

STRUCTURAL PESTICIDE USE IN NEW JERSEY: 2002 SURVEY

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 2002 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 2002.

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. All general pesticide use information is available to the public.

Methods

The NJPCP's registration records were used to identify all 3195 licensed commercial applicators holding a category 7A (general and household pest control) and/or 7B (termite control) on his or her license. Survey forms for the 2002 Structural Pesticide Use survey, along with instructional letters and return envelopes, were mailed early in 2003. 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 during the first seven months of 2003.

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, 2804 out of 3195 (88%) surveys were received.

Table 1 lists the chemicals and their respective active ingredient amounts that appeared in the survey.

Table 2 selects out the highest use compounds. Fipronil was the highest use pesticide (in terms of pounds of active ingredient) in 2002 for structural pest control. Boron (in the form of borax and boric acid) was the second highest use compound and the most common inorganic compound used.

Table 3 shows pesticide use by type of pest control.

Table 4 shows pesticide use by county. Gloucester and Bergen had the highest reported use while Hunterdon, Salem, Sussex and Warren counties had the lowest reported use.

NOTE: The methyl bromide number in this report is estimated. It became obvious once the created database was being reviewed that many applicators had included both structural and commodity fumigation in their numbers. Adjustments were made based upon the nature of the submitting businesses but the number remains estimated and perhaps even overestimated.

For 2005, the next year planned for the structural pesticide use survey, a statement will be placed in the cover letter in an effort to correct this.

Table 1. Pesticide amounts (lbs active ingredient) reported in the New Jersey 2002 Structural Pesticide Use Survey.

INSECTICIDES:

Acephate	520
Allethrin	5
Amidinohydrazone	<1
Avermectin	5
Bendiocarb	458
Bifenthrin	1402
Boron	9136
Carbaryl	63
Chlorfenapyr	3
Chlorpyrifos	143
Cyfluthrin	1329
Cyhalothrin	2193
Cypermethrin	2655
DDVP	58
Deltamethrin	2654
Diatomaceous earth	<1
Diazinon	169
Diflubenzuron	1
Dimethoate	<1
Esfenvalerate	72
Fenoxycarb	<1
Fipronil	14172
Hexaflumuron	8
Hydramethylnon	135
Hydroprene	264
Imidacloprid	3122
Linalool	5
Methomyl	6
Methoprene	4
Naphtalene	34
OBD	650
Oil	579
Oxypurinol	2
PBO	5633
Permethrin	6800
Phenothrin	4
Phenylethyl propionate	26
Propetamphos	39
Propoxur	115
Pyrethrins	775
Pyriproxyfen	12
Resmethrin	2

Silica gel	1073
Soap	21
Sulfluramid	1
Tetramethrin	1
Tralomethrin	75
Xanthrin	2
Total Insecticides:	54427

RODENTICIDES:

Brodifacoum	2
Bromadiolone	7
Chlorophacinone	2
Difethialone	<1
Diphacinone	2
Vitamin D3	1
Warfarin	<1
Zinc Phosphide	67
Total Rodenticides:	82

FUMIGANTS

Aluminum Phosphide	1
Magnesium phosphide	1
Methyl Bromide	2301
Total Fumigants:	2303

MISCELLANEOUS

4-Aminopyridine	1
Ammonium chloride	1
Anthraquinone	338
Denatonium saccharid	<1
Eugenol	19
Isopropanol	269
Polybutene	41
Sulfur	20
Tricosene	<1
Total Miscellaneous:	690

TOTAL PESTICIDE USE: 57502

Table 2. Highest use compounds reported in the 2002 Structural Pesticide Use survey. Shown are compounds $\geq 4\%$ of total use.

Compound	Lbs active ingredient	% of total use
Fipronil	14174	24 %
Boron	9136	16 %
Permethrin	6800	12 %
PBO	5633	10 %
Imidacloprid	3122	5 %
Cypermethrin	2655	4 %
Deltamethrin	2654	4 %
Methyl bromide	2301	4 %
Cyhalothrin	2193	4 %

Table 3. Totals by type of pest control as reported in the 2002 Structural Pesticide Use survey.

Formulation Type	Lbs active ingredient	% of total use
General Pest Control (roaches, ants, wasps, spiders)	22777	40 %
Termite Control	31906	55 %
Vertebrate Control (mice, rats, bats)	516	1 %
Fumigation	2303	4 %

Table 4. Pesticide use by county and type of pest control as reported in the 2002 Structural Pesticide Use survey. The last column indicates percent of state total.

COUNTY	General	Termite	Vertebrate	Fumigation	Totals	% State Total
Atlantic	307	1237	1	--	1545	3 %
Bergen	5007	1224	7	15	6253	11 %
Burlington	585	2581	1	--	3167	6 %
Camden	683	2709	9	--	3401	6 %
Cape May	147	1037	8	--	1192	2 %
Cumberland	451	3774	1	--	4226	7 %
Essex	1076	2088	20	--	3184	6 %
Gloucester	4531	4435	1	--	8967	16 %
Hudson	870	457	26	--	1353	2 %
Hunterdon	343	294	4	15	656	1 %
Mercer	718	1394	11	--	2123	4 %
Middlesex	1224	2063	342	559	4188	7 %
Monmouth	1347	2543	2	419	4311	7 %
Morris	1087	1068	12	797	2964	5 %
Ocean	1810	1890	31	419	4150	7 %
Passaic	1158	953	4	1	2116	4 %
Salem	36	259	<1	--	295	1 %
Somerset	595	615	15	78	1303	2 %
Sussex	93	142	1	--	236	<1 %
Union	598	1098	20	--	1716	3 %
Warren	111	45	<1	--	156	<1 %