

LAWN CARE PESTICIDE USE IN NEW JERSEY: 1995 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, termite control, right-of-way, mosquito control, and lawn care. The lawn care survey is conducted every three years and targets pesticides used for lawn care purposes. This report focuses on the second survey completed in the lawn care series (1995).

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 geographical distribution.

Methods

The NJPCP's registration records were used to identify all 4142 licensed commercial applicators holding a category "3B" (turf) on his or her license. Surveys were mailed over an eight month period in 1996, the first mailing going to all New Jersey registered pesticide businesses with a responsible applicator holding a 3B category on his or her license. A second mailing went to all 3B applicators and a third mailing went out certified to non-respondents. Survey forms were mailed along with return envelopes and instructional letters asking for 1995 lawn care pesticide use. Lists of 3B businesses and applicators were kept in the office and marked off as surveys returned.

The survey requested information on each pesticide product used. This included trade name, EPA registration number, percent active ingredient, amounts applied and number of acres treated.

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, 3702 out of 4142 (89%) applicators were accounted for.

Table 1 lists the chemicals and their respective amounts appearing in the survey.

Table 2 selects out the highest use compounds.

Table 3 shows lawn care pesticide use by county.

In reporting and evaluating pesticide use, it is important to consider the many, diverse influences on pesticide use. No single factor, or even set of factors, can completely account for fluctuations in the amounts of pesticide active ingredients used from survey to survey. Weather conditions such as temperature and rainfall, in terms of duration, timing and amounts or degrees, influence pest pressure and the associated response. In agricultural settings, issues such as cropping patterns and the associated pest impacts vary from year to year. Economic factors play a significant role, ranging from crop demand to golf course playability to product and/or service cost. The changing face of land use also plays a part. While agricultural acreage has been declining, new home building starts and the associated lawns around those new homes have been increasing.

Another factor is the adoption of IPM (Integrated Pest Management). Short term, some pest control situations may require increased pesticide applications beyond the alternative means contained in an IPM program. Long term, however, IPM should result in overall pesticide use reduction. This may be confounded by the increased use of reduced-risk alternatives that may have higher application rates than the materials they replace.

[Curt Brown, RSII] revised 2/02

Table 1. Pesticide amounts (lbs. active ingredient) reported in the New Jersey 1995 Lawn Care Pesticide Use Survey.

HERBICIDES:		Sodium chlorate	30
		Tebuthiuron	4
2,4-D	46121	Triclopyr	8532
2,4-DP	4180	Trifluralin	9957
Amitrole	2	<hr/>	
Ammonium Chloride	<1	TOTAL HERBICIDES:	248316
Atrazine	18		
Benfluralin	19612	INSECTICIDES:	
Bensulide	972	Acephate	63
Bentazon	335	Bendiocarb	4421
Bromacil	9	Bifenthrin	1
Butylate	4	Boric acid	15
CAMA	<1	Carbaryl	9563
Chlorthal-Dimethyl	1570	Chlorpyrifos	28107
Clopyralid	1949	Chlorpyrifos-meth	4
Cyanazine	18	Cyfluthrin	78
Dicamba	7229	Cyhalothrin	2
Dichlorbenil	163	Diazinon	1032
Diquat	26	Dicofol	1
Dithiopyr	1116	Dimethoate	10
DSMA, MSMA	2779	Disulfoton	6
Endothal	20	Ethoprop	2
Fenoxaprop-ethyl	271	Fenbutatin oxide	<1
Fluazifop-butyl	<1	Fluvalinate	11
Glufosinate-ammonium	219	Fonofos	2583
Glyphosate	19542	Imidacloprid	8173
Imazapyr	1	Isazofos	1702
Isoxaben	565	Isofenphos	1403
MCPA	29181	Lindane	4
Mecoprop	33410	Malathion	343
Metalochlor	132	Oil	3233
Napropamide	296	Permethrin	800
Nonanoic acid	492	Pyrethrum	<1
Oryzalin	3161	Resmethrin	1
Oxadiazon	134	Rotenone	<1
Oxyfluorfen	11	Soap	187
Paraquat	55	Trichlorfon	31695
Pendimethalin	49141	<hr/>	
Prodiamine	5511	TOTAL INSECTICIDES:	93440
Prometon	866		
Sethoxydim	1		
Siduron	630		
Simazine	51		

FUNGICIDES:

Anilazine	270
Benomyl	165
Chloroneb	10
Chlorothalonil	12555
Cyproconazole	<1
Etridiazole	66
Fenarimol	79
Flutolanil	106
Fosetyl-al	1813
Iprodione	3954
Mancozeb	1805
Metalaxyl	338
Myclobutanil	83
Oxythioquinox	10
PMA	3
Propamocarb HCL	2780
Propiconazole	253
Quintozene	316
Thiophanate-methyl	1603
Thiram	2324
Triadimefon	2374
<u>Vinclozolin</u>	<u>1942</u>
TOTAL FUNGICIDES:	32849

TOTAL PESTICIDE USE: 374991

Herbicides:	66%
Insecticides:	25%
Fungicides:	9%
Other:	<1%

GROWTH HORMONES:

Chlorflurenol	51
Ethephon	<1
Flurprimidol	100
Mefluidide	55
<u>Trinexapac-ethyl</u>	<u>65</u>
TOTAL HORMONES:	271

REPELLENTS:

<u>Methyl Anthranilate</u>	<u>115</u>
TOTAL REPELLENTS:	115

Table 2. Highest use compounds from the main pesticide categories. Shown are compounds $\geq 5\%$ of class.

Compound	Lbs Active ingredient	% of class	% of total use
HERBICIDES:			
Pendimethalin	49141	20%	13.1%
2,4-D	46121	19%	12.3%
Mecoprop	33410	14%	8.9%
MCPA	29181	12%	7.8%
Benfluralin	19612	8%	5.2%
Glyphosate	19542	8%	5.2%
INSECTICIDES:			
Trichlorfon	31695	34%	8.5%
Chlorpyrifos	28107	30%	7.5%
Carbaryl	9563	10%	2.6%
Imidacloprid	8173	9%	2.2%
Bendiocarb	4421	5%	1.2%
FUNGICIDES:			
Chlorothalonil	12555	38%	3.3%
Iprodione	3954	12%	1.1%
Propamocarb HCl	2780	9%	0.7%
Triadimefon	2374	7%	0.6%
Thiram	2324	7%	0.6%
Vinclozolin	1942	6%	0.5%
Fosetyl-al	1813	6%	0.5%
Mancozeb	1805	6%	0.5%
Thiophanate-methyl	1603	5%	0.4%

Table 3. Total pesticide amounts (in pounds active ingredient) by county, 1995 lawn care survey.

<u>COUNTY</u>	<u>Amount</u>	<u>% of Total Use</u>
Atlantic	10147	3%
Bergen	42737	11%
Burlington	18202	5%
Camden	13334	4%
Cape May	2126	1%
Cumberland	4901	1%
Essex	11596	3%
Gloucester	29170	8%
Hudson	1120	<1%
Hunterdon	15271	4%
Mercer	14685	4%
Middlesex	37751	10%
Monmouth	50090	13%
Morris	53360	14%
Ocean	16439	4%
Passaic	7392	2%
Salem	183	<1%
Somerset	33056	9%
Sussex	1754	<1%
Union	8246	2%
Warren	3407	1%
<u>Not listed</u>	<u>24</u>	<u><1%</u>
TOTAL	374991	100%