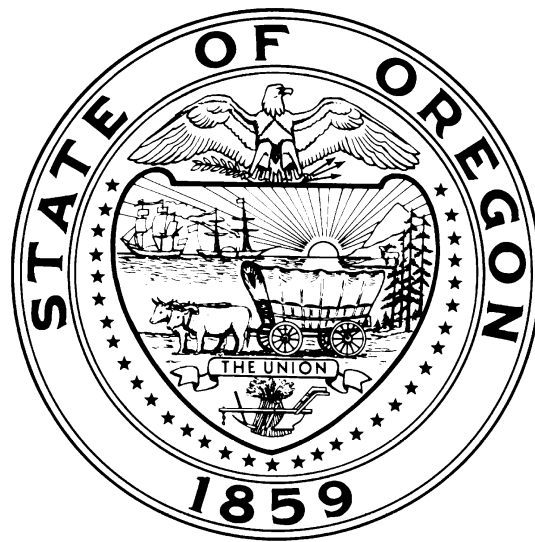


# Oregon Department of Agriculture



## Pesticide Use Reporting System **2007 Annual Report**

July 2008



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## INTRODUCTION

This is the second annual report published for Oregon's Pesticide Use Reporting System (PURS). The 1999 Oregon Legislature directed the Oregon Department of Agriculture (ODA) to develop and implement a system to collect, organize, and report information on all categories of pesticide use in Oregon. In order to meet this requirement, PURS includes both an online reporting component (for all non-household applicators) and a household pesticide use survey component.

The online component was partially implemented in 2002 but did not collect a complete year of reports due to funding issues. Calendar year 2007 was the first full year of reporting.

The Household Pesticide Use Survey collected information for 2006. The first presentations of household pesticide use survey information were in the PURS Amended 2006 Annual Report. The PURS 2007 Annual Report includes presentations of household survey information collected for 2007.

# ABSTRACT

The 1999 Oregon Legislature authorized development of the Oregon Pesticide Use Reporting System (PURS). The first full year of collecting non-household pesticide use in PURS was 2007. Also, 2007 was the second year of collecting information through the Household Pesticide Use Survey.

For 2007, approximately 5,732 reporters filed 284,984 reports of pesticide use into PURS. These reports identified that 40,473,773 pounds of active ingredient pesticides were used in Oregon during 2007. This included approximately 551 active ingredients. The top five active ingredients, by pounds, for the entire state were:

- Metam-sodium (42%) [soil fumigant],
- Glyphosate (9%) [herbicide],
- Copper naphthenate (7%) [wood preservative],
- 1,3-dichloropropene (5%) [soil fumigant], and
- Aliphatic petroleum hydrocarbons (4%) [insecticide].

The greatest percentage of pounds of active ingredients was from the site category of Agriculture. Because of licensing requirements for pesticide use on agricultural and forest crops, and outreach to agricultural and forestry pesticide applicators, the assumption could be made that PURS compliance was greatest among these reporters. Each of the site categories and percentage of pounds of active ingredients are as follows:

- Agriculture (84.7%),
- Other (8.8%),
- Forestry (2.8%),
- Aquatic (1.3%),
- Right-of-way (1.1%),
- Urban/General Outdoor (0.7%),
- Urban/General Indoor (0.5%),
- Public Health/Regulatory Pests (0.1%),
- Research (<0.1%).

A number of issues were identified regarding pesticide reporters filing electronic reports into PURS. Among these issues were:

- Reporters had trouble identifying the product used.
- Reporters had varying skill levels and access regarding online reporting.
- Reporters experienced difficulty in communication between PURS and their computers.
- Reporters did not understand the reporting deadline was mandatory.

In the Household Pesticide Use Survey component of PURS for 2007, 1,693 households agreed to complete use diaries. Only 1,483 households completed at least one month of reporting. More than 40% of households reported no use of pesticides. The other participants provided 2,989 reports.

Only 40% of the household reports contained sufficient information to calculate pounds of active ingredients. Reasons for reports lacking sufficient information to conduct these calculations were identified to include:

- Participants were unable to specify the amount of pesticide used.
- Participants were unable to determine what products were pesticides.
- Participants were unable to provide correct product identification.



Because of these difficulties, household information was insufficient to extrapolate to all households in Oregon. The greatest percentages of pesticide applications were reported to have taken place outdoors. All types of “bugs” (fleas, insects, mosquitoes, and spiders) represented the largest percentage of purpose for control. Moss control products accounted for the largest number of pounds of active ingredients, closely followed by herbicides.

# ONLINE SYSTEM

## Overview

PURS was deployed on January 2, 2007, to receive reports for pesticide applications made during calendar year 2007. Reporters had until January 31, 2008, to file all reports of pesticide applications made in 2007. Following the deadline, PURS only accepted reports for applications made in 2008.

PURS staff were available to help reporters during business hours through a dedicated phone line and by email. PURS staff also held hands-on help classes throughout the state in the spring and fall of 2007. These classes provided reporters the opportunity to bring their records to a computer classroom and receive one-on-one assistance registering in PURS and filing their reports. In addition to these classes, PURS staff made a number of presentations at training seminars, sent direct mailings, and updated information presented on the web site.

Some, but not all pesticide applicators are required to be specially licensed. By law, a “pesticide user” means any person who uses or applies a pesticide in the course of business or any other for-profit enterprise, or for a governmental entity, or in a location that is intended for public use or access.” Because of this, it is difficult to determine the number of entities that should be reporting into PURS. It is assumed that not all applicators who are required by PURS to report actually did so. A number of reporters called following January 31, 2008, to say they had missed the deadline. It is also assumed many people were still unaware of the PURS requirement.

There were approximately 5,732 reporters who registered in PURS between January 2007 and the end of January 2008. PURS allows the business or organization to register as the reporter. PURS also allows individual persons actually making the pesticide application to register as the reporter. Therefore, the number of reporters does not represent the number of persons making pesticide applications. Some reporters decided to use proxies in filing their pesticide use reports. A proxy is an outside entity filing reports on behalf of the applicator. There were 242 proxies registered.

A total of 284,984 reports were submitted for 2007. The number of reports does not equal the number of applications. PURS allows reporters to aggregate their reports if they meet specific criteria. In order to aggregate, applications must be made within the same calendar month to the same site category and/or specific site in the same location (waterbasin or ZIP code).

Between March 18 and April 11, 2008, the Oregon Department of Agriculture (ODA) conducted an online survey of reporter experiences. A total of 745 reporters completed the survey. When asked to rate their overall customer service experience, 63% indicated it was good or excellent. When asked about the quality of information on the web site, 68% marked good or excellent. Many respondents also provided written comments. Reporters appreciated the outreach efforts but expressed frustration with online reporting, the type of information collected, and basic information available online explaining PURS and how to use the system. These comments will be used to improve outreach efforts and the information presented on the web site.

## Issues

The first year of reporting revealed a number of issues (discussed in detail below), including problems with:

- Product identification,
- Computer literacy, and
- PURS requirements.

**Reporters had trouble correctly identifying the product used.** This issue is due, in part, to how pesticides are regulated. Products are assigned a unique identification (ID) number, by the United States Environmental Protection Agency (EPA), when they are registered for use. This ID number, called the EPA registration number, is unique to product formulation. For marketing purposes, manufacturers may sell a product under a variety of trade names but the formulation and EPA registration number remain the same. In addition, product names are sometimes used to generically refer to an active ingredient. PURS includes all products that have been registered by the EPA or by ODA. Reporters can use either the EPA registration number or trade name of the product to search for the specific product used.

Reporters who used the product name to search may not have selected the actual product used. Some reporters may have selected the first product returned on a search result list without crosschecking with the EPA registration number. Therefore, they may have reported an old canceled product. Or, they may have reported a product containing different active ingredients and/or percentages of active ingredients than the product they used.

Reporters also expressed frustration when searching by EPA registration number that there were multiple returns for what they considered to be the same product. Under Oregon law, different product names are different products even if the products have the same formulation and the same EPA registration number. Different names can be due to a variety of reasons, one of which is marketing and labeling targeted at homeowners vs. professional applicators.

EPA registration numbers are two or three part numbers separated by dashes and do not typically include letters (4-59; 9622-56-8705). The inclusion and placement of the dashes are important. The system allows reporters to manually enter the product used and that product's EPA registration number. When the manually entered product did not match any product, the report went under review. Such situations were additional irritations for reporters.

**Reporters had varying skill levels and access regarding online reporting.** While many people are familiar with computers, requiring online reporting was difficult for some reporters. Many reporters have never used, owned, or had access to a computer. Internet is still not available statewide. The available Internet in some areas consists of very slow dial-up access that can make reporting a difficult and time-consuming process. ODA attempted to build PURS with these reporters in mind. Graphics and other program items that slow the process down were kept to a minimum.

It was also clear that reporters had difficulty navigating drop-down menus. An example would be reporters accidentally choosing Upper Sacramento for water basin when they intended to choose Willamette. Because the water basins are in alphabetical order, it is an easy mistake to select the incorrect water basin when using a mouse to select from a dropdown list.

In addition to problems with Internet access and familiarity with computers in general, reporters had varying degrees of understanding of the terms used by PURS. In situations where a reporter applied the same product month after month, PURS allowed the reporter to basically make a copy of a report they had already submitted. Reporters submitted the first report and then clicked a button titled "Make Similar Report." After clicking "Make Similar Report," a new report was returned on the screen, pre-filled with all the data from the previous report except for the date. Reporters could then enter the new date, change quantity as needed, add additional products,

