Specialty Biocides Used in the U.S.**  
**by End Use Market, 2000 and 2001 Estimates**

| Year   | Total   |     |
|--|---------|-----|
|  | Mil lbs | %   |
| End Use  |         |     |
| 2000   |         |     |
| Recreational and Industrial Water Treatment <sup>1</sup> | 237     | 67  |
| Disinfectants and Sanitizers <sup>2</sup>                | 64      | 18  |
| Other Specialty Biocides <sup>3</sup>                    | 52      | 15  |
| Total  | 353     | 100 |
| 2001   |         |     |
| Recreational and Industrial Water Treatment <sup>1</sup> | 244     | 67  |
| Disinfectants and Sanitizers <sup>2</sup>                | 65      | 18  |
| Other Specialty Biocides <sup>3</sup>                    | 54      | 15  |
| Total  | 363     | 100 |

Source: EPA estimates based on EPA proprietary data.

1. "Recreational and Industrial Water Treatment" does not include hypochlorite or chlorine consumption, which is reported separately in Table 3.13.

2. "Disinfectants and Sanitizers" includes industrial/institutional applications and household cleaning products. Specialty biocides only. Does not include hypochlorite or chlorine consumption, which is reported separately.

3. "Other Specialty Biocides" includes biocides for adhesives and sealants, leather, synthetic latex polymers, metalworking fluids, paints and coatings, petroleum products, plastics, and mineral slurries.

**Table 3.13**  
**Chlorine/Hypochlorites Used in the U.S.**  
**by End Use Market, 2000 and 2001 Estimates**

| Year                                    | Total   |     |
|---|---------|-----|
|   | Mil lbs | %   |
| End Use                                 |         |     |
| 2000                                    |         |     |
| Disinfectant of Potable and Waste Water | 1,520   | 60  |
| Disinfectant for Recreational Water     | 1,012   | 40  |
| Total                                   | 2,532   | 100 |
| 2001                                    |         |     |
| Disinfectant of Potable and Waste Water | 1,566   | 60  |
| Disinfectant for Recreational Water     | 1,043   | 40  |
| Total                                   | 2,609   | 100 |

Note: The estimated amount has not changed from 1998/1999 due to a lack of available data.

Source: EPA estimates based on EPA proprietary data.

## 4. Producers and Users

### 4.1 Pesticide Producers and Users

Table 4.1 lists estimates of the number of firms that are pesticide producers, formulators, and distributors. Table 4.2 lists estimates of farm land, acres harvested, and the number of farms using pesticides and fertilizers. Table 4.3 lists estimates of the number of pest control firms and certified pesticide applicators. Table 4.4 lists estimates of the number of households using pesticides.

**Table 4.1**  
**Number of U.S. Pesticide Producers, Formulators, and Distributors**

|                                       |           |
|---------------------------------------|-----------|
| Major Pesticide Producers             | 18        |
| Other Pesticide Producers             | 100       |
| Major Pesticide Formulators           | 150 - 200 |
| Other Pesticide Formulators           | 2,000     |
| Major Distributors and Establishments | 250 - 350 |
| Other Distributors and Establishments | 16,900    |

Source: EPA estimates based on EPA proprietary data.

**Table 4.2**  
**Land in Farms, Land Harvested, Number of Farms, and Farms Using Pesticides**

|   |           |
|---|-----------|
| Land in Farms (acres)                         | 941M      |
| Land Harvested (acres)                        | 311M      |
| Total Number of Farms                         | 2.156M    |
| Total Number of Farms with Cropland           | 1.661M    |
| Total Number of Farms with Harvested Cropland | 1.411M    |
| Number of Farms Using Chemicals for:          |           |
| Insects on Crops/Hay                          | 366,000   |
| Nematodes                                     | 43,000    |
| Diseases on Crops/Orchards                    | 112,000   |
| Weed/Grass/Brush                              | 685,000   |
| Defoliation/Fruit Thinning                    | 51,000    |
| Any or all of the above                       | 941,000   |
| Any or all of the above plus fertilizer       | 1,325,000 |

Source: 1997 USDA Census of Agriculture (<http://www.nass.usda.gov/Census/>), 2003 USDA Agricultural Statistics (<http://www.usda.gov/nass/pubs/agstats/htm>). M = million

**Table 4.3**  
**Number of Commercial Pest Control Firms and Number of Certified Applicators**

|   |         |
|---|---------|
| Commercial Pest Control Firms                 | 33,100  |
| Private <sup>1</sup> Certified Applicators    | 693,181 |
| Commercial <sup>2</sup> Certified Applicators | 421,730 |

Source: Estimates based on 1992 EPA National Home and Garden Pesticide Use Survey and 2001 EPA estimates of the number of certified private and commercial pesticide applicators.

1. Private certified applicators refers primarily to individual farmers.
2. Commercial certified applicators refers to professional pesticide applicators.

**Table 4.4**  
**Number of U.S. Households Using Pesticides**

| Pesticide Type | U.S. Households |
|----------------|-----------------|
| Insecticides   | 59 Million      |
| Fungicides     | 14 Million      |
| Herbicides     | 41 Million      |
| Repellents     | 53 Million      |
| Disinfectants  | 59 Million      |
| Any Pesticides | 78 Million      |

Note: In 2000 the U.S. Census Bureau estimated the U.S. population to be 281.4 million with 105.5 million households. Source: EPA estimates based on 1992 EPA National Home and Garden Survey and 2000 U.S. Census Bureau population estimates (<http://quickfacts.census.gov/qfd/states/>).



