

MOSQUITO CONTROL PESTICIDE USE IN NEW JERSEY – 2013

In the early part of 2014 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 2013 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 2013 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, 513 out of 567 (90%) applicators were accounted for. Pesticides used for mosquito control in New Jersey for 2013 totaled 40054 lbs ai.

Table 1 lists the chemicals and their amounts in lbs ai appearing in the 2013 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 2013.

Table 3 lists the chemicals and their lbs ai amounts applied by county for 2013.

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 2013 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.
Acetamiprid	Transport	<1
Bifenthrin	Talstar, Crosscheck	236
B. sphaericus	Fourstar, Vectolex	1831
B. thuringensis	Aquabac, Vectobac	11045
Cyfluthrin	Cykick	123
Cyhalothrin	Demand	6
Deltamethrin	Suspend	<1
Esfenvalerate	Conquer	13
Etofenprox	Zenivex	205
Fluvalinate	Mavrik	1
Isooctadecanol	Agnique	595
Malathion	Fyfanon	1692
Methoprene	Altosid	211
OBD	BP 100	<1
Oil	Bonide, Golden Bear, BVA	15397
Permethrin	Aqua Reslin	122
Phenothrin	Duet	191
Piperonyl butoxide	(synergist)	2875
Prallethrin	Duet	27
Pyriproxyfen	Nyguard	<1
Resmethrin	Scourge	851
Spinosad	Natular	8
Temephos	Abate, Provect	4624
Total:		40054

Table 2. Pesticide amounts (in active ingredient) in the 2013 Mosquito Control Pesticide Use survey by site.

Site	Pounds a.i.	Percent of Total
Residential/Commercial	6192	15%
Parks, campgrounds	2098	6%
Golf courses	100	<1%
Catch basins, ditches	6983	17%
Coastal wetlands	7393	18%
Non-coastal wetlands	13943	35%
Lakes, ponds	43	<1%
Other*/No code	3302	9%
Total:	40054	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 2013 Mosquito Control Pesticide Use survey by county.

County	Pounds a.i.	Percent of Total
Atlantic	2710	7 %
Bergen	656	2 %
Burlington	3583	9 %
Camden	560	1 %
Cape May	4781	12 %
Cumberland	323	1 %
Essex	151	<1 %
Gloucester	3054	7 %
Hudson	227	1 %
Hunterdon	51	<1 %
Mercer	1385	3 %
Middlesex	5797	14 %
Monmouth	1796	4 %
Morris	2720	7 %
Ocean	4148	10 %
Passaic	445	1 %
Salem	2151	5 %
Somerset	639	2 %
Sussex	1558	4 %
Union	2614	6 %
Warren	705	2 %
Total:	40054	100%