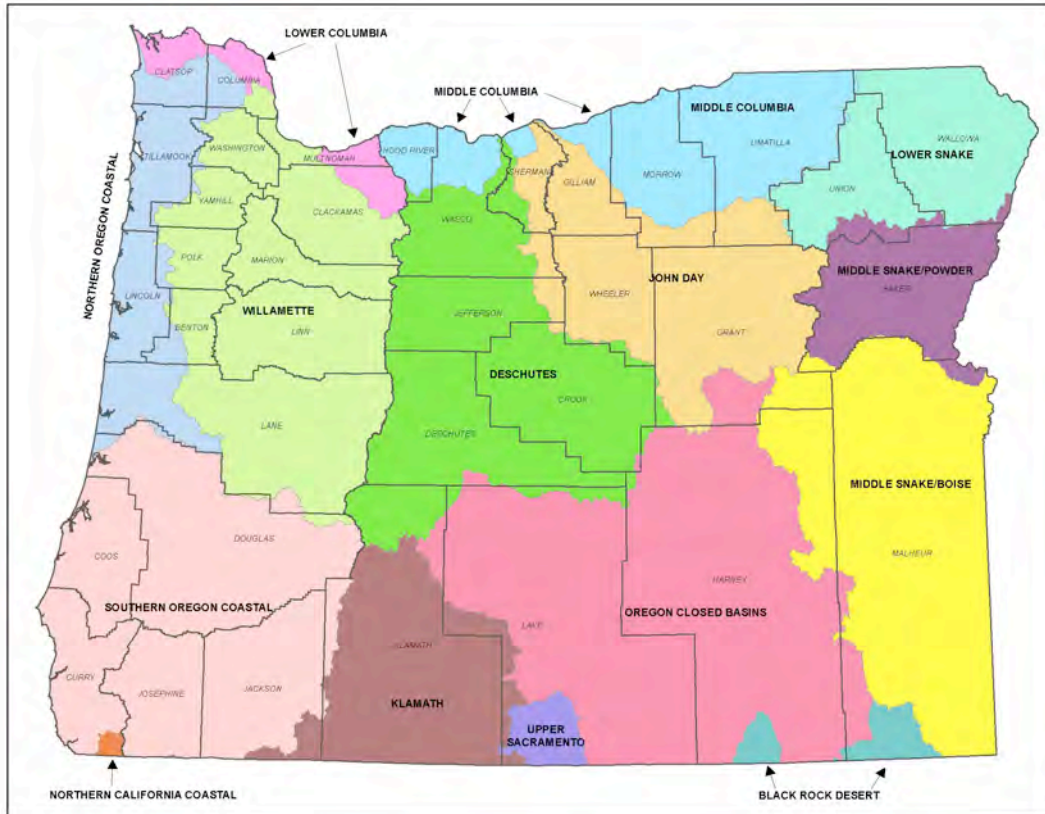
and submit the new report. PURS staff saw a number of situations where reporters entered information for one product, submitted the report, and clicked "Make Similar Report." Reporters then re-entered the same date and added a second product to the report. This process could be repeated multiple times. By doing this, reporters submitted the first product 20 times, the second product 19 times, etc. In situations where PURS staff were aware of the problem and able to discuss it with the reporters, the reporters indicated they thought they were adding the products to the same report and did not understand that each one was a new report. A number of "Make Similar Report" issues were corrected but it is clear that a number of these were neither identified nor corrected. Only reports with special units (e.g. bait stations to be converted to ounces or grams) or manually entered products automatically came under PURS staff review. ODA did not have the resources to review each report.

**Reporters experienced difficulty in communication between PURS and their computers.** It appeared that some Internet browsers were kicking reporters out of PURS or creating other issues when reporters were trying to navigate the system. In addition to complications between PURS and Internet browsers, the screen settings reporters typically use in Internet Explorer did not show buttons on the far right of the displayed screen. Reporters had to scroll to the right side of the screen to see these buttons. This varied from annoying to extremely frustrating for reporters not familiar with computers.

**Reporters did not understand the reporting deadline was mandatory.** Reports for applications made in calendar year 2007 were due no later than midnight January 31, 2008. After midnight January 31, PURS only allowed reports to be submitted with use dates of 2008. It was obvious from the call load that many reporters waited until January to file their reports. Many reporters waited until the last week and/or last day to attempt to file reports. The afternoon of January 31, PURS experienced a load issue probably due to processing reports submitted by electronic data submission (EDS) that effectively locked other reporters out of the system. Those reporters who were using the PURS interface to file their reports were getting kicked out of PURS or were not able to log into the system. Between this and confusion about the deadline being mandatory, PURS staff received numerous phone calls following January 31 from reporters who were trying to file reports with dates in 2007 complaining about not being able to submit those reports.

## **Conclusions**

Five hundred and fifty-one (551) different active ingredients were reported used in 2007. Below are the top five pesticides by pounds of active ingredient. The top 100 pesticides used, in pounds of active ingredient, can be found in Appendix A. Appendix B provides examples of the screens reporters used in order to submit their reports. Additional tables follow providing information by water basin. Information for Urban/General Indoor and Urban/General Outdoor were reported by ZIP code. In order to compare all information by water basin, Geographic Information Systems (GIS) was used to determine the predominant water basin for each ZIP code. On the next page, a map of Oregon water basins, as well as a list of site categories and specific sites, is presented.



**Figure 1 – Oregon Water Basin Map**

**Site Categories and/or Specific Sites**

- Agriculture
  - Field crops
  - Fruits/nuts
  - Livestock/poultry
  - Nursery/Christmas tress
  - Oil Crops
  - Pasture/forage/hay
  - Seed crops
  - Vegetables
  - Other
- Aquatic
- Forestry
- Public health/regulatory pests
- Research
- Right-of-way
- Urban/general indoor
  - Dwelling/residence
  - Site with public access
  - Site with non-public access
  - Other
- Urban/general outdoor
  - Site associated with dwelling/residence
  - Site with public access
  - Site with non-public access
  - Other
- Other

**Table 1 – Top Five Active Ingredients (in pounds) for the Entire State**

ACTIVE INGREDIENT	PESTICIDE TYPE	LBS. REPORTED	PERCENTAGE
<b>Total</b>		<b>40,473,773</b>	
Metam-sodium	Soil fumigant	17,090,499	42%
Glyphosate	Herbicide	3,543,403	9%
Copper naphthenate	Wood preservative	2,751,392	7%
1,3-dichloropropene	Soil fumigant	2,163,713	5%
Aliphatic petroleum hydrocarbons	Insecticide	1,631,520	4%
All others	Various	13,293,246	33%

**Table 2 – Pounds Reported by Water Basin**

WATER BASIN	LBS. REPORTED	PERCENTAGE
Middle Columbia	22,435,926	55%
Willamette	9,646,485	24%
Middle Snake-Boise	2,640,651	7%
Southern Oregon Coastal	2,210,325	5%
Klamath	951,595	2%
Middle Snake-Powder	833,955	2%
Deschutes	597,561	1%
John Day	314,202	1%
Lower Snake	311,565	1%
Lower Columbia	287,205	1%
Northern Oregon Coastal	189,995	<1%
Oregon Closed Basins	48,448	<1%
Upper Sacramento	4,734	<1%
Black Rock Desert	748	<1%
Northern California Coastal	378	<1%

**Table 3 – Top Five Active Ingredients (in pounds) by Water Basin**

WATER BASIN	ACTIVE INGREDIENT	PESTICIDE TYPE	LBS. REPORTED	PERCENTAGE <sup>1</sup>
<b>Black Rock Desert</b>	<b>748</b>			
	Carbonic acid, monopotassium salt	Fungicide	308	41%
	Glyphosate	Herbicide	111	15%
	Propargite	Miticide	111	15%
	Potassium salts of fatty acids	Various	83	11%
	BT kurstaki	Insecticide	41	5%
	All others	Various	94	13%
<b>Deschutes</b>	<b>597,561</b>			
	Xylene range aromatic solvent	Aquatic herbicide	169,568	28%
	Glyphosate	Herbicide	95,510	16%
	Aliphatic petroleum hydrocarbons	Insecticide	79,216	13%
	2,4-D	Herbicide	34,903	6%
	Diuron	Herbicide	26,914	5%
	All others	Various	191,450	32%

<b>John Day</b>	<b>314,202</b>			
	Glyphosate	Herbicide	152,969	49%
	2,4-D	Herbicide	121,563	39%
	Diuron	Herbicide	10,139	3%
	Imazamox	Herbicide	2,775	1%
	Dicamba	Herbicide	2,503	1%
	All others	Various	24,253	8%
<b>Klamath</b>	<b>951,595</b>			
	Methyl bromide	Fumigant/Soil fumigant	229,672	24%
	Metam-sodium	Soil fumigant	214,377	23%
	Chloropicrin	Fumigant/Soil fumigant	168,534	18%
	Tralkoxydim	Herbicide	61,249	6%
	Carfentrazone-ethyl	Herbicide	60,993	6%
	All others	Various	216,770	23%
<b>Lower Columbia</b>	<b>287,205</b>			
	Glyphosate	Herbicide	76,784	27%
	Aliphatic petroleum hydrocarbons	Insecticide	54,747	19%
	Sulfur	Fungicide	23,334	8%
	2,4-D	Herbicide	13,774	5%
	1,3-dichloropropene	Soil fumigant	11,655	4%
	All others	Various	106,911	37%
<b>Lower Snake</b>	<b>311,565</b>			
	Glyphosate	Herbicide	107,416	34%
	2,4-D	Herbicide	37,414	12%
	MCPA	Herbicide	17,920	6%
	Diuron	Herbicide	17,646	6%
	Chlorpyrifos	Insecticide	13,129	4%
	All others	Various	118,040	38%
<b>Middle Columbia</b>	<b>22,435,926</b>			
	Metam-sodium	Soil fumigant	15,878,821	71%
	Glyphosate	Herbicide	1,539,076	7%
	1,3-dichloropropene	Soil fumigant	1,255,003	6%
	Sulfuric acid	Desiccant	775,434	3%
	2,4-D	Herbicide	546,629	2%
	All others	Various	2,440,963	11%
<b>Middle Snake-Powder</b>	<b>833,955</b>			
	Xylene range aromatic solvent	Aquatic herbicide	235,670	28%
	Sulfuric acid	Desiccant	221,621	27%
	Metam-sodium	Soil fumigant	146,424	18%
	1,3-dichloropropene	Soil fumigant	90,234	11%
	Glyphosate	Herbicide	23,695	3%
	All others	Various	116,311	14%

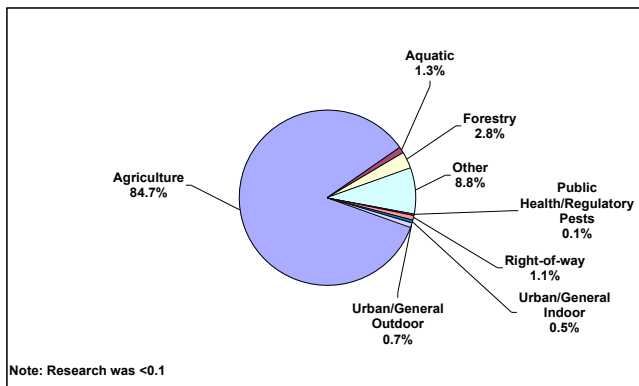
<b>Middle Snake-Boise</b>	<b>2,640,651</b>			
	Metam-sodium	Soil fumigant	715,015	27%
	1,3-dichloropropene	Soil fumigant	685,982	26%
	Potassium N-methyldithiocarbamate	Soil fumigant	339,025	13%
	Chloropicrin	Fumigant/Soil fumigant	91,863	3%
	Mancozeb	Fungicide	54,077	2%
	All others	Various	754,689	29%
<b>Northern California Coastal</b>	<b>378</b>			
	Sulfur	Fungicide	288	76%
	Basic copper sulfate	Fungicide	85	23%
	Triclopyr	Herbicide	5	1%
<b>Northern Oregon Coastal</b>	<b>189,995</b>			
	Triclopyr	Herbicide	53,646	28%
	Glyphosate	Herbicide	50,707	27%
	2,4-D	Herbicide	20,289	11%
	Atrazine	Herbicide	15,412	8%
	Sulfur	Fungicide	8,912	5%
	All others	Various	41,029	22%
<b>Oregon Closed Basins</b>	<b>48,448</b>			
	Glyphosate	Herbicide	18,616	38%
	Diuron	Herbicide	8,442	17%
	Hexazinone	Herbicide	5,380	11%
	Metribuzin	Herbicide	4,100	8%
	2,4-D	Herbicide	3,665	8%
	All others	Various	8,245	17%
<b>Southern Oregon Coastal</b>	<b>2,210,325</b>			
	Aliphatic petroleum hydrocarbons	Insecticide	862,447	39%
	Glyphosate	Herbicide	307,292	14%
	Kaolin	Various	272,417	12%
	Calcium polysulfide	Fungicide	135,743	6%
	Atrazine	Herbicide	128,099	6%
	All others	Various	504,327	23%
<b>Upper Sacramento</b>	<b>4,734</b>			
	2,4-D	Herbicide	1,155	24%
	Diuron	Herbicide	1,011	21%
	Glyphosate	Herbicide	715	15%
	Ethofumesate	Herbicide	425	9%
	Propargite	Miticide	376	8%
	All others	Various	1,052	22%



