NJ Department of Environmental Protection
Pesticide Control Program
Pesticide Evaluation & Monitoring

MOSQUITO CONTROL PESTICIDE USE IN NEW JERSEY – 2007

In the early part of 2008 the NJDEP/Pesticide Control Program (PCP) conducted a mosquito control pesticide use survey. The specific purpose of this project was to identify what chemicals and what quantities of each were used in 2007 for mosquito control. The survey was to supplement data gathered from previous pesticide use surveys for addressing the impact of pesticide use statewide. There is a general interest in the trends of pesticide use for mosquito control, especially due to the issue of West Nile virus transmission through mosquitoes.

Regarding survey procedures, three mailings were made over the course of six months to county mosquito control commissions and individuals carrying an 8B (mosquito control) or 8C (campground applicator) category code on his or her license. Survey forms, along with instructional letters and a return envelope, were mailed to these agencies or individuals asking for their 2007 mosquito control pesticide use. A survey mailing list was kept in the office. As surveys were received the various mosquito control applicators were marked off the list. Second and third mailings were made to non-respondents indicating that the previously mailed survey had not been received.

Survey information was entered into a database file. This information file was then merged with a second database that linked trade names with chemical names, and a subprogram converted reported amounts of formulated product to pounds of active ingredient (lbs ai).

Once all three mailings were completed, 539 out of 585 (92%) applicators were accounted for.

Pesticides used for mosquito control in New Jersey for 2007 totaled 60812 lbs ai.

Table 1 lists the chemicals and their amounts in lbs ai appearing in the 2007 survey. The trade names corresponding with these chemicals are also included. Various factors, such as weather, can influence pest populations from year to year and vary that year's pesticide use response. Allotted funding from year to year could also affect pesticide use totals.

Table 2 lists the chemicals and their lbs ai amounts applied by site for 2007.

Table 3 lists the chemicals and their lbs ai amounts applied by county for 2007.

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.

Table 1. Compounds appearing in the 2007 Mosquito Control Pesticide Use Survey and their amounts (pounds active ingredient). Not all brand names are listed, only the most popular according to the survey.

Chemical	Brand Name	Pounds a.i.
Bifenthrin	Talstar	35
B. sphaericus	Vectolex	2826
B. thuringensis	Teknar, Aquabac, Vectobac	25308
Cyfluthrin	Tempo	15
Cyhalothrin	Demand	5
Deltamethrin	Suspend	>1
Isooctadecanol	Agnique	295
Malathion	Fyfanon	2968
Methoprene	Altosid	373
OBD	(synergist)	1
Oil	Bonide, Golden Bear	19392
Permethrin	Aqua Reslin	9
Phenothrin	Anvil	83
Piperonyl butoxide	(synergist)	2141
Prallethrin	Duet	2
Pyrethrins	Hydrom 300	>1
Resmethrin	Scourge	683
Temephos	Abate	6676
Total:		60812

Table 2. Pesticide amounts (in active ingredient) in the 2007 Mosquito Control Pesticide Use survey by site.

Site	Pounds a.i.	Percent of Total
Residential/Commercial	10285	14%
Parks, campgrounds	576	<1%
Golf courses	473	<1%
Catch basins, ditches	25385	35%
Coastal wetlands	11883	16%
Non-coastal wetlands	15183	21%
Lakes, ponds	1718	2%
Other*/No code	8050	11%
Total:	60812	100%

* "Other" sites include uplands (Cape May), tires and other artificial containers, retention basins, sewage treatment plants, woodland pools, flood water and abandoned swimming pools.

Table 3. Pesticide amounts (in active ingredient) in the 2007 Mosquito Control Pesticide Use survey by county.

County	Pounds a.i.	Percent of Total
Atlantic	4633	8 %
Bergen	1729	3 %
Burlington	4208	7 %
Camden	561	1 %
Cape May	6223	10 %
Cumberland	2473	4 %
Essex	4453	7 %
Gloucester	2593	4 %
Hudson	2280	4 %
Hunterdon	17	<1 %
Mercer	1345	2 %
Middlesex	13508	22 %
Monmouth	1245	2 %
Morris	1517	3 %
Ocean	8381	14 %
Passaic	771	1 %
Salem	707	1 %
Somerset	1301	2 %
Sussex	1263	2 %
Union	1002	2 %
Warren	602	1 %
Total:	73553	100%