## 5. Historical Data

### 5.1 Annual Expenditures on Pesticides in the U.S.: 1982 - 2001

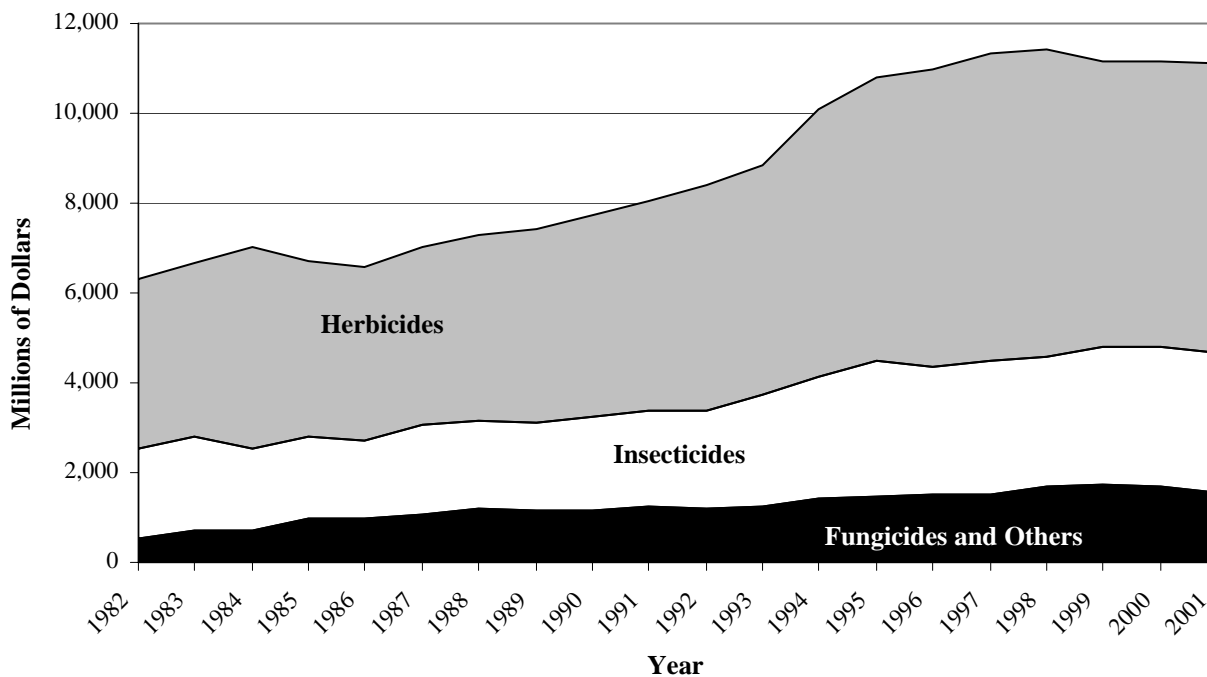
Tables 5.1 through 5.4 and corresponding figures summarize annual user expenditures on pesticides since 1982. Table 5.1 summarizes user expenditures on pesticides in all markets combined, while Tables 5.2, 5.3 and 5.4 and corresponding figures summarize user expenditures in the agricultural, industry/commercial/government, and home and garden markets, respectively. In each market, user expenditures on pesticides have increased in total and by type since 1982, although the total amount fluctuated from year to year.

**Table 5.1**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**All Market Sectors**

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

Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.  
 Source: EPA estimates based on Croplife America annual surveys and EPA proprietary data.

**Figure 5.1**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**All Market Sectors**

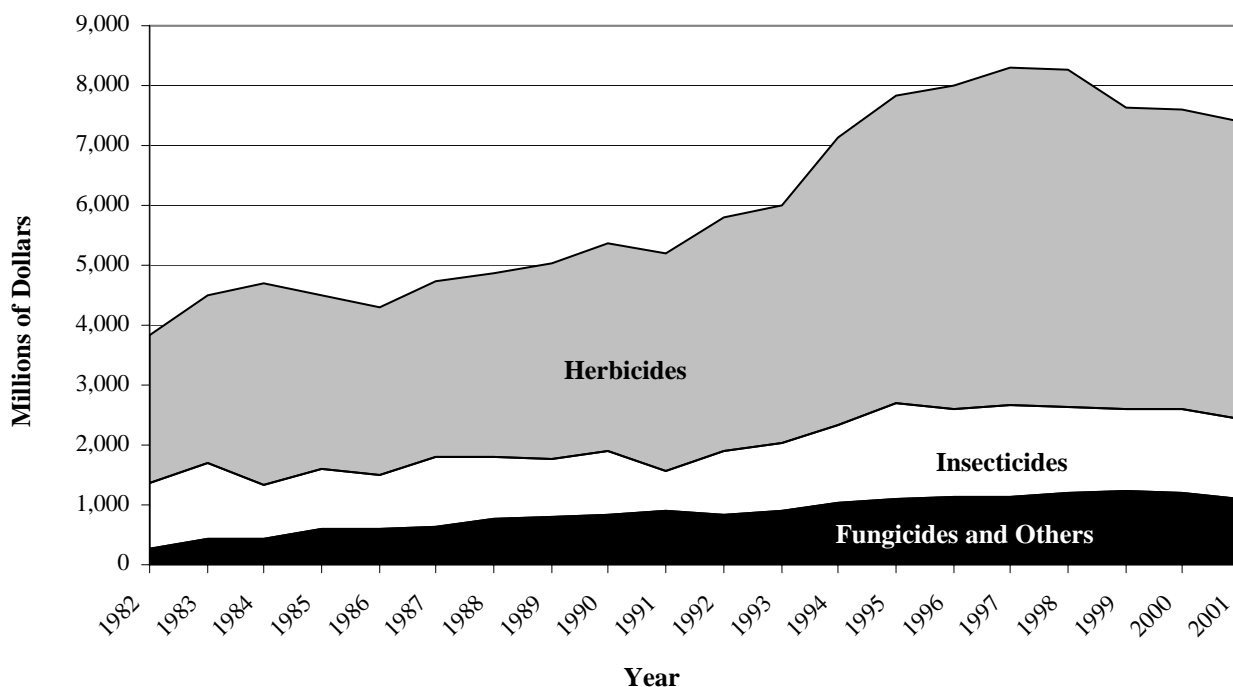


**Table 5.2**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Agricultural Market Sector**

| Year | Expenditure (Millions of Dollars) |              |                         |       | Year | Expenditure (Millions of Dollars) |              |                         |       |
|------|-----------------------------------|--------------|-------------------------|-------|------|-----------------------------------|--------------|-------------------------|-------|
|      | Herbicides/<br>PGR                | Insecticides | Fungicides<br>and Other | Total |      | Herbicides/<br>PGR                | Insecticides | Fungicides<br>and Other | Total |
| 1982 | 2,465                             | 1,109        | 268                     | 3,842 | 1992 | 3,915                             | 1,058        | 829                     | 5,802 |
| 1983 | 2,800                             | 1,261        | 450                     | 4,511 | 1993 | 3,987                             | 1,123        | 895                     | 6,005 |
| 1984 | 3,390                             | 903          | 418                     | 4,711 | 1994 | 4,808                             | 1,293        | 1,036                   | 7,137 |
| 1985 | 2,900                             | 990          | 615                     | 4,505 | 1995 | 5,112                             | 1,607        | 1,107                   | 7,826 |
| 1986 | 2,775                             | 914          | 600                     | 4,289 | 1996 | 5,399                             | 1,480        | 1,128                   | 8,007 |
| 1987 | 2,935                             | 1,145        | 650                     | 4,730 | 1997 | 5,610                             | 1,551        | 1,124                   | 8,285 |
| 1988 | 3,080                             | 1,010        | 775                     | 4,865 | 1998 | 5,632                             | 1,427        | 1,209                   | 8,268 |
| 1989 | 3,255                             | 978          | 800                     | 5,033 | 1999 | 5,012                             | 1,370        | 1,243                   | 7,625 |
| 1990 | 3,463                             | 1,067        | 842                     | 5,372 | 2000 | 5,007                             | 1,411        | 1,194                   | 7,612 |
| 1991 | 3,644                             | 687          | 884                     | 5,215 | 2001 | 4,987                             | 1,326        | 1,091                   | 7,404 |

Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.  
 Source: EPA estimates based on Croplife America annual surveys and EPA proprietary data.