<b>Willamette</b>	<b>9,646,485</b>			
	Copper naphthenate	Wood preservative	2,751,374	29%
	Glyphosate	Herbicide	983,472	10%
	Diuron	Herbicide	447,320	5%
	2,4-D	Herbicide	345,737	4%
	Pendimethalin	Herbicide	314,712	3%
	All others	Various	4,803,870	50%

<sup>1</sup>Percentages may not add to 100% due to rounding.

Breaking out the pounds of active ingredients reported by site category, agriculture accounted for the largest percentage. Because of licensing requirements for pesticide use on agricultural and forest crops, and outreach to agricultural and forestry pesticide applicators, the assumption could be made that PURS compliance was greatest among these reporters. There is no mechanism within PURS to determine compliance with PURS requirements. Figure 2, below, shows all site categories by percentage pounds of active ingredients reported.



**Figure 2 – Percentage of Pounds of Active Ingredients by Site Category**

Below are additional tables that show the top five active ingredients by pounds reported for each of the site categories and/or specific sites (Agriculture, Urban/General Indoor, and Urban/General Outdoor all have specific sites).

**Table 4 -Top Five Active Ingredients (in pounds) by Site Category**

<b>SITE</b>	<b>ACTIVE INGREDIENT</b>	<b>PESTICIDE TYPE</b>	<b>LBS. REPORTED</b>	<b>PERCENTAGE<sup>1</sup></b>
<b>Agriculture</b>	<b>34,270,330</b>			
	Metam-sodium	Soil fumigant	16,999,812	50%
	Glyphosate	Herbicide	2,949,547	9%
	1,3-dichloropropene	Soil fumigant	2,163,713	6%
	Aliphatic petroleum hydrocarbons	Insecticide	1,609,352	5%
	2,4-D	Herbicide	1,043,747	3%
	All others	Various	9,504,159	28%

<b>Aquatic</b>	<b>523,137</b>			
	Xylene range aromatic solvent	Aquatic herbicide	454,775	87%
	Acrolein	Herbicide	56,321	11%
	Copper sulfate pentahydrate	Algaecide/Herbicide	7,538	1%
	Triclopyr	Herbicide	1,317	0.3%
	Spiromesifen	Insecticide	977	0.2%
	All others	Various	2,209	0.4%
<b>Forestry</b>	<b>1,141,459</b>			
	Glyphosate	Herbicide	435,207	38%
	Atrazine	Herbicide	240,573	21%
	2,4-D	Herbicide	138,493	12%
	Triclopyr	Herbicide	88,390	8%
	Hexazinone	Herbicide	74,999	7%
	All others	Various	163,797	14%
<b>Public Health/Regulatory Pest</b>	<b>51,027</b>			
	Malathion	Insecticide	22,350	44%
	Aliphatic petroleum hydrocarbons	Insecticide	8,553	17%
	BT israelensis	Insecticide	4,429	9%
	2,4-D	Herbicide	3,267	6%
	Piperonyl butoxide	Insecticide	2,499	5%
	All others	Various	9,929	19%
<b>Research</b>	<b>765</b>			
	2,4-D	Herbicide	169	22%
	Glyphosate	Herbicide	125	16%
	Calcium polysulfide	Fungicide	92	12%
	Picloram	Herbicide	53	7%
	Imazapyr	Herbicide	50	6%
	All others	Various	276	36%
<b>Right-of-way</b>	<b>430,501</b>			
	Diuron	Herbicide	153,026	36%
	Glyphosate	Herbicide	94,664	22%
	Triclopyr	Herbicide	64,447	15%
	2,4-D	Herbicide	55,239	13%
	Methyl isothiocyanate	Fungicide	6,473	2%
	All others	Various	56,652	13%
<b>Urban/General Indoor</b>	<b>211,147</b>			
	Copper ammonium carbonate	Wood preservative	101,034	48%
	Tebuconazole	Fungicide	38,688	18%
	Boric acid	Insecticide	15,190	7%
	Methyl bromide	Fumigant/Soil fumigant	14,260	7%
	Chlorpyrifos	Insecticide	10,312	5%
	All others	Various	31,663	31%

<b>Urban General Outdoor</b>	<b>301,171</b>			
	Glyphosate	Herbicide	35,181	12%
	Bifenthrin	Insecticide	25,179	8%
	Pentachloronitrobenzene (PCNB)	Fungicide	19,363	6%
	2,4-D	Herbicide	17,761	6%
	Mineral oil	Insecticide	17,526	6%
	All others	Various	186,161	62%
<b>Other</b>	<b>3,544,237</b>			
	Copper naphthenate	Wood preservative	2,750,669	78%
	Boric acid	Insecticide	209,079	6%
	Ammonium bromide	Biocide	95,336	3%
	Metam-sodium	Soil fumigant	87,231	2%
	Copper(I) oxide	Marine-organism control	70,524	2%
	All others	Various	331,398	9%

<sup>1</sup>Percentages may not add to 100% due to rounding.

**Table 5 – Top Five Active Ingredients (in pounds) by Specific Sites in Agriculture**

<b>SPECIFIC SITE</b>	<b>ACTIVE INGREDIENT</b>	<b>PESTICIDE TYPE</b>	<b>LBS. REPORTED</b>	<b>PERCENTAGE<sup>1</sup></b>
<b>Field Crops</b>			<b>18,518,034</b>	
	Metam-sodium	Soil fumigant	13,600,013	73%
	Glyphosate	Herbicide	1,183,432	10%
	1,3-dichloropropene	Soil fumigant	851,929	5%
	2,4-D	Herbicide	480,557	3%
	Potassium N-methyldithiocarbamate	Soil fumigant	339,025	2%
	All others	Various	2,063,078	11%
<b>Fruits/Nuts</b>			<b>4,220,852</b>	
	Aliphatic petroleum hydrocarbons	Insecticide	1,550,034	37%
	Mineral oil	Insecticide	430,996	10%
	Sulfur	Fungicide	404,069	10%
	Kaolin	Various	331,468	8%
	Calcium polysulfide	Fungicide	208,742	5%
	All others	Various	1,295,543	31%
<b>Livestock/Poultry</b>			<b>2,086</b>	
	Piperonyl butoxide	Insecticide	714	34%
	Copper sulfate pentahydrate	Various	545	26%
	Tetrachlorvinphos	Insecticide	311	15%
	Cyromazine	Insecticide	98	5%
	Glyphosate	Herbicide	69	3%
	All others	Various	349	17%

<b>Nursery/Christmas Trees</b>		<b>1,525,124</b>		
	Methyl bromide	Fumigant/ Soil fumigant	309,416	20%
	Chloropicrin	Fumigant/Soil fumigant	249,363	16%
	Glyphosate	Herbicide	139,977	9%
	Chlorothalonil	Fungicide	87,477	6%
	Aliphatic petroleum hydrocarbons	Insecticide	51,900	3%
	All others	Various	686,991	45%
<b>Oil Crops</b>		<b>132,752</b>		
	1,3-dichloropropene	Soil fumigant	82,175	62%
	Propargite	Insecticide	7,413	6%
	Chlorpyrifos	Insecticide	6,833	5%
	Paraquat dichloride	Herbicide	5,605	4%
	Terbacil	Herbicide	5,184	4%
	All others	Various	25,542	19%
<b>Pasture/Forage/Hay</b>		<b>290,130</b>		
	Glyphosate	Herbicide	86,646	30%
	2,4-D	Herbicide	50,660	17%
	Paraquat dichloride	Herbicide	34,093	12%
	Metribuzin	Herbicide	22,321	8%
	Diuron	Herbicide	17,866	6%
	All others	Various	78,544	27%
<b>Seed Crops</b>		<b>2,936,264</b>		
	Glyphosate	Herbicide	479,972	16%
	2,4-D	Herbicide	386,365	13%
	Diuron	Herbicide	294,082	10%
	Pendimethalin	Herbicide	234,531	8%
	Ethofumesate	Herbicide	209,573	7%
	All others	Various	1,331,741	45%
<b>Vegetables</b>		<b>6,313,585</b>		
	Metam-sodium	Soil fumigant	3,249,179	51%
	1,3-dichloropropene	Soil fumigant	1,139,530	18%
	Sulfuric acid	Desiccant	997,055	16%
	EPTC	Herbicide	112,767	2%
	Mancozeb	Fungicide	82,352	1%
	All others	Various	732,702	12%
<b>Other</b>		<b>331,504</b>		
	Glyphosate	Herbicide	173,298	52%
	2,4-D	Herbicide	19,037	6%
	EPTC	Herbicide	16,321	5%
	MCPA	Herbicide	9,901	3%
	Chloropicrin	Fumigant/Soil fumigant	9,435	3%
	All others	Various	103,512	31%

<sup>1</sup> Percentages may not add to 100% due to rounding.

