

## **Mosquitoes Question and Answer Sheet**

**Distributed by:  
Hunterdon County Mosquito and Vector Control Program**

### **Background**

This Q&A sheet has been produced to help residents and local officials understand information pertaining to mosquito control in Hunterdon County. It was designed by personnel from the Hunterdon County Mosquito and Vector Control Program (HCMVCP) and was approved by the New Jersey Department of Environmental Protection, Pesticide Control Program as per the Pesticide Control Regulations (N.J.A.C. Title 7:30). Municipalities are encouraged to share this information with all residents in their community.

### **What is the life cycle of mosquitoes?**

Details of the mosquito life cycle are described in the following pages. In summary, mosquitoes spend the immature stages of their lives in water. Some adult female mosquitoes require a blood meal for the production of eggs. Females lay their eggs in a variety of aquatic environments, including both transient and permanent bodies of water. Mosquitoes are extremely diverse insects; more than 32 species inhabit areas of Hunterdon County alone.

### **What diseases do mosquitoes cause?**

In the eastern United States, mosquitoes transmit a variety of diseases including West Nile virus (WNV), eastern equine encephalitis (EEE), St. Louis encephalitis, LaCrosse virus, malaria and dog heartworm. WNV, a mosquito-borne virus causing encephalitis, was first recognized in New York City in 1999. WNV affects a variety of wildlife, horses and humans. The primary vector of WNV is a mosquito commonly found around homes. A WNV vaccine for horses was conditionally approved by the United States Department of Agriculture in 2001 and has been in use since.

### **What are the functions of the Hunterdon County Mosquito and Vector Control Program?**

The HCMVCP was established in 2000 and conducts surveillance/control of mosquitoes, black flies and ticks. The focus of the program has been mosquito surveillance and control based on the statutory mandate (N.J.S.A. Title 26:9) "to perform all acts which in its opinion may be necessary for the elimination of mosquito breeding areas, or which will tend to exterminate mosquitoes within the county." The HCMVCP has incorporated tick and black fly surveillance in the past few years. The program's activities are guided through comprehensive surveillance, which includes trapping, collecting, etc. to evaluate populations of various species. Mosquitoes are controlled by source reduction, chemical, and biological control. Emphasis is placed on the control of mosquitoes when they are in the aquatic stages of their development.

### **What control efforts are utilized by the HCMVCP?**

The HCMVCP uses an integrated pest management (IPM) approach to controlling mosquitoes. IPM incorporates various methods of control, including the use of biological and synthetic products when needed. With an IPM strategy, control efforts focus primarily on the immature, water-borne stages of the

mosquito. Larval control can be very effective because larvae are more concentrated and accessible than the adult mosquitoes, which disperse after emerging. Adult control can be effective and is used when larviciding is inappropriate. Larval control encompasses a variety of techniques and is not limited to synthetic chemicals. Most larval control in Hunterdon is conducted through the use of biologically derived agents. This includes bacterial products such as *Bacillus thuringiensis israelensis* (abbreviated "Bti") and *Bacillus sphaericus*, and through the use of live organisms such as the mosquito fish, *Gambusia affinis*. All products used by the HCMVCP are registered and licensed by the United States Environmental Protection Agency. They are registered for use by the New Jersey Department of Environmental Protection and are approved for use by the New Jersey Agricultural Experiment Station (NJAES). Biological agents, such as fungi and nematodes, that are not recommended by NJAES for mosquito control are not part of a proper IPM program and are not used by the HCMVCP. Additional information can be obtained by visiting the Hunterdon County website: <http://www.co.hunterdon.nj.us>.

### **What are the winter activities of the HCMVCP?**

Field activities, such as tire cleanup, mapping of sites, laboratory analysis of mosquitoes, etc. are conducted year round. Control operations generally start in February with the hatching of woodland pool mosquito species and continue through November. Inspection routes and trapping sites are revised and analyzed during the winter months. Educational presentations are made for citizen groups, etc. on mosquitoes, black flies, bed bugs ticks and other insects as well during this time. Simply contact HCMVCP for further details on these programs.

### **What can homeowners do to help control mosquitoes?**

- Homeowners can provide effective control by eliminating standing water on their property. Any container holding water is a potential source of mosquito production. Of particular concern are clogged gutters and scattered tires. Residents should keep gutters clean and remove or overturn containers if possible. Items such as birdbaths should be emptied and refilled at least once a week.
- Small depressions in the yard can be filled to prevent the collection of water. If larger wet areas exist on the property, residents should bring them to the attention of HCMVCP personnel.
- Keeping adult mosquitoes out of the home is an additional step residents can take. Window and door screens should be properly fitted and holes patched to prevent mosquitoes from entering the home.
- A variety of repellents are available to provide relief from mosquitoes and other insects. Historically, the most effective repellents are those containing the active ingredient DEET.

### **What do I do if there are mosquito problems around my home?**

If mosquitoes present a problem in your area, contact the HCMVCP office at (908) 788-1351. The staff will investigate your call. Each area is inspected to verify the presence of mosquitoes. Adult mosquitoes are often collected for surveillance purposes and virus testing.

