

## **STRUCTURAL PESTICIDE USE IN NEW JERSEY: 2011 SURVEY**

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### Introduction

The New Jersey Pesticide Control Program (NJPCP) began a series of pesticide use surveys in 1985. These surveys address pesticide use in the state of New Jersey for agriculture, golf courses, structural pest control, right-of-way, mosquito control, and lawn care. This report focuses on the 2011 structural pesticide use survey initiated by the NJPCP to identify what chemicals and how much of each were used for termite and other structural pest control in 2011.

All statewide pesticide use surveys are performed under the authority of the New Jersey Pesticide Control Code, N.J.A.C. 7:30-1 et.seq., requiring applicators to maintain pesticide records for two years and to submit use records to the state when requested. This regulative authority provides an accuracy and level of response that is difficult to duplicate in a voluntary, nationwide survey. In fact, these New Jersey surveys almost represent a pesticide usage census rather than a probabilistic survey.

The information collected from the NJPCP pesticide use surveys is used by agencies within the NJ Department of Environmental Protection along with other state agencies to aid in research, exposure management and monitoring efforts in areas such as ground water protection, farm worker protection and education, and residual pesticide sampling. The survey data are also entered into state and federal geographical information systems for mapping purposes.

### Methods

The NJPCP's registration records were used to identify all 3519 licensed commercial applicators holding a category 7A (general and household pest control,) 7B (termite control) or 8A (General Public Health) on his or her license. Survey forms for the 2011 Structural Pesticide Use survey, along with instructional letters and return envelopes, were mailed at the end of the year. A survey form was sent to each applicator, but since two or more applicators can work on the same commercial business, the instructional letter requested that only one form be returned for each establishment to avoid duplication of response. A total of three mailings (one initial and two follow-ups to non-respondents) were sent and collected the first six months of 2012.

The survey requested information on each pesticide product used. This included trade name, percent active ingredient, EPA registration number, amount applied, and type of pest control. Survey information was entered into a database file. This information file was then merged with a second database that linked chemical names with trade names, and a subprogram converted total

amounts of formulated product to total amounts of active ingredient (lbs ai).

## Results

Once all three mailings were completed, 3015 out of 3515 (86%) surveys were received.

Table 1 lists the chemicals and their respective active ingredient amounts reported.

Table 2 selects out the highest use non-fumigant compounds.

Table 3 shows pesticide use by type of pest controlled.

Table 4 shows pesticide use by county.

**Table 1.** Pesticide amounts (lbs active ingredient) reported in the New Jersey 2011 Structural Pesticide Use Survey.

<b>INSECTICIDES:</b>		Spinosad	<1
Acephate	236	Sulfluramid	<1
Acetamiprid	259	Tetramethrin	7
Allethrin	5	Thiamethoxam	2
Avermectin	52	Tralomethrin	<1
Bifenthrin	2821	<b>Total Insecticides:</b>	<b>25150</b>
Borate/Boric acid	3413		
Carbaryl	30	<b>RODENTICIDES:</b>	
Chlorantraniliprole	120	Brodifacoum	1
Chlorfenapyr	1155	Bromadiolone	6
Cyfluthrin	1167	Bromethalin	<1
Cyhalothrin	1068	Chlorophacinone	1
Cypermethrin	493	Cholecalciferol	1
DDVP	522	Difenacoum	<1
Deltamethrin	343	Difethialone	1
Diatomaceous earth	961	Diphacinone	2
Diflubenzuron	<1	Vitamin D3	<1
Dinotefuran	6	Warfarin	<1
Esfenvalerate	226	Zinc Phosphide	194
Ethofenprox	45	<b>Total Rodenticides:</b>	<b>206</b>
Fipronil	6456		
Fluvalinate	5	<b>AVICIDES:</b>	
Hexaflumuron	10	4-Aminopyridine	1
Hydramethylnon	17	Anthraquinone	2196
Hydroprene	702	Methyl anthranilate	12
Imidacloprid	1455	Polybutene	1
Indoxacarb	181	<b>Total Avicides:</b>	<b>2210</b>
Isooctadecanol	9		
Linalool	3	<b>FUMIGANTS:</b>	
Methomyl	6	Aluminum phosphide	1
Methoprene	58	Magnesium phosphide	4
Naphtalene	52	Methyl bromide	1124
Nithiazine	1	Sulfuryl fluoride	614
Permethrin	2340	<b>Total Fumigants:</b>	<b>1743</b>
Phenothrin	153		
Phenylethyl propionate	12		
Prallethrin	4		
Propetamphos	76		
Propoxur	44		
Pyrethrins	364		
Pyriproxyfen	61		
Silica gel	210		

**MISCELLANEOUS**

Ammonium chloride	95
Capsaicin	<1
Eugenol	4
Isopropanol	9285
N-octyl bicycloheptene dicarboximide	867
Pipernyl butoxide	1861
Pepper oil	1
Phenylethyl propionate	<1
Strychnine	<1
Sulfur	138
Thiram	108
Tricosene	16
<b>Total Miscellaneous:</b>	<b>12375</b>

**TOTAL PESTICIDE USE: 41684 lbs ai**

**Table 2.** Highest use insecticides reported in the 2011 Structural Pesticide Use survey. Shown are compounds  $\geq 5\%$  of total insecticide use.

Compound	Lbs active ingredient	% of insecticide use
Fipronil	6456	26 %
Borate/Boric acid	3413	13 %
Bifenthrin	2821	11 %
Permethrin	2340	9 %
Imidacloprid	1455	6 %

**Table 3.** Totals by type of pest control as reported in the 2011 Structural Pesticide Use survey.

Pest Type	Lbs active ingredient	% of total use
<b>General Insect Pests - Indoors</b>	21984	46 %
<b>General Insect Pests – Perimeter</b>	7205	17 %
<b>Termites</b>	8037	28 %
<b>Vertebrates (mice, birds, etc.)</b>	2715	6 %
<b>Fumigation</b>	1743	4 %

**Table 4.** Pesticide use by county (in lbs active ingredient) as reported in the 2011 Structural Pesticide Use survey.

<b>COUNTY</b>	<b>Total County ai</b>	<b>% of Total ai</b>
Atlantic	3695	9 %
Bergen	4887	12 %
Burlington	1887	5 %
Camden	3718	9 %
Cape May	1561	4 %
Cumberland	554	1 %
Essex	2407	6 %
Gloucester	1144	3 %
Hudson	1080	2 %
Hunterdon	174	<1 %
Mercer	1350	3 %
Middlesex	3102	7 %
Monmouth	1948	5 %
Morris	1870	5 %
Ocean	2659	6 %
Passaic	3181	8 %
Salem	197	<1 %
Somerset	313	<1 %
Sussex	373	1 %
Union	1843	4 %
Warren	353	1 %
Not specified	3388	8 %