**Table 6 – Top Five Active Ingredients (in pounds) by Specific Sites in Urban/General Indoor**

SPECIFIC SITE	ACTIVE INGREDIENT	PESTICIDE TYPE	LBS. REPORTED	PERCENTAGE
<b>Dwelling/Residence</b>	<b>30,973</b>			
	Boric acid	Insecticide	14,337	46%
	Bifenthrin	Insecticide	7,230	23%
	Chlorfenapyr	Insecticide	6,560	21%
	Fipronil	Insecticide	692	2%
	Permethrin	Insecticide	534	2%
	All others	Various	1,620	5%
<b>Site with Public Access</b>	<b>7,069</b>			
	Methyl bromide	Fumigant	2,125	30%
	Propiconazole	Fungicide	965	14%
	3-Iodo-2-propynyl butylcarbamate (IPBC)	Fungicide	952	13%
	Boric acid	Insecticide	627	9%
	Bifenthrin	Insecticide	532	8%
	All others	Various	1,868	26%
<b>Site with Non-public Access</b>	<b>123,306</b>			
	Copper ammonium carbonate	Wood preservative	101,034	82%
	Methyl bromide	Fumigant/Soil fumigant	12,084	10%
	Chlorpropham	Plant growth regulator	3,350	3%
	1,4-dimethylnaphthalene	Plant growth regulator	1,565	1%
	Sodium o-phenylphenate	Fungicide	1,337	1%
	All others	Various	3,936	3%
<b>Other</b>	<b>49,798</b>			
	Tebuconazole	Fungicide	38,688	78%
	Chlorpyrifos	Insecticide	10,312	21%
	Imidacloprid	Insecticide	776	2%
	Bifenthrin	Insecticide	8	<1%
	Chlorfenapyr	Insecticide	4	<1%
	All others	Various	10	<1%

**Table 7 – Top Five Active Ingredients (in pounds) by Specific Sites in Urban/General Outdoor**

SPECIFIC SITE	ACTIVE INGREDIENT	PESTICIDE TYPE	LBS. REPORTED	PERCENTAGE <sup>1</sup>
<b>Site Associated w/ Dwelling/Residence</b>	<b>143,627</b>			
	Bifenthrin	Insecticide	23,604	16%
	Mineral Oil	Insecticide	13,979	10%
	Aliphatic petroleum hydrocarbons	Insecticide	12,203	8%
	Glyphosate	Herbicide	8,887	6%
	Zinc sulfate monohydrate	Moss control	8,523	6%
	All others	Various	76,431	53%
<b>Site with Public Access</b>	<b>134,728</b>			
	Glyphosate	Herbicide	23,552	17%
	Pentachloronitrobenzene (PCNB)	Fungicide	16,071	12%
	Chlorothalonil	Fungicide	12,899	10%
	2,4-D	Herbicide	10,035	7%
	Diuron	Herbicide	8,624	6%
	All others	Various	63,547	47%
<b>Site with Non-Public Access</b>	<b>21,070</b>			
	Aluminum phosphide	Fumigant	9,896	47%
	Glyphosate	Herbicide	2,287	11%
	Diuron	Herbicide	2,037	10%
	2,4-D	Herbicide	762	4%
	Chlorothalonil	Fungicide	671	3%
	All others	Various	5,417	26%
<b>Other</b>	<b>1,746</b>			
	Diuron	Herbicide	702	40%
	Glyphosate	Herbicide	455	26%
	2,4-D	Herbicide	141	8%
	Chlorothalonil	Fungicide	108	6%
	Dichlobenil	Herbicide	70	4%
	All others	Various	270	15%

<sup>1</sup>Percentages may not add to 100% due to rounding.

# HOUSEHOLD USE

## Overview

The Gilmore Research Group (Gilmore) continued the Household Pesticide Use Survey in 2007. Gilmore telephone screeners were used to recruit households to participate in the diary portion of the survey. Using a purchased sample of phone numbers selected randomly from throughout Oregon, Gilmore contacted a total of 12,266 households in 2007. During the telephone contact, respondents were asked if they would be willing to use a diary form to keep track of the use of pest control products over a three-month period. Approximately 14% of all households contacted agreed to participate in the diary portion of the survey. For those who agreed to participate in the diary portion, Gilmore mailed reporting forms within one week of recruitment. The mailing included a letter from the ODA director thanking the respondent for agreeing to participate and provided phone numbers and a web site (see Appendix C).

To address the fact that many households did not fill out diary forms on a regular basis or with complete information, Gilmore made monthly telephone calls to participants. The calls were used to remind participants to keep track of their use of pest control products. Through these calls, Gilmore obtained interim monthly pesticide use information, which was later compared with the contents of submitted diary forms.

The state was divided into nine regions according to counties (Figure 3). Each quarter, attempts were made to obtain minimum numbers of participants for each region totaling at least 250 participants per quarter from the entire state. The percentage of participants for each region was to be 10% with the exception of region 6 at 17%. This method was used to obtain information from throughout Oregon rather than just from the areas of highest population, such as in and around the Portland Metro area.

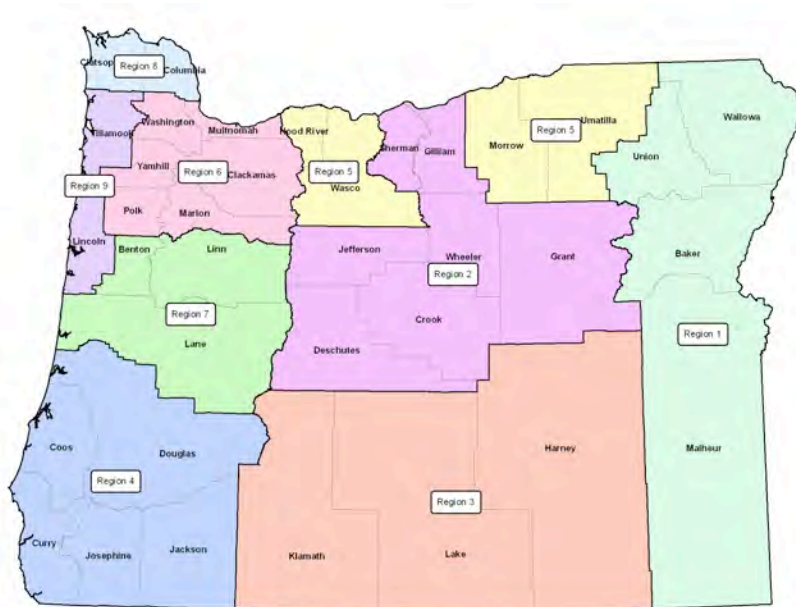
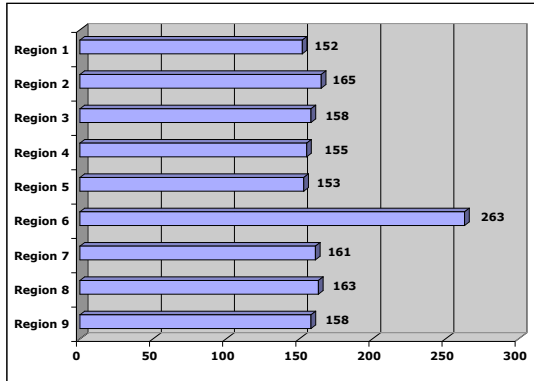


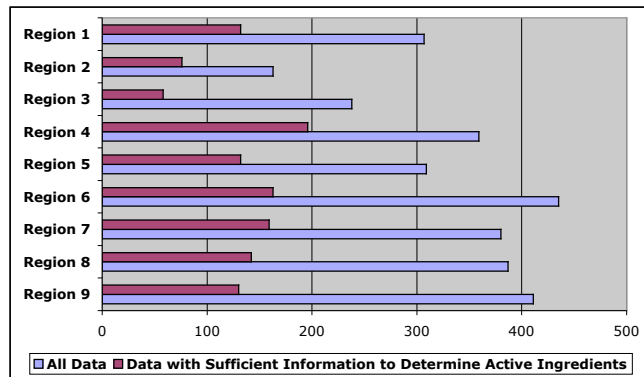
Figure 3 – State Map with Regions Used in the Household Pesticide Use Survey

Figure 4, below, illustrates the number of participants by region.



**Figure 4 – Number of Participants By Region**

A total of 1,693 households agreed to complete use diaries. However, only 1,483 participants actually completed at least one month of reporting. Of those, 687 reported that they did not use any pesticides during the quarter in which they participated. The other 796 participants provided 2,989 reports (Figure 5). Approximately 40% of the reports contained sufficient information to calculate pounds of active ingredients.



**Figure 5 – Number of Reports of Pesticide Use Received By Region**

## Issues

The most significant issue is not being able to calculate pounds of active ingredient used from the information reported. Several reasons why reports contained insufficient information to calculate pounds of active ingredients included:

- **Participants were unable to specify amount of pesticide used.** For some products, such as those in spray cans, it is difficult to provide actual amounts used.
- **Participants were unable to determine what products were pesticides.** Under federal and Oregon law, “pesticide” is a very broad term that includes insecticides, herbicides, rodenticides, fungicides, etc. Basically, anything that kills, repels, or mitigates a pest is a pesticide. Many persons do not understand this meaning of “pesticide.” Thus, some products that are pesticides may not have been reported. And, some products that are not pesticides were reported. It is because of this confusion that ODA chose to use the term “pest control products” rather than “pesticide” when conducting the Household Pesticide Use Survey.



- **Participants did not provide correct product identification.**
  1. Each pesticide product is assigned a unique registration number by the United States Environmental Protection Agency (EPA). This EPA registration number is on the label of each product and identifies that product. The survey used this EPA registration number to identify specific products used. A number of reports did not include the EPA registration number. Some reports included another number, such as the barcode, instead of the EPA registration number.
  2. Relying only upon a product's name may not identify the specific product used. For example, there are about 75 different products that contain "Roundup™" in the trade name. Some contain the single active ingredient glyphosate but in varying concentrations. Some contain additional active ingredients. In addition, there are a number of "generic" products containing glyphosate that some persons may refer to as "Roundup™." Despite education outreach activities by ODA and Gilmore, many participants did not understand how to identify the product used.

## Conclusions

Households that reported continue to show that participants have difficulty identifying pesticide products. There are also continued concerns about the ability of pesticide users to read the label and correctly identify information.

Moss control products accounted for 47% of the pounds of active ingredient, but only 2% of the reports identified moss control as the purpose. Moss control products contain higher percentages of active ingredients and typically have higher application rates, than do other types of products.

One specific chemical grouping, including pyrethrins and synthetic pyrethroids, accounted for 6% of total insecticide poundage. Organophosphates, another insecticide chemical group, accounted for 8% of total insecticide poundage, while carbamates accounted for 10%. Of the herbicides, phenoxies accounted for 49%. Removing sodium nitrate, sulfur and carbon (see Appendix D) from the list of rodenticides to look at bait products, zinc phosphide accounted for 89%, strychnine for 6%, brodifacoum 4%, and warfarin 1%.

Overall, looking at pounds of active ingredient, the greatest number of pounds reported were for:

- ferrous sulfate monohydrate (40%) [moss control],
- glyphosate (18%) [weed control],
- 2,4-D (16%) [weed control],
- zinc sulfate monohydrate (6%) [moss control], and
- MCPA (3%) [weed control].

The main five active ingredients by greatest number of records were:

- glyphosate (7%) [weed control],
- piperonyl butoxide (6%) [insect control],
- 2,4-D (6%) [weed control],
- fipronil (6%) [insect control], and
- permethrin (5%) [insect control].