### **How do residents avoid exposure to pesticides?**

Larvicides are most frequently applied in areas where there is no exposure to people. However, people should take the same precautions that are used when handling chemicals around the home to avoid exposure. Avoid consumption and direct exposure to any larvicide or adulticide. If residents are in a spray zone, windows can be closed to reduce drift into a home. Adulticide products are sprayed on a low rate basis. Exposure to outdoor products is therefore minimal and there is generally no need to move items

indoors. However, exposure can be avoided by covering outdoor items if needed. Higher risk individuals, particularly pregnant women, children and those who are chronically ill should avoid direct contact with pesticides. Exposure can be reduced by keeping a distance from application equipment and avoiding immediate and direct contact with habitat that has been treated. Treatment information is routinely updated during the field season on the Hunterdon County website: <http://www.co.hunterdon.nj.us>.

### **What are the symptoms of pesticide exposure?**

Symptoms of exposure vary with each product and vary with the amount of exposure. Generally speaking, exposure to small doses may cause mild irritation to the skin and eyes. Because symptoms vary so greatly, and because symptoms of exposure can present themselves like many other illnesses, residents should contact a physician if they suspect they have been exposed to a pesticide. Residents should also contact the New Jersey Poison Information and Education System (1-800-222-1222) if they have been exposed to a pesticide. The Material Safety Data Sheets (MSDSs) provide useful first aid information for individuals who have been exposed to a concentrated material (for example, exposure during the mixing process). MSDSs for products used by the HCMVCP are available to residents upon request. Pesticide fact sheets, which are included in this packet, provide more detailed information on inadvertent and mild exposure to pesticides.

### **Where can I find more specific information on the activities of the mosquito program?**

Current activities of the mosquito program can be found at the Hunterdon County website: <http://www.co.hunterdon.nj.us> or by calling the HCMVCP office at 908-788-1351. Information on the website changes on an as needed basis over the course of the season. Items included on the web page include maps of disease activity, announcements, information on products used in mosquito control, and information pertaining to mosquito spraying. Area-wide spraying notifications are also announced in newspaper advertisements (typically in the *Hunterdon Democrat*, *Courier News*, *Easton Express Times* or *Star Ledger*) over the course of the season. These announcements provide details on products used and appropriate contact information. An example of such an announcement is provided on the last page of this packet.

### **With whom do I correspond to attain more technical information on pesticide usage and exposure?**

**National Pesticide Information Center** (for overall information 9:30 AM – 7:30 PM)  
800-858-7378

**New Jersey Poison and Information and Education System** (for pesticide health information and exposure)  
800-222-1222

**NJDEP Pesticide Control Program** (for NJ pesticide regulations and misuse complaints)  
609-984-6057

**US Environmental Protection Agency, Region 2 Office** (for federal pesticide regulation)  
732-321-6759

**NJDEP Office of Mosquito Control Coordination** (for State-wide mosquito control information)  
609-292-3649

**Hunterdon County Division of Health** (for local mosquito control information)  
908-788-1351

Hunterdon County Division of Health

In compliance with Section 9.10 of the New Jersey Pesticide Control Code (N.J.A.C. Title 7, Chapter 30) notice is hereby given that the Hunterdon County Division of Health, Route 12 County Complex Flemington, NJ 08822 will be applying insecticides for the control of larval black flies on an area wide basis in Hunterdon County (primarily in the South Branch of the Raritan River), as needed, during the period of April 20, 2012 through October 16, 2012. The Hunterdon County Division of Health will also be applying insecticides for the control of adult mosquitoes, on an area wide basis in Hunterdon County as needed, during the period of May 18, 2012 through November 20, 2012. The insecticide to be used for larval black flies [with active ingredient (a.i.) *Bacillus thuringiensis israelensis*] will be Vectobac 12AS (EPA reg #73049-38) applied according to product labeling. The products to be used in adult mosquito control could be Scourge 4+12 [a.i. resmethrin and piperonyl butoxide (PBO)] (EPA reg #432-716), Scourge 18+54 (a.i. resmethrin and PBO)(EPA reg #432-667), Atrapa VCP (a.i. malathion) (EPA reg #1812-407), Anvil 2+2 (a.i. sumithrin)( EPA reg #1021-1687-8329), and Zenivex E20 (a.i. etofenprox)( EPA reg #2724-791). All products will be applied with truck-mounted or handheld equipment (nothing by aircraft).

All persons interested in obtaining additional information regarding these activities may call the program coordinator, Mr. Tadhg Rainey (Pesticide License # 24344B) at (908) 788-1351, Rte 12 Complex, Flemington, NJ 08822 or by visiting the Hunterdon County Website: [www.co.hunterdon.nj.us](http://www.co.hunterdon.nj.us). "Upon request the pesticide applicator or applicator business shall provide a resident with notification at least 12 hours prior to the application, except for Quarantine and Disease Vector Control only, when conditions necessitate pesticide applications sooner than that time." In order for health department officials to correctly identify these areas, residents should indicate the name, street address and phone number at the residence, and should make such requests annually (no deadline is required) in writing or by email. For routine health inquiries or pesticide exposure information please contact the National Pesticide Information Center at 1-800-858-7378. For emergencies relating to pesticides contact the New Jersey Poison Information and Education System at 1-800-222-1222. Contact "this number for pesticide regulation information, pesticide complaints, and health referrals" 1-609-984-6507 (NJ Pesticide Control Program).