**Figure 5.2**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Agricultural Market Sector**

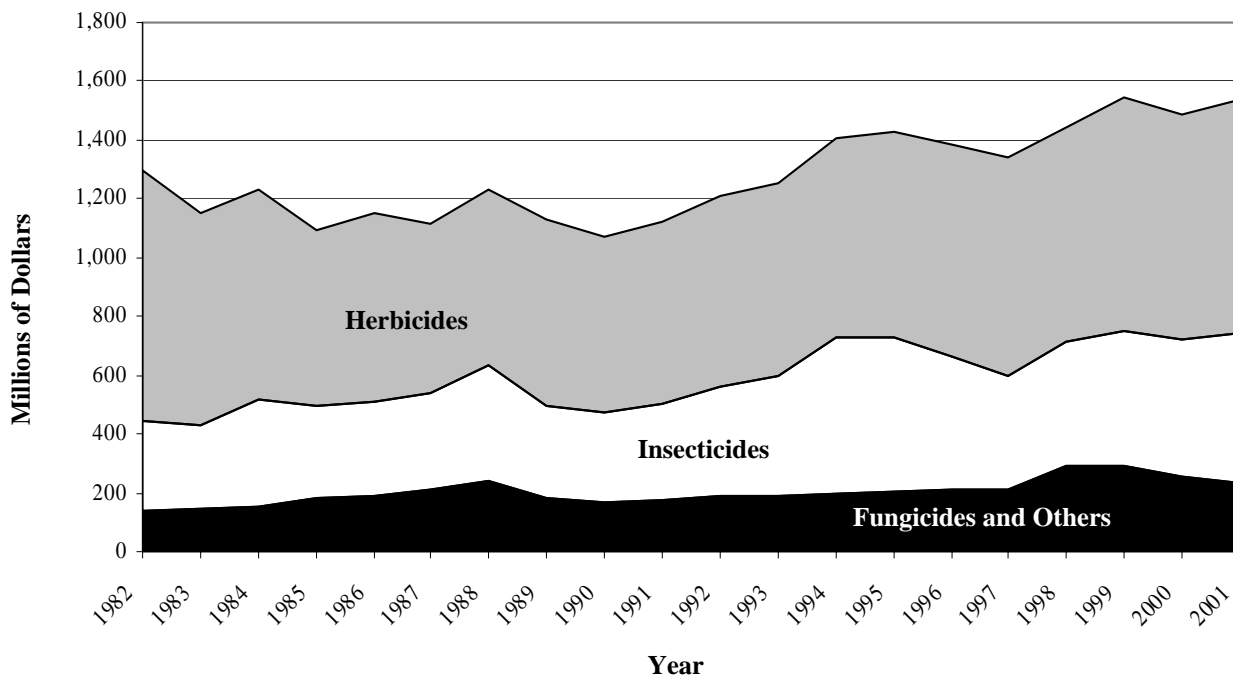


**Table 5.3**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Industry/Commercial/Government Market Sector**

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

Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.  
 Source: EPA estimates based on Croplife America annual surveys and EPA proprietary data.