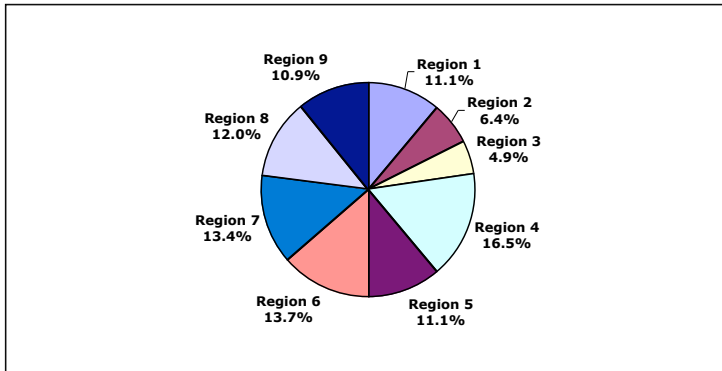
Table 8, identifies active ingredients by type and highlights those that were reported in the greatest amount. In total, 101 active ingredients were identified as being used.

**Table 8 – Main Active Ingredients Reported, Presented by Pesticide Type**

	ACTIVE INGREDIENT	LBS. REPORTED	PERCENTAGE <sup>1</sup>
<b>INSECTICIDES</b>	<b>9.11 Total</b>		
	Fipronil	3.15	35%
	S-methoprene	2.81	31%
	Carbaryl	0.76	8%
	Malathion	0.37	4%
	Boric acid	0.32	4%
	All others	1.70	19%
<b>HERBICIDES</b>	<b>62.52 Total</b>		
	Glyphosate	27.54	44%
	2,4-D	23.40	37%
	Mecoprop	2.15	3%
	Dicamba	1.51	2%
	Nonanoic acid	0.86	1%
	All others	7.06	11%
<b>MOSS CONTROL</b>	<b>71.00 Total</b>		
	Ferrous sulfate monohydrate	60.30	85%
	Zinc sulfate monohydrate	8.66	12%
	Zinc chloride	1.45	2%
	Potassium salts of fatty acids	0.36	1%
	Ammonium salts of fatty acids	0.23	<1%
<b>RODENTICIDES</b>	<b>1.91 Total</b>		
	Sodium nitrate	0.98	51%
	Sulfur	0.74	39%
	Carbon	0.18	9%
	Zinc phosphide	0.01	1%
	All others	<0.01	<1%
<b>INSECT REPELLENTS</b>	<b>0.41 Total</b>		
	DEET	0.37	90%
	.beta.-Alanine, n-acetyl-N-butyl-, ethyl ester	0.03	7%
	Picaridin	0.01	2%
<b>FUNGICIDES</b>	<b>2.17 Total</b>		
	Calcium polysulfide	1.26	58%
	Captan	0.34	16%
	Chlorothalonil	0.23	11%
	Tebuconazole	0.16	7%
	Thiophanate-methyl	0.16	7%
	All others	0.02	1%
<b>SLUG/SNAIL CONTROL</b>	<b>3.05 Total</b>		
	Metaldehyde	2.99	98%
	Iron phosphate	0.06	2%

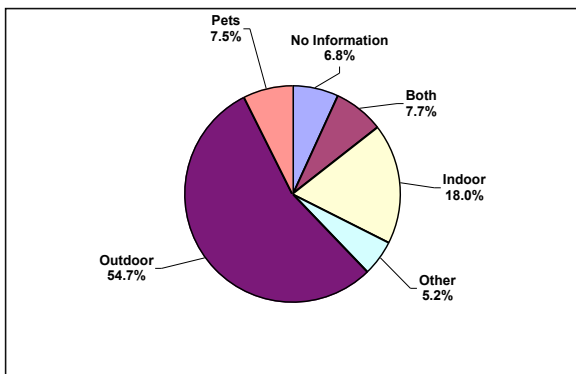
<sup>1</sup>Percentages may not add to 100% due to rounding.

The number of reports with sufficient information to determine pounds of active ingredients varied some among the nine regions. Figure 6, below, illustrates this.

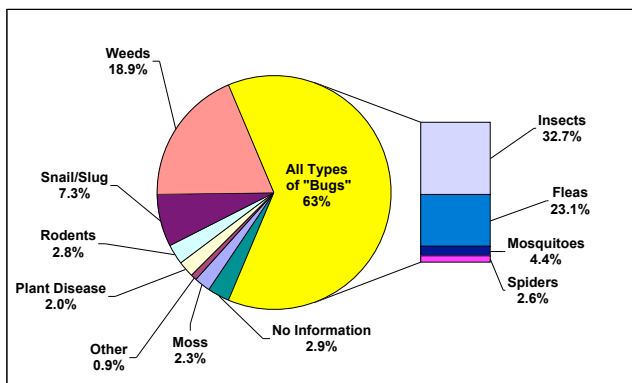


**Figure 6 – Percentage by Region of Reports that Had Sufficient Information to Determine Active Ingredients**

While approximately 60% of the reports contained insufficient information to determine pounds of active ingredient used, most did contain information about site of pesticide application and the intended purpose for the application. Following are summaries about site and purpose of reported pesticide use, both for all reports and those that contained sufficient information to calculate pounds of active ingredients. The purpose of product use, presented by quarter is also included for reports that contained sufficient data to calculate pounds of active ingredient. (Note: Percentages in the following charts may not add to 100% due to rounding.)



**Figure 7 – Reported Sites for All Data (from all 2,989 total reports received)**



**Figure 8 – Reported Purposes for All Data**

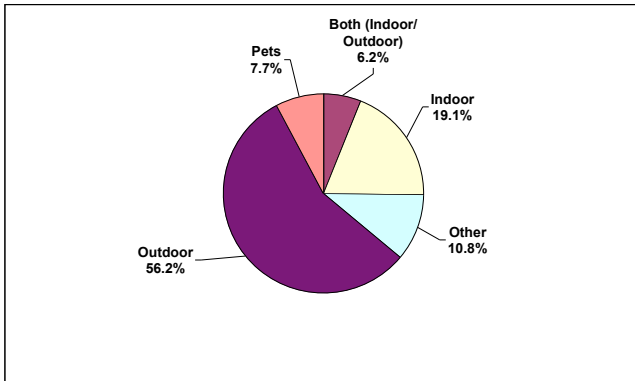


Figure 9 – Reported Sites for Data with Active Ingredient Information

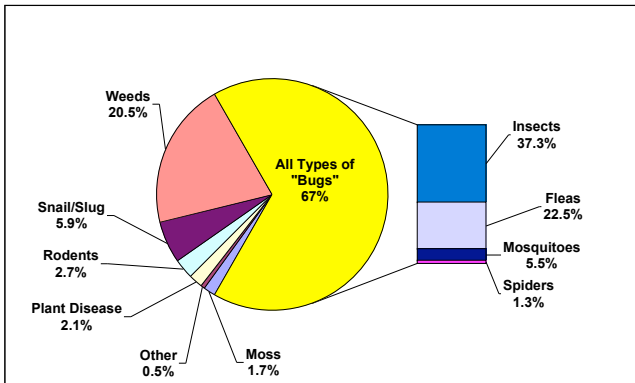


Figure 10 – Reported Purposes for Data with Active Ingredient Information

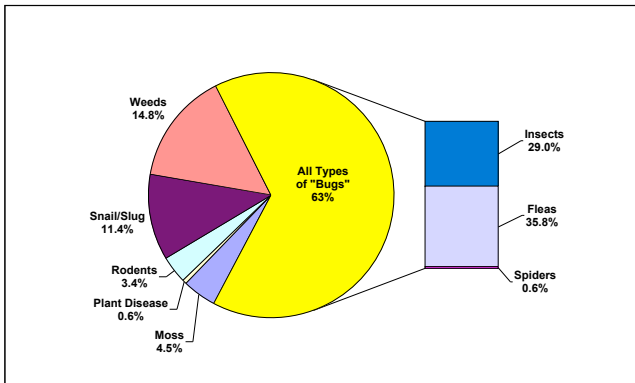


Figure 11 – Reported Purposes for Data with Active Ingredient Information – Quarter 1

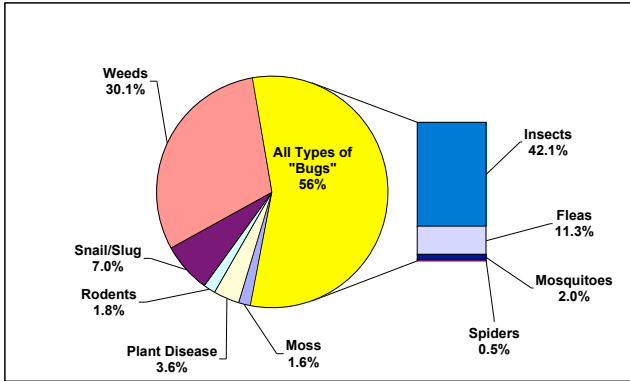


Figure 12 – Reported Purposes for Data with Active Ingredient Information – Quarter 2

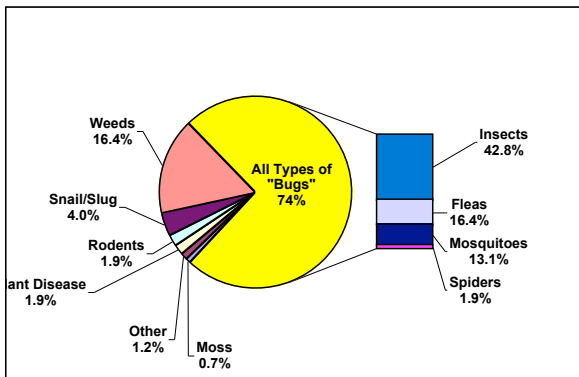


Figure 13– Reported Purposes for Data with Active Ingredient Information – Quarter 3

