

## **Pesticide Use Trends in the U.S.: Global Comparison<sup>1</sup>**

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### **Introduction**

The EPA, in cooperation with the USDA and FDA, is responsible for regulating the production and use of pesticides in the U.S. This document provides data on volumes used and sales of pesticides from the latest EPA survey data available, 2001 – 2002. The intent of this information is only to present an objective profile and does not attempt to interpret, reach conclusions about, or make inferences regarding the data. Conclusions should not be drawn in regards to impacts on human health, the environment, or the economy.

### **Data sources**

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

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

### **Explanation of data components**

The data presented in the tables separate broad classes of pesticides – herbicides, insecticides, fungicides, and other pesticides. The “herbicide” data combine plant growth regulators with them, while “fungicides” and “insecticides” exclude sulfur and petroleum oil. Data summarized for “other” pesticides combine the total for nematicides, fumigants, rodenticides, molluscicides, aquatic, and pesticides for the control of birds and fish. Sulfur and petroleum oil are included in the “other” category as well. Data for wood

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preservatives, specialty biocides, and chlorine/hypochlorites are not included in the tables under any pesticide class. Totals may not add precisely due to rounding. In reporting the amount used, data contained in Table 2 are presented as pounds of active ingredient (a.i.) per acre. These data represent the combined pesticide usage in the major markets of agriculture, home and garden – which include pesticides applied by homeowners, both indoors and outdoors. These two market sectors do not include pesticide applications by professional applicators. Industrial/commercial/governmental uses involve pesticides applied by professional applicators to industrial, commercial, and governmental facilities; plus custom/commercial applications to homes and gardens, including lawns.

### **World and U.S. pesticide expenditures (Table 1)**

World pesticide expenditures totaled more than \$32.5 billion in 2001. 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 for pesticides as a whole were down in 2001 compared to 2000.

U.S. pesticide expenditures totaled more than \$11 billion in both 2000 and 2001 – in similar proportions as those for the world market. Both years, the percentage of herbicide sales in the U.S. was higher than the other classes of pesticides for the world. 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.

### **World and U.S. pesticide amount used (Table 2)**

World pesticide amount used exceeded 5.0 billion pounds in 2000 and 2001. Herbicides accounted for the largest portion of total use, followed by other pesticide 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. 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.

### **Additional information**

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

**Table 1.** World and U.S. pesticide expenditures by pesticide type – 2000 and 2001.

	World Market		U.S. Market		U.S. % of the World Market
	Millions \$	%	Millions \$	%	
<b>2000</b>					
Herbicides	14,319	44	6,365	57	44
Insecticides	9,102	28	3,129	28	34
Fungicides	6,384	19	860	8	13
Other	2,964	9	811	7	27
<b>Total</b>	<b>32,769</b>	<b>100</b>	<b>11,165</b>	<b>100</b>	<b>34</b>
<b>2001</b>					
Herbicides	14,118	44	6,410	58	45
Insecticides	8,763	28	3,124	28	36
Fungicides	6,027	19	835	8	14
Other	2,848	9	721	7	25
<b>Total</b>	<b>31,756</b>	<b>100</b>	<b>11,090</b>	<b>100</b>	<b>35</b>
Kiely, T., D. Donaldson, and A. Grube. 2004. Pesticides Industry Sales and Usage: 2000 and 2001 Market Estimates. EPA's Biological and Economic Analysis Division, Office of Pesticide Programs, and Office of Prevention, Pesticides, and Toxic Substances. <a href="http://www.epa.gov/pesticides">http://www.epa.gov/pesticides</a> .					

**Table 2.** World and U.S. pesticide amount used by pesticide type – 2000 and 2001.

	World Market		U.S. Market		U.S. % of the World Market
	Millions lbs of a.i.	%	Millions lbs of a.i.	%	
<b>2000</b>					
Herbicides	1,944	36	542	44	28
Insecticides	1,355	25	122	10	9
Fungicides	516	10	74	6	14
Other	1,536	29	496	40	32
<b>Total</b>	<b>5,351</b>	<b>100</b>	<b>1,234</b>	<b>100</b>	<b>23</b>
<b>2001</b>					
Herbicides	1,870	37	553	46	30
Insecticides	1,232	24	105	9	9
Fungicides	475	9	73	6	15
Other	1,469	29	472	39	32
<b>Total</b>	<b>5,046</b>	<b>100</b>	<b>1,203</b>	<b>100</b>	<b>24</b>
Kiely, T., D. Donaldson, and A. Grube. 2004. Pesticides Industry Sales and Usage: 2000 and 2001 Market Estimates. EPA's Biological and Economic Analysis Division, Office of Pesticide Programs, and Office of Prevention, Pesticides, and Toxic Substances. <a href="http://www.epa.gov/pesticides">http://www.epa.gov/pesticides</a> .					