**Figure 5.3**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Industry/Commercial/Government Market Sector**

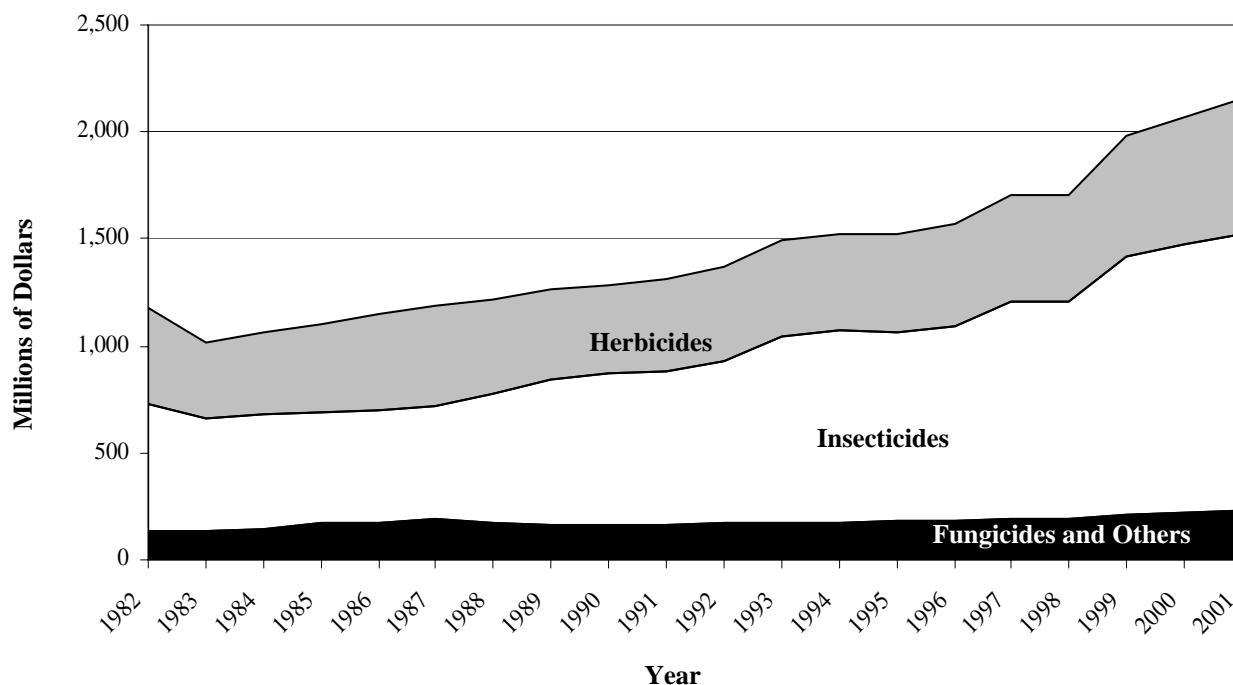


**Table 5.4**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Home and Garden Market Sector**

| Year | Expenditure (Millions of Dollars) |              |                         |       | Year | Expenditure (Millions of Dollars) |              |                         |       |
|------|-----------------------------------|--------------|-------------------------|-------|------|-----------------------------------|--------------|-------------------------|-------|
|      | Herbicides/<br>PGR                | Insecticides | Fungicides<br>and Other | Total |      | Herbicides/<br>PGR                | Insecticides | Fungicides<br>and Other | Total |
| 1982 | 445                               | 600          | 130                     | 1,175 | 1992 | 441                               | 762          | 168                     | 1,371 |
| 1983 | 350                               | 525          | 137                     | 1,012 | 1993 | 446                               | 870          | 174                     | 1,490 |
| 1984 | 378                               | 542          | 140                     | 1,060 | 1994 | 456                               | 895          | 175                     | 1,526 |
| 1985 | 420                               | 518          | 168                     | 1,106 | 1995 | 465                               | 883          | 179                     | 1,527 |
| 1986 | 441                               | 529          | 175                     | 1,145 | 1996 | 479                               | 910          | 185                     | 1,574 |
| 1987 | 462                               | 534          | 189                     | 1,185 | 1997 | 493                               | 1,020        | 190                     | 1,703 |
| 1988 | 441                               | 601          | 175                     | 1,217 | 1998 | 493                               | 1,020        | 190                     | 1,703 |
| 1989 | 420                               | 683          | 161                     | 1,264 | 1999 | 562                               | 1,213        | 209                     | 1,984 |
| 1990 | 417                               | 710          | 160                     | 1,287 | 2000 | 596                               | 1,250        | 222                     | 2,068 |
| 1991 | 423                               | 724          | 162                     | 1,309 | 2001 | 631                               | 1,288        | 232                     | 2,151 |

Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.  
 Source: EPA estimates based on Croplife America annual surveys and EPA proprietary data.

**Figure 5.4**  
**Annual User Expenditures on Pesticides in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Home and Garden Market Sector**



## 5.2 Annual Amount of Pesticides Used in the U.S.: 1982 - 2001

Tables 5.5 through 5.8 and corresponding figures summarize annual pounds of pesticides used since 1982. Table 5.5 summarizes the amount of pesticides used in all markets combined, while Tables 5.6, 5.7 and 5.8 and corresponding figures summarize the amount of pesticides used in the agricultural, industry/commercial/government, and home and garden markets, respectively. In each market, except home and garden, the amount of pesticides used has decreased in total since 1982, although the total amount fluctuated from year to year.

**Table 5.5**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**All Market Sectors**

| Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       | Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       |
|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|
|      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |
| 1982 | 620                                 | 198               | 117             | 149                        | 298                | 1,382 | 1992 | 554                                 | 116               | 81              | 189                        | 246                | 1,186 |
| 1983 | 573                                 | 185               | 115             | 148                        | 287                | 1,308 | 1993 | 527                                 | 115               | 80              | 192                        | 248                | 1,162 |
| 1984 | 634                                 | 173               | 109             | 145                        | 284                | 1,345 | 1994 | 583                                 | 124               | 79              | 199                        | 244                | 1,229 |
| 1985 | 611                                 | 161               | 110             | 138                        | 284                | 1,304 | 1995 | 556                                 | 125               | 77              | 203                        | 249                | 1,210 |
| 1986 | 590                                 | 151               | 109             | 138                        | 278                | 1,266 | 1996 | 578                                 | 116               | 79              | 222                        | 234                | 1,229 |
| 1987 | 532                                 | 141               | 100             | 133                        | 269                | 1,175 | 1997 | 568                                 | 112               | 81              | 197                        | 270                | 1,228 |
| 1988 | 557                                 | 132               | 99              | 137                        | 266                | 1,191 | 1998 | 555                                 | 103               | 86              | 168                        | 294                | 1,206 |
| 1989 | 567                                 | 123               | 98              | 154                        | 251                | 1,193 | 1999 | 534                                 | 126               | 79              | 173                        | 332                | 1,244 |
| 1990 | 564                                 | 121               | 91              | 173                        | 252                | 1,201 | 2000 | 542                                 | 122               | 74              | 188                        | 308                | 1,234 |
| 1991 | 546                                 | 114               | 86              | 182                        | 226                | 1,154 | 2001 | 553                                 | 105               | 73              | 157                        | 315                | 1,203 |

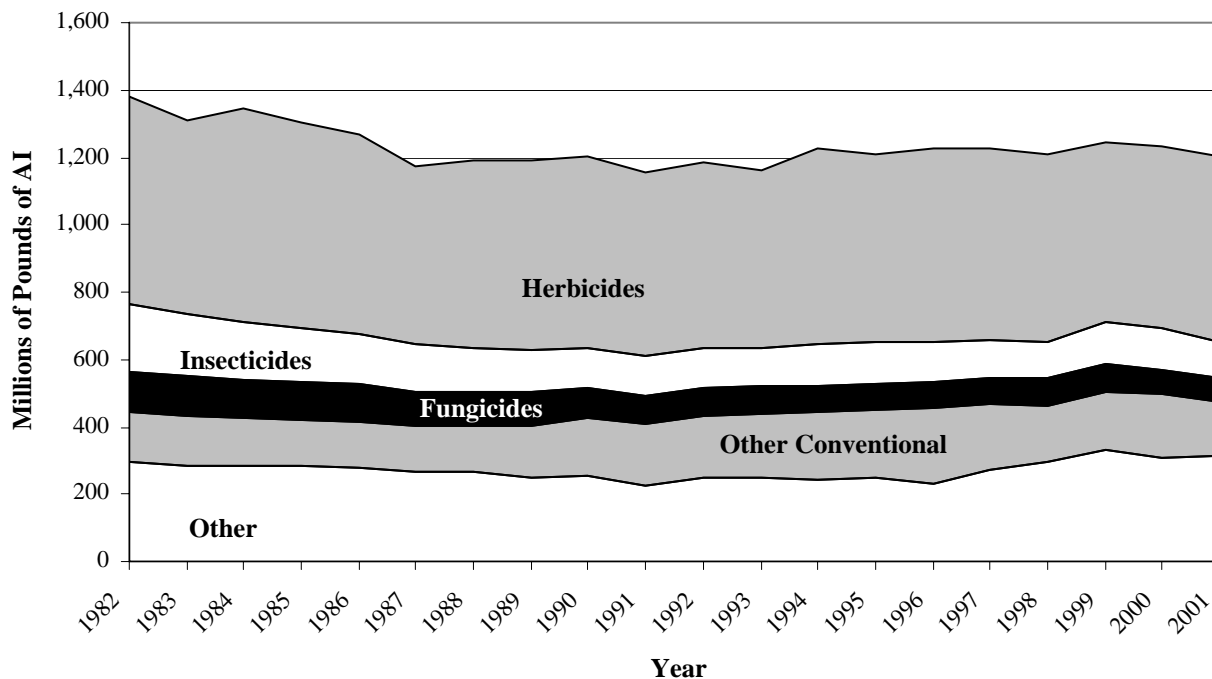
Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

1. Other conventional pesticides include nematocides, fumigants, and other conventional pesticides.

2. "Other" includes sulfur, petroleum, and other chemicals used as pesticides (e.g., sulfuric acid and insect repellents).