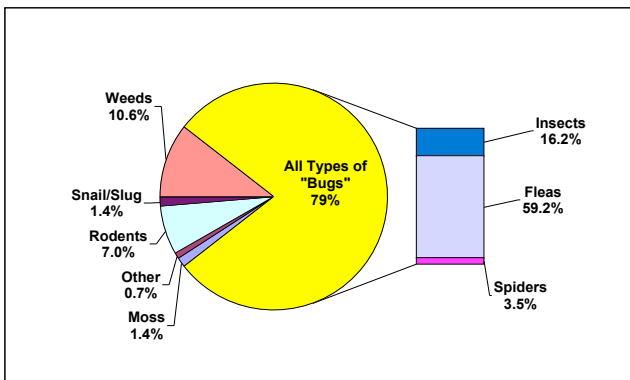
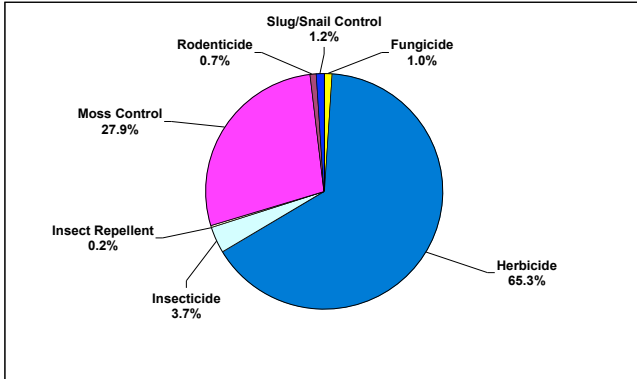
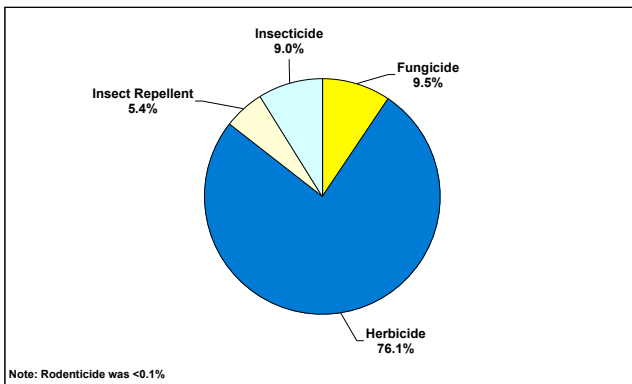


Figure 14 – Reported Purposes for Data with Active Ingredient Information – Quarter 4

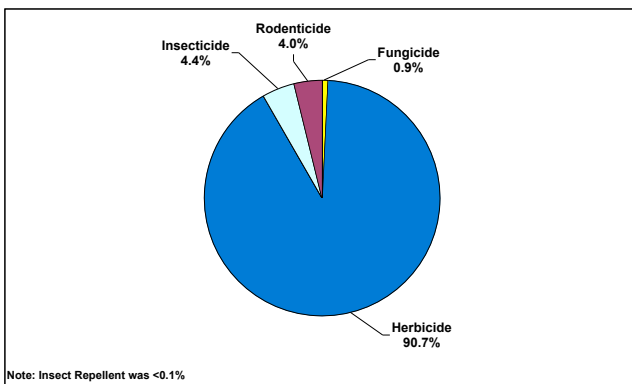
The following (Figure 15) illustrates the pesticide types reported by percentage pounds of active ingredient. Additional charts are included below that separate this information out for the nine regions. Type of pesticide is related to purpose information previously presented. For example, herbicides are used for weed control, insecticides are used for “bug” control, etc.



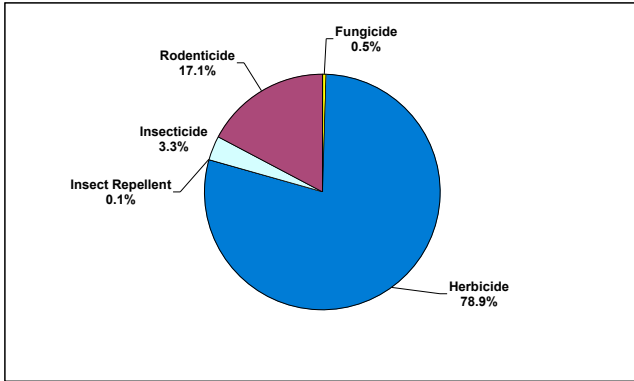
**Figure 15 - Active Ingredients by Type – Entire State**



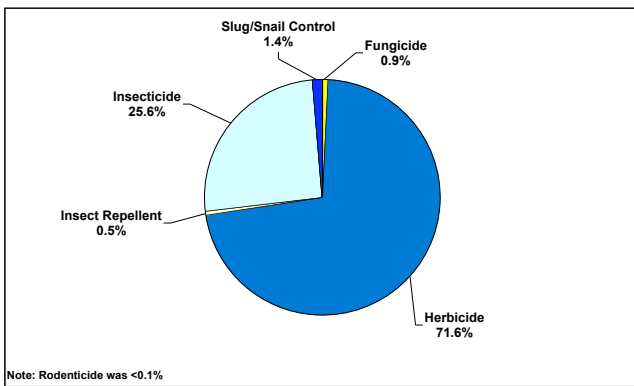
**Figure 16 – Active Ingredients by Type – Region 1**



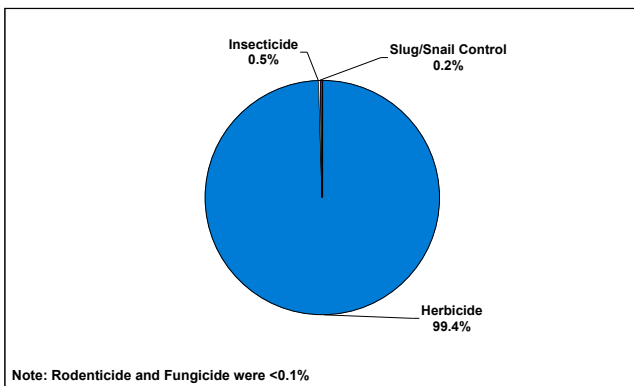
**Figure 17 – Active Ingredients by Type – Region 2**



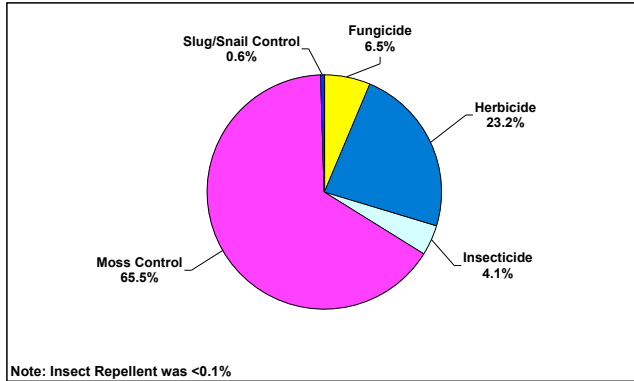
**Figure 18 – Active Ingredients by Type – Region 3**



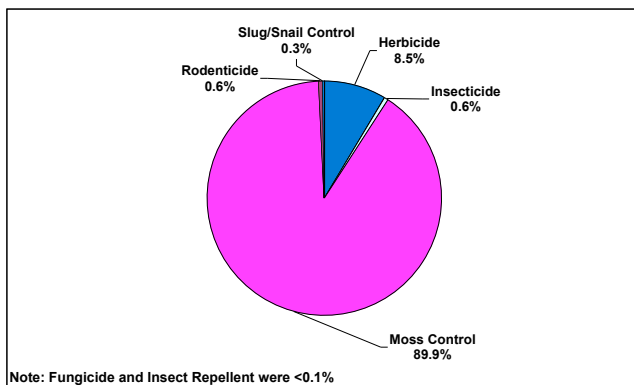
**Figure 19 – Active Ingredients by Type – Region 4**



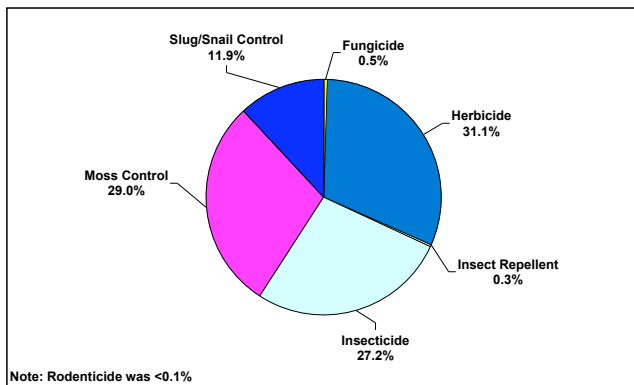
**Figure 20 – Active Ingredients by Type – Region 5**



**Figure 21 – Active Ingredients by Type – Region 6**

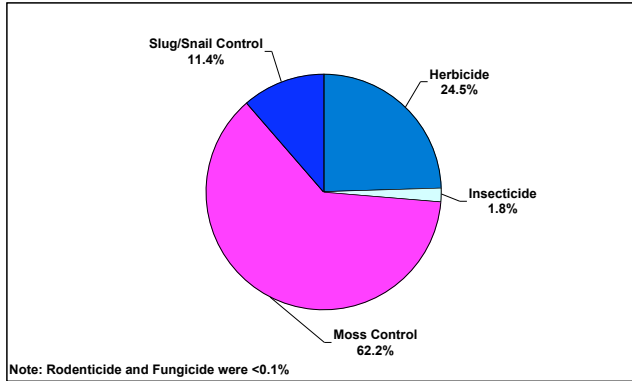


**Figure 22 – Active Ingredients by Type – Region 7**



**Figure 23 – Active Ingredients by Type – Region 8**





**Figure 24 – Active Ingredients by Type – Region 9**

# APPENDIX

## Appendix A – Top 100 Active Ingredients and Pounds Reported

#	ACTIVE INGREDIENT	LBS. REPORTED
1	Metam-sodium	17,090,499
2	Glyphosate	3,543,403
3	Copper naphthenate	2,751,392
4	1,3-Dichloropropene	2,163,713
5	Aliphatic petroleum hydrocarbons	1,631,520
6	2,4-D	1,270,276
7	Sulfuric acid	997,055
8	Diuron	605,197
9	Chloropicrin	488,968
10	Sulfur	481,892
11	Mineral oil	464,962
12	Xylene range aromatic solvent	455,339
13	Methyl bromide	434,489
14	Pendimethalin	431,350
15	MCPA	369,477
16	Chlorothalonil	353,538
17	Potassium N-methyldithiocarbamate	339,096
18	Kaolin	332,746
19	Atrazine	298,905
20	Mancozeb	296,126
21	Ethofumesate	263,300
22	Copper hydroxide	242,814
23	Boric acid	238,641
24	Chlorpyrifos	232,507
25	EPTC	228,872
26	Calcium polysulfide	219,733
27	Triclopyr	215,825
28	Dicamba	172,612
29	Copper ammonium carbonate	149,625
30	Paraquat dichloride	142,134
31	Metribuzin	138,944
32	Flufenacet	129,500
33	Hexazinone	115,364
34	Ammonium bromide	95,336
35	Malathion	92,095
36	Bromoxynil	88,550
37	Oxamyl	82,044
38	Copper(I) oxide	81,885
39	Propiconazole	76,611
40	Oxyfluorfen	73,384

