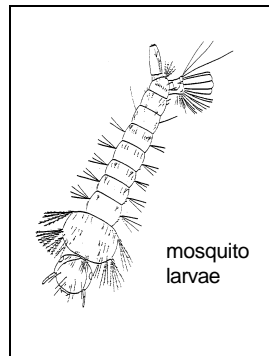


**LARVICIDING**

The material of choice for larviciding is called **Bti**. Bti stands for *Bacillus thuringiensis israelensis*, a non-reproducing bacterium discovered in the soil of Israel's Negev desert in 1977. When the mosquito larvae eat the Bti spores and crystals, they enter the larvae's stomach and dissolve. These crystals produce a toxin that is fatal to the mosquito but has little or no impact on other aquatic life. Commercial manufactures have produced several different formulations to provide a variety of application methods.

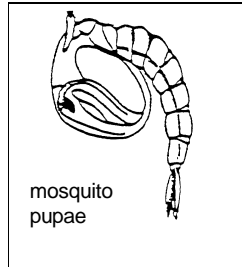
Liquid Bti can be used in hand held pump cans, back pack sprayers or truck mounted sprayers. One truck mounted sprayer, called a *hydraulic sprayer*, delivers a diluted amount of Bti at a pre-determined rate, according to



label directions and present larval conditions. The Bti is mixed with water to insure uniform coverage. The hydraulic sprayer delivers the mixed solution to the area that has been determined to hold sufficient amounts of larvae to justify an application. This method is used to apply

the Bti in larger areas along roadsides and other accessible areas.

A granular type of Bti can be used in different ways. Aircraft, either fixed wing or helicopter, are used to deliver it to large, widespread areas inaccessible to any truck or hand application because of size or location. It can be broadcast by hand, where the applicator can access areas not available to truck mounted or aerial applications due to a heavy tree cover.



Another product used by CMMCP is called **methoprene**. Methoprene is an insect growth regulator, and is specific to mosquito larvae. When a mosquito larvae is about to pupate, a hormone in the larvae shuts down, allowing it to pupate. The presence of methoprene in the water disrupts this cycle, and interferes with the mosquito's pupation. The mosquito will not hatch into a viable adult. At this time, CMMCP uses methoprene in catch basins only. Storm drains throughout town are checked to see if they are holding water, and if so, methoprene is added to reduce the potential of mosquito annoyance from these areas. All of these applications are conducted during the daytime hours.

**ADULTICIDING**

The Central Massachusetts Mosquito Control Project conducts an early evening spray program which runs from approximately Memorial Day to Labor Day. Weather and mosquito populations determine the actual beginning and end of the program. The time of day the applications take place is from early evening to late evening. During this time the mosquito is most active, and spraying at these times allows us to control the mosquito with a minimal risk of exposure to the public.

The type of spraying practiced by CMMCP is called **ULV spraying**. ULV is an abbreviation for *ultra low volume*, a method of spraying which uses a small amount of insecticide to cover large areas. This procedure allows us to control mosquitoes, and to be as environmentally sensitive as possible. The spray machines are mounted on the back of pickup trucks, and the applicator drives the vehicle in the areas to be sprayed. The vehicle operator controls the spray from inside the truck, without the need to completely shut down the spray machine.

The product name of the mosquito adulticide used by CMMCP is called *Scourge*®. It is a combination of two ingredients, **resmethrin** and **piperonyl butoxide**. Resmethrin

is a synthetic pyrethroid, and piperonyl butoxide is a synergist (a chemical which enhances the ability of another), which allows resmethrin to control the mosquitoes at a much lower concentration. *Scourge*® is then mixed with mineral oil, which is used as a diluent. The ratio of mineral oil to *Scourge*® is 4.5:1. It is sprayed from the truck at 3 ounces per minute, at a vehicle speed of 10 mph. This works out to 0.5 oz. of *Scourge*® and oil per acre. The actual amount of resmethrin sprayed over a 1 acre plot is approximately equal to one fifth of a thimble, or about 10-15 drops from an eyedropper, and this presents a minimal risk to humans, pets and non-target species. The active ingredient in *Scourge*® photo-degrades (breaks down in sunlight) in less than 4 hours.

If for any reason a person wishes their property to be **excluded** from mosquito spraying, a registered letter with the name of their property abutters has to be sent to their local Town Clerk every year by March 1<sup>st</sup>, with a copy to our office. The property to be excluded also has to be marked every 50 feet with signs (paper plates) indicating **No Spray**. Or they can call our office to be added to the "No Spray" list as a courtesy. Any questions about our program can be directed to our office at **(508) 393-3055**.