**Figure 5.5**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**All Market Sectors**



**Table 5.6**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Agricultural Market Sector**

| Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       | Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       |
|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|
|      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |
| 1982 | 503                                 | 141               | 59              | 101                        | 207                | 1011  | 1992 | 450                                 | 78                | 45              | 150                        | 161                | 884   |
| 1983 | 455                                 | 131               | 59              | 100                        | 196                | 941   | 1993 | 425                                 | 72                | 47              | 154                        | 166                | 864   |
| 1984 | 516                                 | 122               | 56              | 100                        | 194                | 988   | 1994 | 485                                 | 80                | 48              | 163                        | 163                | 939   |
| 1985 | 501                                 | 113               | 59              | 94                         | 194                | 961   | 1995 | 461                                 | 85                | 49              | 170                        | 168                | 933   |
| 1986 | 481                                 | 105               | 59              | 94                         | 188                | 927   | 1996 | 481                                 | 81                | 51              | 190                        | 152                | 955   |
| 1987 | 425                                 | 98                | 52              | 91                         | 180                | 846   | 1997 | 470                                 | 79                | 53              | 165                        | 188                | 955   |
| 1988 | 450                                 | 91                | 54              | 95                         | 177                | 867   | 1998 | 465                                 | 69                | 54              | 136                        | 212                | 936   |
| 1989 | 460                                 | 85                | 54              | 113                        | 161                | 873   | 1999 | 428                                 | 93                | 45              | 140                        | 250                | 956   |
| 1990 | 455                                 | 82                | 50              | 133                        | 164                | 884   | 2000 | 432                                 | 90                | 44              | 156                        | 226                | 948   |
| 1991 | 440                                 | 77                | 47              | 144                        | 140                | 848   | 2001 | 433                                 | 73                | 42              | 127                        | 232                | 907   |

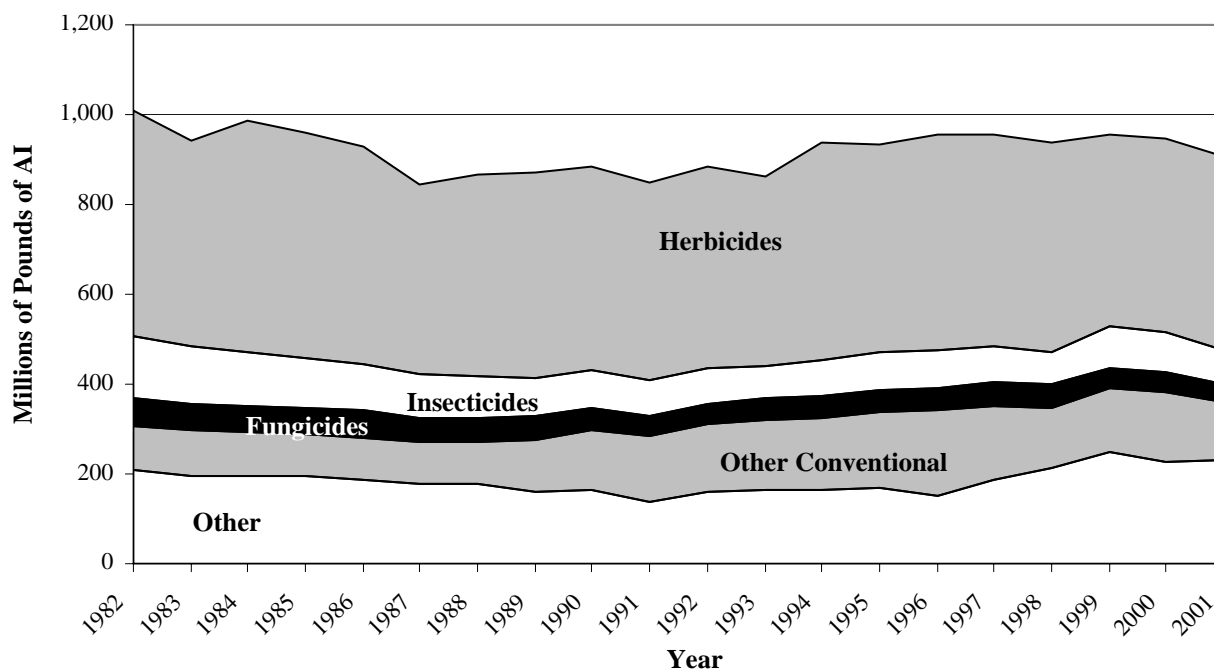
Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

1. Other conventional pesticides include nematocides, fumigants, and other conventional pesticides.

2. "Other" includes sulfur, petroleum, and other chemicals used as pesticides (e.g., sulfuric acid and insect repellents).

**Figure 5.6**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Agricultural Market Sector**





**Table 5.7**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Industry/Commercial/Government Market Sector**

| Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       | Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       |
|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|
|      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |
| 1982 | 80                                  | 33                | 41              | 45                         | 24                 | 223   | 1992 | 58                                  | 27                | 28              | 36                         | 21                 | 170   |
| 1983 | 80                                  | 32                | 40              | 45                         | 24                 | 221   | 1993 | 56                                  | 30                | 25              | 36                         | 20                 | 167   |
| 1984 | 78                                  | 31                | 38              | 41                         | 24                 | 212   | 1994 | 52                                  | 30                | 23              | 34                         | 20                 | 159   |
| 1985 | 70                                  | 30                | 37              | 41                         | 23                 | 201   | 1995 | 48                                  | 28                | 20              | 31                         | 22                 | 149   |
| 1986 | 68                                  | 29                | 36              | 41                         | 23                 | 197   | 1996 | 49                                  | 24                | 20              | 30                         | 22                 | 145   |
| 1987 | 65                                  | 28                | 34              | 39                         | 22                 | 188   | 1997 | 49                                  | 20                | 20              | 30                         | 22                 | 141   |
| 1988 | 64                                  | 27                | 32              | 39                         | 22                 | 184   | 1998 | 41                                  | 21                | 24              | 30                         | 22                 | 138   |
| 1989 | 63                                  | 27                | 31              | 38                         | 22                 | 181   | 1999 | 52                                  | 19                | 24              | 31                         | 22                 | 148   |
| 1990 | 63                                  | 27                | 31              | 38                         | 22                 | 181   | 2000 | 48                                  | 17                | 19              | 30                         | 22                 | 136   |
| 1991 | 60                                  | 26                | 30              | 37                         | 21                 | 174   | 2001 | 49                                  | 15                | 19              | 28                         | 22                 | 133   |