41 Simazine	69,254
42 Dimethenamid	67,162
43 Carfentrazone-ethyl	66,999
44 Tralkoxydim	61,308
45 Oryzalin	61,219
46 Metolachlor	59,882
47 Acrolein	56,321
48 Isoxaben	52,868
49 Ethoprop	50,434
50 Metaldehyde	49,179
51 Tebuconazole	46,084
52 Zinc dimethyldithiocarbamate	45,790
53 Trifluralin	44,208
54 Imazapyr	43,336
55 Acephate	42,953
56 Methomyl	42,228
57 Sodium bentazon	42,055
58 Diazinon	41,948
59 PCNB	40,260
60 Bifenthrin	39,662
61 Mono- and di- potassium salts of phosphorous acid	39,302
62 Thiophanate-methyl	38,273
63 Copper sulfate pentahydrate	38,152
64 Azoxystrobin	37,330
65 Carbaryl	37,005
66 Aldicarb	35,635
67 Pentachlorophenol	33,936
68 Prohexadione calcium	33,100
69 Didecyl dimethyl ammonium carbonate and didecyl dimethyl ammonium bicarbonate	32,939
70 Phosmet	30,783
71 Napropamide	30,768
72 Dimethoate	29,057
73 Propargite	27,784
74 Clopyralid	27,023
75 Captan	26,259
76 Glufosinate-ammonium	25,487
77 Iprodione	24,863
78 Endosulfan	24,452
79 Copper ethanolamine complex	23,530
80 Carbonic acid, monopotassium salt	22,590
81 Clethodim	22,457
82 Nonanoic acid	22,305
83 Terbufos	22,167
84 Chlorpropham	21,923
85 Sulfometuron methyl	21,265

86 Dazomet	21,133
87 Basic copper sulfate	19,147
88 Trinexapac-ethyl	17,563
89 Maleic hydrazide, potassium salt	16,419
90 Imidacloprid	16,114
91 Pyraclostrobin	15,846
92 Boscalid	15,804
93 Aluminum phosphide	15,491
94 ADBAC	15,101
95 IPBC	14,490
96 Terbacil	14,241
97 Oxadiazon	13,412
98 Dichlobenil	13,174
99 Propyzamide	12,983
100 Didecyl dimethyl ammonium chloride	12,336

## Appendix B – Screen Shots from Online System Registration System

**PURS** Oregon Department of Agriculture **Instructions**  
Pesticide Use Reporting System **Reporter Registration**

\*Required fields are highlighted in green and with an \*

ODA Pesticide License Number:

\*Type of Reporter:

\*Agency/Commercial Operator/Business Name:

OR

Individual: \*First Name:   
Middle Initial:   
\*Last Name:

Mailing Address: \*Line 1:   
Line 2:   
\*City:   
\*State:   
\*Country:   
\*ZIP Code:

OR

\*Postal Code:   
(Canadians Only)

\*Telephone Number: --  
Fax Number: --  
Email Address:

Contact: \*First Name:   
Middle Initial:   
\*Last Name:   
\*Telephone Number: --  
Email Address:

Proxy Reporter ID:

## Reporting System

**PURS** Oregon Department of Agriculture **Instructions**  
Pesticide Use Reporting System **Main Menu**

[Create Use Report](#) | [Previous Reports](#) | [Proceed to EDS](#) | [Change Password](#) | [Logout](#)

Reporter / Proxy ID: 100000020

<a href="#">Create Use Report</a>	Create Use Report button will allow you to enter information about a use report that has not already been entered into PURS.
<a href="#">Previous Reports</a>	Previous Reports button will allow you to <b>search</b> for use reports that you have already entered into PURS. These reports can then be reviewed, <b>edited, copied</b> or requested for deletion.
<a href="#">Proceed to EDS</a>	Proceed to EDS button will allow you to upload an electronic data submission file containing numerous use reports, from your computer to PURS.
<a href="#">Change Password</a>	Change Password button will allow you to change the password for this system only.
<a href="#">Logout</a>	Logout button logs you out of PURS.

Step 1 of 2

Date of Pesticide Use:

Site Category:

[Next Step](#)

Note: If you leave this screen by clicking on the Logout or Main Menu buttons, any information you have entered about this ONE use report will not be saved.

[Main Menu](#) [Logout](#)

Step 2 of 2

Search Products:

Product ID Number  Product Name   
OR   
(i.e., EPA Reg. No., Oregon SLN number, or Section 18 Number) [Search](#)

Search Results:

EPA Reg. No.	Product Name	Other ID No.	Add
No Search Results			

Product Used:

Product Name	ID Number	Amount of Undiluted Product	Purpose	Delete
No Product Selected				

[Previous Step](#) [Save Report](#)

Note: If you leave this screen by clicking on the Logout or Main Menu buttons, any information you have entered about this ONE use report will not be saved.

[Main Menu](#) [Logout](#)

Step 2 of 2

Search Products:

Product ID Number  Product Name   
OR   
(i.e., EPA Reg. No., Oregon SLN number, or Section 18 Number) [Search](#)

Search Results:

EPA Reg. No.	Product Name	Other ID No.	Add
4-59	BONIDE ROSE RX INSECT & DISEASE CONTROL READY TO USE		<a href="#">Add</a>
4-59	BONIDE FRUIT TREE SPRAY		<a href="#">Add</a>

Product Used:

Product Name	ID Number	Amount of Undiluted Product	Purpose	Delete
No Product Selected				

[Previous Step](#) [Save Report](#)

Step 2 of 2

**Search Products:**

Product ID Number  OR Product Name   
(i.e., EPA Reg. No., Oregon SLN number, or Section 18 Number)

**Search Results:**

EPA Reg. No.	Product Name	Other ID No.	Add
No Search Results			

**Product Used:**

Product Name	ID Number	Amount of Undiluted Product	Purpose	Delete
BONIDE ROSE RX INSECT & DISEASE CONTROL READY TO USE	4-59	<input type="text" value="-Choose Units-"/>	<input type="text" value="-Choose Purpose-"/>	<input type="button" value="Delete"/>

Note: If you leave this screen by clicking on the Logout or Main Menu buttons, any information you have entered about this ONE use report will not be saved.

Use Report #: 386141    Use Report Date: 01-01-2008    Submitting Reporter ID: 100000020  
 Status: Accepted    Submitted Date: 07-08-2008:16:40

Site Category: Aquatic    Water Basin: John Day

Product Name	Product ID	Qty.	Units	Purpose
BONIDE ROSE RX INSECT & DISEASE CONTROL READY TO USE	4-59	5.0000	tablespoon(s)	Insect control



## Appendix C- Diary Packet for Household Pesticide Use Survey



# Oregon

Theodore R. Kulongoski, Governor

Department of Agriculture

Office of the Director

635 Capitol Street NE


Salem, OR 97301-2532

(503) 986-4552

FAX (503) 986-4750

**Date:** January 18, 2006

**To:** Oregon Household

**From:** Katy Coba, Director 

**RE:** Household Pest Control Product Survey



Thank you so much for agreeing to participate in the Household Pest Control Product Survey sponsored by the Oregon Department of Agriculture. Information gathered in this survey will be used by environmental and health researchers to evaluate the use of pesticides in Oregon. The information you provide will be aggregated with the responses of hundreds of other households who are also participating in the survey to get a total picture of household pesticide use around the state. Accurate information is essential to the success of this research. The fact that you are participating in the survey should not affect the pest control products you buy and use in any way.

For this survey, we are simply asking that you use the enclosed form to keep track of pest control products used by your household for 90 days, beginning on the first day of the month indicated on the top of the form. Before entering information on the survey form, be sure to refer to the instructions and the "Frequently Asked Questions" sheet that are also enclosed with the form.

Rest assured that all the information you provide on the form will remain strictly confidential. Gilmore Research Group is conducting the survey on behalf of the Oregon Department of Agriculture. Your name, address, and phone number will be used only for purposes of sending and receiving survey materials; this information will not be shared with the Department or any other agency. Your contact information will not be associated with the form you return, so do not place your name or any other personal information anywhere on the form.

If you have questions or need assistance with filling out the survey form, please telephone Gilmore Research Group at 1-800-940-5456, extension 254, and ask for Michelle or Margie. You will also receive a follow-up communication from Gilmore Research Group sometime within the next two weeks.

Please feel free to make photocopies of the survey form as needed. If you would like more information about the survey you may also go to the Oregon Department of Agriculture website at [http://oregon.gov/ODA/PEST/purs\\_index.shtml](http://oregon.gov/ODA/PEST/purs_index.shtml).

Gilmore Research Group will be calling you monthly to collect the information from your survey form and to answer any questions. You will also be asked to mail the completed forms to Gilmore Research Group at the end of the 90 day survey period. Your assistance in this survey is very much appreciated and will contribute greatly to understanding use of pest control products by Oregon households, and the potential impact of these products on human health and the environment.



# Tips to help find the EPA Reg Number

**We realize that the EPA Reg. number can be difficult to find at times, however this information is very important to the study. Here are some helpful hints to finding the number.**

-Any application of any product inside or outside a home with an EPA should be recorded

-The EPA number contains **2 or 3 sets of digits.**

-It is clearly labeled “**EPA Reg. No.**”

-It's usually found in small print on either the front or back of the label and towards the bottom of the container.

**-The EPA Reg number ALWAYS has a dash and is ONLY NUMBERS.**

-Different sized containers of the same product have different EPA numbers, so it is important to list each one.

Here are some common examples:

Bayer, Advantage 11556-117, 11556-122, 11556-118, 11556-119

Monsanto Company, Round Up 524-445, 71995-20, 71995-17, 524-343, 524-436

Merial Limited, Frontline 65331-5, 65331-4, 65331-1, 65331-3

\*\*\*Please remember to write down the EPA Reg. number before you throw a package away. \*\*\*

Household Pest and Weed Control Product Reporting Form

PRIVATE TRACKING NUMBER 00584

USE ONE LINE FOR EACH APPLICATION OF A PRODUCT (report multiple applications in one day as a single application).  
 Amount and Unit Reporting:  
 CONCENTRATE: For products that you need to mix with water, report only the amount of undiluted concentrate used. Report in standard units such as, cups, tablespoons, teaspoons, pounds, pints, quarts, ounces, etc. Do not report total amount of the mixed solution.  
 IF DRY: For products, such as a weed and feed, moss killer or granular slug bait, report the total number of pounds used.  
 IF LIQUID: For pre-mixed, "ready to use" products, including aerosols and solutions in squirt bottles, indicate approximate percentage (% of the container used or ounces used).  
 (Indicate amount and unit.)

DATE mm/dd/yyyy	WHERE USED <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Both <input type="checkbox"/> Other, specify %	BRAND NAME OR MANUFACTURER	PRODUCT NAME (ref EPA Est. No.)	EPA Reg. No.	FULL CONTAINER SIZE (Indicate amount and unit.)	TOTAL AMOUNT OF PRODUCT USED AND UNIT (See notes above.)	PROBLEM OR PURPOSE OF APPLICATION
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Spiders <input type="checkbox"/> Insects <input type="checkbox"/> Weeds <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
/ /					Full Container Amount: _____ Unit: _____ <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Pints <input type="checkbox"/> Other, specify %	Total Amount Used: _____ Unit: _____ <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snails/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents

When this form is completed, use another enclosed form for additional applications. SEE THE BACK OF THIS FORM FOR INSTRUCTIONS

## Instructions for Household Pest Control Product Reporting Form

The reporting form is easy to fill out. You are asked to record information about your applications of pest control products in and around your home. Use one line per product application. Please combine and report multiple applications in one day as a single application. Report only applications you make to your own property in the 3 months indicated on your reporting form.

