

# Pesticide Use Trends in the U.S.: Agricultural Pesticides<sup>1</sup>

Frederick M. Fishel<sup>2</sup>

## 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 is one of a series that provides data on volumes used and sales of pesticides from the latest EPA survey data available, 2006 – 2007. This document focuses on the agricultural pesticides market sector. Other documents within this series address the industry/commercial/government and lawn and garden sectors. 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 following:

- 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
- Others from private pesticide marketing research companies.

## Explanation of data components

The expenditure data presented in Table 1 separate broad classes of pesticides – herbicides, insecticides, and fungicides and other pesticides. The "herbicide" data combine plant growth regulators (PGR) with them, while "fungicides and other" include sulfur, petroleum oil, nematicides, fumigants, and other miscellaneous conventional pesticides. The use data shown in Table 2 are presented similarly, except that nematicides and fumigants are presented as a separate category. In reporting the amount used,

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2. Frederick M. Fishel, associate professor, Agronomy Department, and director, Pesticide Information Office; Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

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data are presented as pounds of active ingredient (a.i.). Totals may not add precisely due to rounding.

Pesticides, and Toxic Substances,  
[http://www.epa.gov/opp00001/pestsales/07pestsales/market\\_estimates06-07.pdf](http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates06-07.pdf).

### **U.S. agricultural pesticide expenditures**

U.S. agricultural pesticide expenditures totaled more than \$7 billion in 2006 and 2007 (Table 1). Expenditures on herbicides/plant growth regulators accounted for the largest portion of total expenditures (more than 50% both years), followed by expenditures on insecticides, fungicides, and other pesticides, respectively. There was little change in relative quantities of pesticide expenditures for each class of pesticide both years. Total expenditures for agricultural pesticides as a whole were down in 2006 compared to 2007.

### **U.S. agricultural pesticide amount used**

U.S. pesticide amount used in 2006 and 2007 exceeded 600 million pounds both years (Table 2). The largest portion of U.S. agricultural pesticides used each year was herbicides, followed by nematicides and fumigants, insecticides and miticides, fungicides, and other pesticides. Total volume of agricultural pesticides used was down in 2006 compared to 2007.

### **Most commonly used conventional agricultural pesticide active ingredients**

Table 3 shows the ten most commonly used conventional agricultural pesticide active ingredients in 2007 and selected earlier years back to 2001. Glyphosate was the most used active ingredient in 2007, totaling between 180 million and 185 million pounds. Of the top twenty-five active ingredients (entire list not shown), thirteen are herbicides; three are fungicides; three are insecticides; five are fumigants; and one is a plant growth regulator.

### **Additional information**

- Grube, A., T. Kiely, D. Donaldson, and L. Wu. 2011. Pesticide Industry Sales and Usage: 2006 and 2007 Market Estimates. EPA's Biological and Economic Analysis Division, Office of Pesticide Programs, and Office of Prevention,

**Table 1.** U.S. agricultural pesticide expenditures by pesticide class – 2006 and 2007.

Class	Millions \$	% of Total
<b>2006</b>		
Herbicides/PGR	4,077	56
Insecticides/Miticides	1,830	25
Fungicides and Other*	1,432	19
<b>Total</b>	<b>7,339</b>	<b>100</b>
<b>2007</b>		
Herbicides/PGR	4,211	54
Insecticides/Miticides	1,999	25
Fungicides and Other*	1,659	21
<b>Total</b>	<b>7,869</b>	<b>100</b>

**Table 2.** U.S. agricultural pesticide amount used by pesticide class – 2006 and 2007.

Class	Millions Pounds a.i.	% of Total
<b>2006</b>		
Herbicides/PGR	407	63
Insecticides/Miticides	69	11
Fungicides	46	7
Nematicides/Fumigants	96	15
Other	25	4
<b>Total</b>	<b>643</b>	<b>100</b>
<b>2007</b>		
Herbicides/PGR	442	65
Insecticides/Miticides	65	9
Fungicides	44	6
Nematicides/Fumigants	108	16
Other	25	4
<b>Total</b>	<b>684</b>	<b>100</b>

**Table 3.** Ten most commonly used conventional agricultural pesticide active ingredients (millions pounds active ingredient).

Active Ingredient	Type <sup>*</sup>	2007		2005		2003		2001	
		Rank	Range <sup>**</sup>	Rank	Range	Rank	Range	Rank	Range
Glyphosate	H	1	180-185	1	155-160	1	128-133	1	85-90
Atrazine	H	2	73-78	2	70-75	2	75-80	2	74-80
Metam sodium	Fum	3	50-55	3	39-44	3	45-50	3	57-62
Metolachlor-S	H	4	30-35	5	27-32	6	28-33	9	20-24
Acetochlor	H	5	28-33	6	26-31	5	30-35	4	30-35
Dichloropropene	Fum	6	27-32	4	30-35	7	20-24	8	20-25
2,4-D	H	7	25-29	7	24-28	4	30-35	5	28-33
Methyl bromide	Fum	8	11-15	8	12-16	8	13-17	7	20-25
Chloropicrin	Fum	9	9-11	10	9-12	9	9-12	18	5-9
Pendimethalin	H	10	7-9	9	9-12	10	9-12	11	15-19

**Table 3.** Ten most commonly used conventional agricultural pesticide active ingredients (millions pounds active ingredient).

\*H = herbicide; Fum = fumigant; I = insecticide.  
\*\*Range is the estimate taken from several data sources.