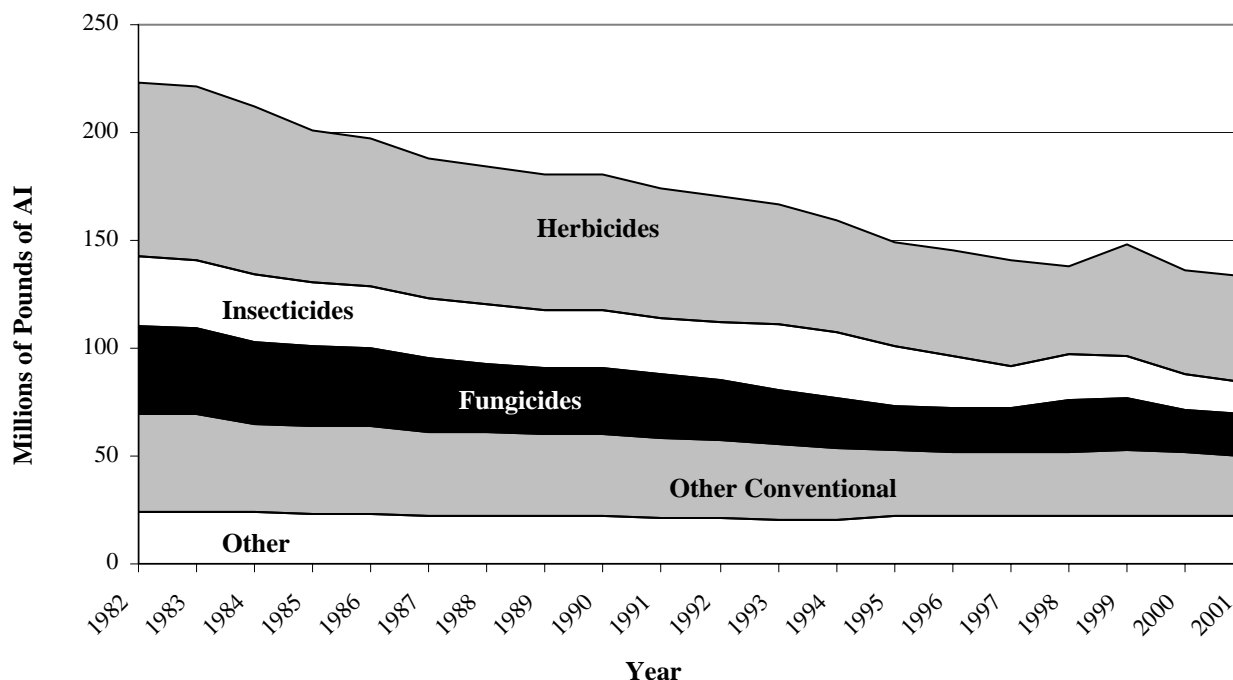
Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

1. Other conventional pesticides include nematocides, fumigants, and other conventional pesticides.

2. "Other" includes sulfur, petroleum, and other chemicals used as pesticides (e.g., sulfuric acid and insect repellents).

**Figure 5.7**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Industry/Commercial/Government Market Sector**



**Table 5.8**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Home and Garden Market Sector**

| Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       | Year | Million Pounds of Active Ingredient |                   |                 |                            |                    |       |
|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|------|-------------------------------------|-------------------|-----------------|----------------------------|--------------------|-------|
|      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |      | Herbi-<br>cides/<br>PGR             | Insecti-<br>cides | Fungi-<br>cides | Other<br>Conv <sup>1</sup> | Other <sup>2</sup> | Total |
| 1982 | 37                                  | 24                | 17              | 3                          | 67                 | 148   | 1992 | 46                                  | 12                | 8               | 2                          | 64                 | 132   |
| 1983 | 38                                  | 22                | 16              | 3                          | 67                 | 146   | 1993 | 46                                  | 13                | 8               | 2                          | 62                 | 131   |
| 1984 | 40                                  | 20                | 15              | 3                          | 67                 | 145   | 1994 | 46                                  | 13                | 8               | 2                          | 61                 | 130   |
| 1985 | 40                                  | 18                | 14              | 3                          | 67                 | 142   | 1995 | 47                                  | 12                | 8               | 2                          | 59                 | 128   |
| 1986 | 41                                  | 16                | 14              | 3                          | 67                 | 141   | 1996 | 48                                  | 12                | 8               | 2                          | 60                 | 130   |
| 1987 | 42                                  | 14                | 14              | 3                          | 67                 | 140   | 1997 | 49                                  | 13                | 8               | 2                          | 60                 | 132   |
| 1988 | 43                                  | 13                | 13              | 3                          | 67                 | 139   | 1998 | 49                                  | 13                | 8               | 2                          | 60                 | 132   |
| 1989 | 44                                  | 12                | 13              | 2                          | 68                 | 139   | 1999 | 54                                  | 14                | 10              | 2                          | 60                 | 140   |
| 1990 | 46                                  | 12                | 10              | 2                          | 66                 | 136   | 2000 | 62                                  | 15                | 11              | 2                          | 60                 | 150   |
| 1991 | 46                                  | 12                | 9               | 2                          | 65                 | 134   | 2001 | 71                                  | 17                | 12              | 2                          | 61                 | 163   |