**Hint:** To make reporting your household's pest control product applications easier, you may want to post the form in a conspicuous place where all family members have access to it, such as on the refrigerator, above a workbench, next to a calendar, or where you store such products. That way any member of your family making an application will easily be able to fill out the form.

DATE: Record the two-digit month, day, and year information (in that order).

**WHERE USED:** Check *indoor*, *outdoor*, or *both* depending upon where you apply the product. If uncertain, check *other* and write in where you applied the product.

**BRAND NAME OR MANUFACTURER:** If uncertain about the brand or manufacturer of a product, please just use your best judgment. An example is "Acme Company." A trade mark is often associated with a brand name.

**PRODUCT NAME:** This is often in the largest type on the product container. An example is "Miracle Weed and Feed."

**EPA REG. NO. (Environmental Protection Agency Registration Number):** This is extremely important information. Please try to find this number for each product application you report. It is a two or three digit set of numbers connected by a hyphen, appearing in small print on either the front or back of the label and toward the bottom of the container. Examples are EPA Reg. No. 110-1825 or EPA Reg. No. 110-1825-970. Report all two or three sets of numbers. Do not report the EPA Est. No. (Environmental Protection Agency Establishment Number) or any CAS Numbers.

**FULL CONTAINER SIZE:** Report the total amount of product that the container holds (when new). This is usually found on the bottom of the front side of the package container. Be sure to both write a number and check a unit of measurement. For example, you would write **3 2** for a 32-fluid ounce container, then check the box next to *ounces*. If uncertain, check *other* and write in what you believe to be the correct information.

**TOTAL AMOUNT OF PRODUCT USED:** Report the total amount of product that you apply in a single day. Again, be sure to report both a number and check a unit of measurement. If you applied one-half of a 32-fluid ounce container you would write **1 6**, then check the box next to *ounces*. Alternative, you could write **5 0** then check the box next to % to indicate that you used 50% or one-half of the container. If uncertain, simply provide an exact estimate of the total amount of product used. Do not report ranges, such as "2 to 3 ounces." Also, do not record amount as "applied until plant surface was wet" or "used 1 lb. per 1000 sq. ft. of lawn."

**PROBLEM OR PURPOSE OF APPLICATION:** Check the box that best describes why you applied the product. If there is more than one reason for the application, check all that apply. If the reason for the application is not on the checklist, please check *other*, then write-in the information.

### EXAMPLE OF HOW TO FILL OUT ONE PRODUCT APPLICATION

DATE mm/dd/yy	WHERE USED <input type="checkbox"/> Indoor <input checked="" type="checkbox"/> Outdoor <input type="checkbox"/> Both <input type="checkbox"/> Other, specify %	BRAND NAME OR MANUFACTURER	PRODUCT NAME	EPA Reg. No. (not EPA Est. No.)	FULL CONTAINER SIZE (Indicate amount and unit.) Full Container Amount: _____ 0 Unit: <input type="checkbox"/> Ounces <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	TOTAL AMOUNT OF PRODUCT USED AND UNIT (See notes above.) Total Amount Used: _____ 0 Unit: <input type="checkbox"/> Ounces <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input type="checkbox"/> Pounds <input type="checkbox"/> Tablespoons <input type="checkbox"/> Other, specify %	PROBLEM OR PURPOSE OF APPLICATION <input type="checkbox"/> Fleas <input type="checkbox"/> Insects <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents <input type="checkbox"/> Snail/slug <input type="checkbox"/> Spiders <input checked="" type="checkbox"/> Weeds <input type="checkbox"/> Other, specify %
02/03/06	<input checked="" type="checkbox"/> Outdoor	Acme Company	Miracle Weed and Feed	110-1825-970	2 0 Ounces	1 0 Ounces	<input type="checkbox"/> Fleas <input type="checkbox"/> Insects <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Moss <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents <input type="checkbox"/> Snail/slug <input type="checkbox"/> Spiders <input checked="" type="checkbox"/> Weeds <input type="checkbox"/> Other, specify %



## Frequently Asked Questions about the Household Reporting Survey

Q. What is the period during which I should track my household's pest control product use?

A. The reporting period begins on the first day of the first month circled on the top of your reporting form. Do not report any products used before or after the three months indicated.

Q. What are pest control products?

A. **Pest control products** represent a broad range of items designed to kill, repel, control, or prevent things such as fleas, insects, weeds, rodents, plant diseases, snails and slugs, and moss. Technically, "weed and feed" products are also pest control products and should be included on the reporting form. An important thing to remember is that pest control products that need to be reported in the survey have an EPA Reg. No. that is found on the product container.

Examples of pest control products include (but are not limited to) the following:

- mosquito repellent
- weed killer
- flea treatments or collars
- insect and spider killer
- plant disease control products
- snail and slug pellets
- ant bait
- mouse and mole baits
- weed and feed products

Q. What applications should I report on the reporting form?

**Basically, any applications of any product inside or outside your home with an EPA Reg. No. should be recorded on the reporting form.** Please report all pest control products you apply inside your personal dwelling space, as well as all products you apply outside in your lawn, yard, garden or on your trees and shrubs. Note, however, that only applications made on your personal residential property should be reported. **Do not report applications to agricultural crops or livestock, and do not report applications to rental properties where you do not reside. Also do not report applications not made by you or members of your household; do not report applications made by lawn care companies or other pest control professionals.** Also, report only products you actually use. Do not report product purchases or report products you may have in storage for future use.

Q. What is an EPA Reg. No. and how do I find it?

A. The **EPA Reg. No. contains two or three sets of digits, and is clearly labeled "EPA Reg. No."** It is normally found in small print on either the front or back of the label and toward the bottom of the container. Examples are: 5-21 or 110-1825 or 7023-360 or 4170-28-657.

Q. How do I report applications of prepackaged ant or mouse bait?

A. Report the application date as the date you place the bait station out. The amount of product used is the net contents or weight indicated on each bait station (or 100%). An example would be .2 oz.

Q. What should I do if I'm not sure whether the product I'm applying is really a pest control product?

A. If uncertain, **report all applications that you think are pest control products.** Also note that nearly all pest control products contain an EPA Reg. No. somewhere on the container.

Q. Do I report the use of a mousetrap baited with food or a mole trap?

A. No, technically speaking such traps are devices, not pest control products, and should not be reported.

More Questions/Answers on the back. [Over ↗](#)

Q. How do I estimate the amount of a product I use out of a metal aerosol spray can or opaque or plastic spray container?  
 A. For plastic spray containers it may be helpful to very carefully hold the container up to the light--be sure the lid is screwed on tightly and the container is clean. For either type of container, you may also feel of the weight of the container before and after application. If you are uncertain about how much of a product you have applied, **you may always estimate the amount you used as a percentage of the total container.** When in doubt about how much product you have used, **please just give us your best estimate.**

Q. What should I do if I need assistance completing the form or want more information about the research?  
 A. For general information about the household pest control product reporting survey component of the Pesticide Use Reporting System (PURS), you may go to Oregon Department of Agriculture website at <http://oda.state.or.us/pesticide/index.html> and click on Pesticide Use Reporting System (PURS), or go directly to <http://purs.oda.state.or.us>. You will note that there is a specific reference to online reporting of pesticide use. This is for governmental, commercial or professional users of pesticides, and not household users of pesticides. For specific questions about completing the reporting form you may also call Margie or Michelle of Gilmore Research Group at 800-940-5456 extension 254.

Q. What should I do if I do not use any pest control products during the reporting period?  
 A. Remember that pest control products represent a broad range of items (see above), so chances are you will use something during the reporting period. If at the end of this period you truly have not used any such products, simply write, "none used" on the first line of the reporting form and report that to Gilmore Research Group when they call. Reports of non-use are very important to the program.

Q. If I want to return the form through the mail, send it to the address below or use the postage-paid return envelope.  
 A. Mail it to: Gilmore Research Group, 2324 Eastlake Ave E, Seattle, WA. 98102.

Q. What does an example of a complete and accurate entry on the reporting form look like?  
 A. See below for two examples of how the same information may be reported.

**EXAMPLES OF HOW TO FILL OUT PRODUCT APPLICATION**

DATE mm/dd/yy	WHERE USED <input type="checkbox"/> Indoor <input checked="" type="checkbox"/> Outdoor <input type="checkbox"/> Both <input type="checkbox"/> Other, specify %	BRAND NAME OR MANUFACTURER	PRODUCT NAME	EPA Reg. No. (not EPA Est. No.)	FULL CONTAINER SIZE (Indicate amount and unit.)	TOTAL AMOUNT OF PRODUCT USED AND UNIT (See notes above.)	PROBLEM OR PURPOSE OF APPLICATION
02/01/06	<input checked="" type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Both <input type="checkbox"/> Other, specify %	Aome Company	Miracle Weed and Feed	110-1935-970	Full Container Amount: 2 0 Unit: <input type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pints <input checked="" type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	Total Amount Used: 1 0 Unit: <input type="checkbox"/> Ounces <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Pounds <input type="checkbox"/> Quarts <input checked="" type="checkbox"/> % of Container <input type="checkbox"/> Other, specify %	<input type="checkbox"/> Fleas <input type="checkbox"/> Snail/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input checked="" type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Other, specify % <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents
02/05/06	<input checked="" type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Both <input type="checkbox"/> Other, specify %	Holden Company	Hartz Control Home Flea and Tick Killer	2724-401-2596	Full Container Amount: 1 6 Unit: <input checked="" type="checkbox"/> Ounces <input type="checkbox"/> Quarts <input type="checkbox"/> Pints <input type="checkbox"/> Pounds <input type="checkbox"/> Other, specify %	Total Amount Used: 6 Unit: <input type="checkbox"/> Ounces <input type="checkbox"/> Teaspoons <input type="checkbox"/> Pints <input type="checkbox"/> Quarts <input checked="" type="checkbox"/> % of Container <input type="checkbox"/> Other, specify % Sprays	<input checked="" type="checkbox"/> Fleas <input type="checkbox"/> Snail/slugs <input type="checkbox"/> Insects <input type="checkbox"/> Spiders <input type="checkbox"/> Mosquitoes <input type="checkbox"/> Weeds <input type="checkbox"/> Moss <input type="checkbox"/> Other, specify % <input type="checkbox"/> Plant disease <input type="checkbox"/> Rodents

## **Appendix D - Additional Information on Rodenticides**

Sodium nitrate, sulfur and carbon are active ingredients in a product that is dropped into rodent holes and creates gases that are intended to kill rodents, including gophers, moles, and rats. This product has a very different mode of action from other rodenticides. It also contains high percentages of these active ingredients while many bait rodenticides are less than one percent active ingredient.