

MOSQUITO CONTROL PESTICIDE USE IN NEW JERSEY – 2010

In the early part of 2011 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 2010 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 2010 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, 531 out of 567 (93%) applicators were accounted for.

Pesticides used for mosquito control in New Jersey for 2010 totaled 42453 lbs ai.

Table 1 lists the chemicals and their amounts in lbs ai appearing in the 2010 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 2010.

Table 3 lists the chemicals and their lbs ai amounts applied by county for 2010.

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 2010 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	24
B. sphaericus	Vectomax, Vectolex	767
B. thuringensis	Teknar, Aquabac, Vectobac	15535
Cyfluthrin	Tempo, Cykick	12
Cyhalothrin	Demand	3
Esfenvalerate	Conquer	13
Etofenprox	Zenivex	242
Fluvalinate	Mavrik	1
Garlic Oil	Mosquito Barrier	50
Isooctadecanol	Agnique	87
Malathion	Fyfanon	2928
Methoprene	Altosid	300
Oil	Bonide, Golden Bear	17623
Permethrin	Aqua Reslin, Flit	122
Phenothrin	Anvil	90
Piperonyl butoxide	(synergist)	1182
Prallethrin	Duet	15
Pyriproxyfen	Nyguard	17
Resmethrin	Scourge	331
Spinosad	Natular	<1
Temephos	Abate, Skeeter	3110
Total:		42453

Table 2. Pesticide amounts (in active ingredient) in the 2010 Mosquito Control Pesticide Use survey by site.

Site	Pounds a.i.	Percent of Total
Residential/Commercial	4946	12%
Parks, campgrounds	5303	13%
Golf courses	31	<1%
Catch basins, ditches	4931	12%
Coastal wetlands	12169	28%
Non-coastal wetlands	12590	29%
Lakes, ponds	25	<1%
Other*/No code	2458	6%
Total:	42453	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 2010 Mosquito Control Pesticide Use survey by county.

County	Pounds a.i.	Percent of Total
Atlantic	4691	11 %
Bergen	649	1 %
Burlington	2375	6 %
Camden	682	2 %
Cape May	3394	8 %
Cumberland	1263	3 %
Essex	534	1 %
Gloucester	4680	11 %
Hudson	248	<1 %
Hunterdon	341	1 %
Mercer	717	2 %
Middlesex	11057	26 %
Monmouth	1365	3 %
Morris	1106	3 %
Ocean	4007	9 %
Passaic	591	1 %
Salem	1849	4 %
Somerset	1617	4 %
Sussex	100	<1 %
Union	675	2 %
Warren	511	1 %
Total:	42453	100%