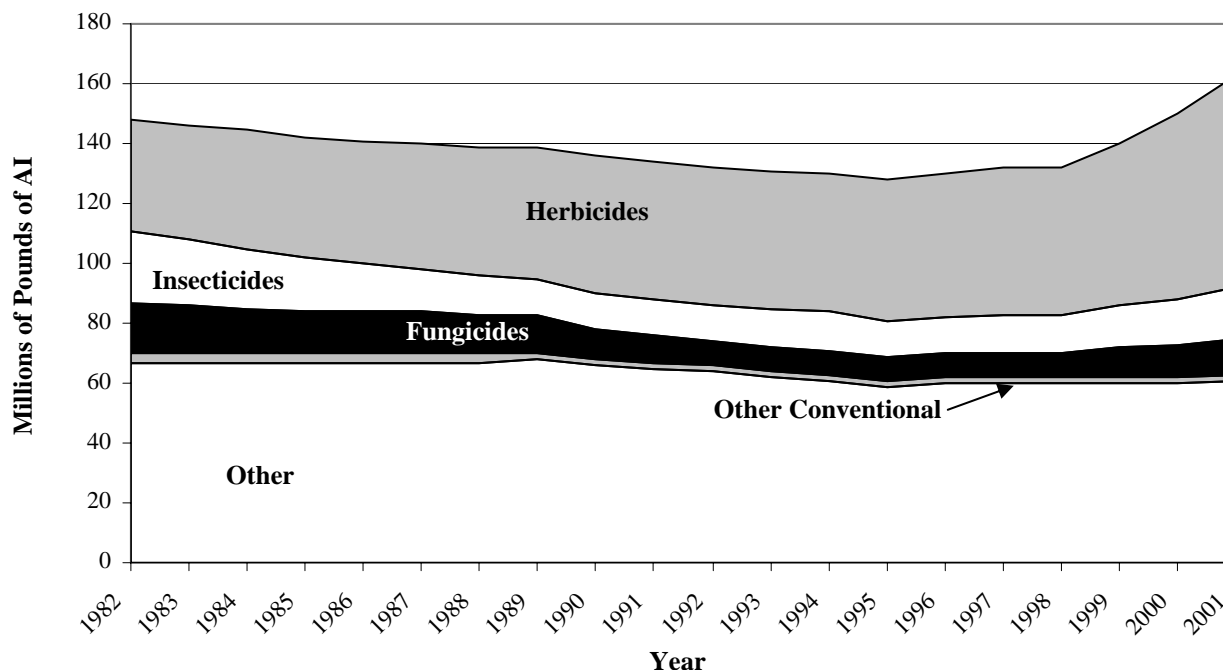
Note: Excludes wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

1. Other conventional pesticides include nematocides, fumigants, and other conventional pesticides.

2. "Other" includes sulfur, petroleum, and other chemicals used as pesticides (e.g., sulfuric acid and insect repellents).

**Figure 5.8**  
**Annual Amount of Pesticide Active Ingredient Used in the U.S. by Pesticide Type, 1982 - 2001 Estimates**  
**Home and Garden Market Sector**



**Table 5.9**  
**Conventional Pesticide Active Ingredient Used in the U.S.**  
**Agricultural and Non-Agricultural Market Sector Shares, 1964 - 2001**

| Year | Total U.S.                          | Agricultural Sector                 |                 | Non- Agricultural Sector            |
|------|-------------------------------------|-------------------------------------|-----------------|-------------------------------------|
|      | Million Pounds of Active Ingredient | Million Pounds of Active Ingredient | % of total U.S. | Million Pounds of Active Ingredient |
| 1964 | 617                                 | 366                                 | 59              | 251                                 |
| 1965 | 658                                 | 396                                 | 60              | 262                                 |
| 1966 | 682                                 | 414                                 | 61              | 268                                 |
| 1967 | 712                                 | 429                                 | 60              | 283                                 |
| 1968 | 742                                 | 457                                 | 62              | 285                                 |
| 1969 | 763                                 | 491                                 | 64              | 272                                 |
| 1970 | 760                                 | 499                                 | 66              | 261                                 |
| 1971 | 793                                 | 528                                 | 67              | 265                                 |
| 1972 | 843                                 | 575                                 | 68              | 268                                 |
| 1973 | 882                                 | 607                                 | 69              | 275                                 |
| 1974 | 964                                 | 688                                 | 71              | 276                                 |
| 1975 | 1013                                | 729                                 | 72              | 284                                 |
| 1976 | 1041                                | 753                                 | 72              | 288                                 |
| 1977 | 1084                                | 794                                 | 73              | 290                                 |
| 1978 | 1106                                | 813                                 | 74              | 293                                 |
| 1979 | 1144                                | 843                                 | 74              | 301                                 |
| 1980 | 1121                                | 826                                 | 74              | 295                                 |
| 1981 | 1118                                | 831                                 | 74              | 287                                 |
| 1982 | 1084                                | 804                                 | 74              | 280                                 |
| 1983 | 1021                                | 745                                 | 73              | 276                                 |
| 1984 | 1061                                | 794                                 | 75              | 267                                 |
| 1985 | 1020                                | 767                                 | 75              | 253                                 |
| 1986 | 988                                 | 739                                 | 75              | 249                                 |
| 1987 | 906                                 | 666                                 | 74              | 240                                 |
| 1988 | 925                                 | 690                                 | 75              | 235                                 |
| 1989 | 942                                 | 712                                 | 76              | 230                                 |
| 1990 | 949                                 | 720                                 | 76              | 229                                 |
| 1991 | 928                                 | 708                                 | 76              | 220                                 |
| 1992 | 940                                 | 723                                 | 77              | 217                                 |
| 1993 | 914                                 | 698                                 | 76              | 216                                 |
| 1994 | 984                                 | 776                                 | 79              | 208                                 |
| 1995 | 961                                 | 765                                 | 80              | 196                                 |
| 1996 | 996                                 | 803                                 | 81              | 193                                 |
| 1997 | 958                                 | 767                                 | 80              | 191                                 |
| 1998 | 912                                 | 724                                 | 79              | 188                                 |
| 1999 | 912                                 | 706                                 | 77              | 206                                 |
| 2000 | 926                                 | 722                                 | 78              | 204                                 |
| 2001 | 888                                 | 675                                 | 76              | 213                                 |

Note: Conventional pesticides only, excluding sulfur, petroleum oil and other chemicals used as pesticides (e.g., sulfuric acid and insect repellants), wood preservatives, specialty biocides, and chlorine/hypochlorites.

Source: EPA estimates based on Croplife America annual surveys, USDA/NASS (<http://www.usda.gov/nass>), and EPA proprietary data.

## 6. Glossary

**ACTIVE INGREDIENT (A.I.):** The chemical or substance component of a pesticide product intended to kill, repel, attract, mitigate, or control a pest, or that acts as a plant growth regulator, desiccant, or nitrogen stabilizer. The remainder of a formulated pesticide product consists of one or more “inert ingredients” (e.g., water, solvents, emulsifiers, surfactants, clay, and propellants), which are there for reasons other than pesticidal activity.

**AGRICULTURAL USER SECTOR (OR MARKET):** Pesticides applied by owner/operators and custom/commercial applicators to farms and facilities involved in the production of raw agricultural commodities, principally food, fiber, and tobacco; includes non-crop and post-harvest use as well as crop and field applications.

**CERTIFIED APPLICATOR:** A person who is authorized to apply “restricted-use” pesticides as a result of meeting requirements for certification under FIFRA-mandated programs. Applicator certification programs are conducted by states, territories, and tribes in accordance with national standards set by EPA. “Restricted-use pesticides” may be used only by or under the direct supervision of specially trained and certified applicators.

**COMMERCIAL APPLICATOR:** A person applying pesticides as part of a business, applying pesticides for hire, or a person applying pesticides as part of his or her job with another (not for hire) type of business, organization, or agency. Commercial applicators often are certified, but need to be so only if they use restricted-use pesticides.

**CROPLIFE AMERICA:** Formerly the American Crop Protection Association (ACPA), which publishes an annual pesticide industry profile ([ACPA Industry Profile](#)). The profile is a survey of pesticide sales provided by participating ACPA members.

**CONVENTIONAL PESTICIDES:** Pesticides that are chemicals or other substances developed and produced primarily or only for use as pesticides. An example is DDT, which was developed and used almost exclusively as a pesticide. Also includes biological and biochemical pesticides, e.g., *Bacillus thuringiensis*.

**ECONOMIC USER SECTORS (OR MARKETS):** In this report, estimates of quantities used and user expenditures for pesticides are broken out separately for the three general economic user sectors (or markets) as follows: agriculture, industrial/commercial/governmental, and home & garden. These three sectors/markets are defined elsewhere in this glossary.

**FDA:** The U.S. Food and Drug Administration, a branch of the U.S. Department of Health and Human Services, is involved in regulation of pesticides in the U.S., particularly enforcement of tolerances in food and feed products.

**FFDCA:** Federal Food, Drug, and Cosmetic Act, the law that controls pesticide residues in food and feed.

**FIFRA:** Federal Insecticide, Fungicide, and Rodenticide Act, the law that generally controls pesticide sale and use.

**FQPA:** The Food Quality Protection Act (FQPA) of 1996 amended the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug, and Cosmetic Act (FFDCA).

**HOME AND GARDEN USER SECTOR (OR MARKET):** Involves pesticides applied by homeowners to homes and gardens, including lawns and single- and multiple-unit housing. Does not include pesticides for home & garden applications by professional applicators.

**INDUSTRIAL/COMMERCIAL/GOVERNMENTAL USER SECTOR (OR MARKET):** Involves pesticides applied by professional applicators (by owner/operators/employees and custom/commercial applicators) to industrial, commercial, and governmental facilities, buildings, sites, and land; plus custom/commercial applications to homes and gardens, including lawns. May also be referred to as “professional market” for pesticides.

**NON-AGRICULTURAL SECTORS:** General term referring to a combination of home & garden and industrial/commercial/governmental sectors.

**OTHER PESTICIDES:** Chemicals registered as pesticides but that are produced and marketed mostly for other purposes, i.e., multi-use chemicals. Notable examples are sulfur, petroleum products (e.g., kerosene, oils, and distillates), salt, and sulfuric acid.

**PESTICIDE:** May be used to refer to an active ingredient (as defined above) or formulated pesticide product registered under FIFRA.

**PESTICIDE USER EXPENDITURES:** Dollar value of purchases by persons or businesses applying pesticides, such as farmers, commercial pesticide applicators, and homeowners. Reported numbers are nominal values for the years indicated (i.e., not adjusted or indexed for inflation).

**PESTICIDE USAGE:** Refers to actual applications of pesticides, generally in terms of quantity applied or units treated.

**PRIVATE APPLICATOR:** A category of applicator certification for farmers and/or employees, such that they can legally apply restricted-use pesticides or supervise others doing so who are not certified.

**PRODUCER LEVEL:** Refers to pesticide manufactures of registrants.

**PROFESSIONAL MARKET:** Sales of pesticides for application to industrial/commercial/governmental sector and to homes and gardens, by certified/commercial applicators.

**PROPRIETARY DATA:** Pesticide industry market research data that EPA purchases from private data research companies. These data are for EPA use only and cannot be divulged without vendor consent. Companies include Doane Marketing Research, Inc.; Kline and Company, Inc.; SRI, Inc.; Wood Mackenzie; and Mike Bukley, Inc.

**SAFER PESTICIDES:** Pesticides designated as “safer” (or “reduced risk”) by EPA exhibit favorable characteristics affecting health or environmental risks, resistance management, and integrated pest management. Reduced-risk pesticides may be conventional pesticides posing less risk, or biopesticides with unique modes of action, low use volume, lower toxicity, target species specificity, or natural occurrence.

**SPECIALTY BIOCIDES:** This report provides estimates for end uses as follows: swimming pools, spas, and industrial water treatment (excluding chlorine/hypochlorites, which are reported separately); disinfectants and sanitizers (including industrial/institutional applications and household cleaning products); and other specialty biocides (including biocides for adhesives and sealants, leather, synthetic latex polymers, metal-working fluids, paints and coatings, petroleum products, plastics, and textiles). These categories of end use are covered by FIFRA. Other end uses of specialty biocides (e.g., hospital/medical antiseptics, food/feed preservatives, cosmetics/toiletries) are regulated by the FDA under FFDCA and are not covered in this report.

**TOLERANCE:** The maximum amount of a pesticide allowable in a food or feed product before it is considered adulterated, usually specified in parts per million.

**USDA/FATUS:** The U.S. Department of Agriculture, Foreign Agricultural Trade of U.S. Publicly available data on U.S. agricultural imports and exports (<http://www.ers.usda.gov/db/fatus>).

**USDA NASS:** The U.S. Department of Agriculture, National Agricultural Statistics Service. Publicly available data on U.S. agricultural pesticide use (<http://www.uda.gov/nass/>).

**USER LEVEL:** Refers to pesticide users (i.e., growers, farmers, home owners, and professional pesticide Applicators).

**WOOD PRESERVATIVES:** Pesticide active ingredients used in treatment of wood to protect it from insects, fungi, and other pests. This report presents total use of wood preservative chemicals in industrial plants, the bulk of which is for pressure treatment. The major categories of pesticide chemicals included in this report as industrial wood preservatives are water-borne preservatives (mainly chromated copper arsenic), oil-borne preservatives (e.g., copper naphthenate and pentachlorophenol), creosote, creosote-coal tar, and creosote petroleum.





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