

FREQUENTLY ASKED QUESTIONS

- **HOW DO YOU CONTROL MOSQUITOES?**

Unfortunately it is impossible to completely eradicate the mosquito, so at Hillsborough County Mosquito Control we focus our efforts on controlling the population in order to reduce the nuisance factor and protect public health. To do this, we use a multi-faceted approach, which consists of source reduction, larviciding, adulticiding, barrier sprays, education, and biological control methods.

- **WHAT IS SOURCE REDUCTION?**

Source reduction involves finding and eliminating potential mosquito breeding areas. Mosquitoes need water for their eggs to hatch and for the larvae to survive until adulthood. These sources often include common items such as bird baths, untended swimming pools, old tires, buckets, trash can lids, and even hollow-stemmed plants such as bromeliads. Anything that holds water is a potential mosquito nursery. When we receive a citizen's request for service, our first action is to send an inspector to the location to look for these items, and educate the homeowner about keeping these areas clean and dry, or rinsing them periodically with fresh water.

- **WHAT IS LARVICIDING?**

Larviciding is the act of killing mosquito larvae, while they are condensed in small areas of standing water, before they have a chance to metamorphose into flying biting insects. We use a variety of different products to accomplish this, depending on the location, the amount and type of larvae, and the stage of the development. Chemicals used vary from specialized pesticides to insect growth regulators (IGRs) to environmentally friendly bacteria-based biological larvicides.

- **WHAT IS ADULTICIDING?**

Adulticiding is the act of killing adult mosquitoes. Using trucks and aircraft, we release a condensed plume of ultra low volume (ULV) insecticide into the air, which spreads out with the prevailing wind and adheres to the wings of the mosquitoes and kills them. The amount of chemical used is designed to be target specific, in that it kills mosquitoes without harming anything else.

- **WHAT IS "ULV" SPRAYING?**

Forty years ago, insecticides intended to kill adult flying mosquitoes were commonly mixed with diesel fuel and vaporized with heat, forming a thick fog. Not only was this fog a traffic hazard, but it had an unpleasant lingering odor and raised some environmental concerns. Today, instead of combining our insecticides with water or oils, they are sprayed out in ultra low volume (ULV) concentrations. Our spray trucks (and aircraft) apply a very fine mist of insecticide droplets so small that you could fit 100 of them on the head of a pin. By calibrating our equipment to release just the right size of droplet, we maximize the efficiency of each and every droplet to kill a mosquito rather than evaporate or be deposited on the ground. This allows us to use less pesticide, saving money and substantially reducing any impact on the environment.

- **WHAT IS A BARRIER SPRAY?**

A barrier spray is a coating of pesticide sprayed onto foliage surrounding an area that has been inundated by mosquitoes. While it does not kill mosquitoes, it repels them, and adheres to the underside of the foliage, depriving them of their resting places. When our inspectors are unable to locate a treatable source of mosquito breeding, and a homeowner is surrounded by tree canopy where mosquitoes like to rest, the inspector may resort to using a barrier spray to provide the homeowner some temporary relief.

- **WHAT ARE BIOLOGICAL METHODS OF MOSQUITO CONTROL?**

Biological methods involve using the mosquito's natural enemies to reduce the population. One method we have available to us is the use of *Gambusia*, or Mosquitofish in ponds and other water sources. Most ponds already contain these and other fish, which feast on mosquitoes in the larval stages, but when new ponds or canals are created, it often takes many weeks or months before fish naturally occur. We can help those situations along by providing fish from our stock to keep those areas from becoming prolific mosquito nurseries.

- **WHEN DO THE ULV SPRAY TRUCKS COME OUT?**

Mosquitoes like warm, dark, still and humid environmental conditions. High winds, low humidity, sunlight or cold temperatures can force mosquitoes to take cover deep within the vegetation, making our spraying ineffective. Only those mosquitoes which are up and flying, thus coming in contact with the spray, are likely to be killed. For this reason, we attempt to time our truck treatments so that the maximum number of mosquitoes will be reached by the spray mist. Our trucks spray at dusk and beyond, and the hours just before dawn, when mosquito activity is at its peak.

- **WHY NOT SPRAY DURING THE DAYTIME?**

Many mosquitoes do not fly during the daytime, so our spray would be less effective. Also, sunlight produces thermal air currents which tend to make the spray mist rise up into the sky instead of staying down low where the mosquitoes fly. Most importantly, we attempt to minimize human exposure to our insecticides, and this is not possible during daytime hours. Another important consideration is the risk to beneficial insects such as bees, ladybugs and dragonflies, which are also active during the day.

- **DOES THE EFFECT LAST?**

The insecticides we use are not persistent. They only kill the mosquitoes present and flying at the time of the treatment. There is no residual effect, so any new mosquitoes which infiltrate the area shortly after a ULV treatment are not killed. This is important, since a more persistent pesticide might also kill beneficial insects over the next several days.

- **WHY NOT SPRAY INDIVIDUAL HOMES?**

ULV truck spraying is used to treat broad areas, not single homes. It is important to kill all of the mosquitoes over a large area in order to achieve long-lasting mosquito control -- otherwise, untreated mosquitoes from surrounding areas will rapidly diffuse into the treatment zone.

- **WHY DIDN'T YOU RESPOND IMMEDIATELY TO MY REQUEST?**

As the saying goes, "when it rains, it pours." Heavy rains in warm weather usually precipitate a large mosquito hatch-off by about a week. Immediately after a significant rain event, our inspectors are busy treating the standing water for larvae in order to reduce the magnitude of the impending invasion. Once it occurs, our office is flooded with requests for service, and we must prioritize our efforts. We use a combination of citizen requests, employee observations and trap counts from mosquito traps placed throughout the county to determine the areas of highest infestation.

- **WHY DOESN'T IT WORK EVERY TIME?**

ULV truck spraying can do a good job of controlling pest mosquitoes; however the spray mist can only effectively drift about 300 feet. In the suburban and rural areas of the county, as roads become fewer and further in between, gaps develop in the treatment pattern. This leaves areas of woods and groves untreated, and the mosquitoes there will soon infiltrate previously mosquito-

free areas, causing new pest problems. Another problem exists along ocean front property, where onshore breezes may prevent our spray from reaching those homes closest to the ocean.

- **WHY DID YOU MISS OUR STREET?**

There are several reasons you may have heard a ULV truck in your area yet did not see it come down your street:

- You may live near the border of one of our spray zones and the truck was actually treating an adjacent zone;
- The driver simply missed your street. Although we train our drivers, even ones with great experience can miss a street while driving at night;
- If you live in a gated community, the gate codes may have been changed recently, and we were not informed. Please make sure that our office is aware of any gate code changes;
- Our spray trucks now are much quieter than in the past. If you commonly keep your windows closed, you may not even notice when the truck comes by;
- Did we ever spray your street? In neighborhoods with closely-spaced roads, we may only treat the north-south or east-west streets because the spray drift is sufficient to cover the entire block;
- Do you live on a new street? New housing developments are being added continuously. The street simply may not yet have been added to our route;
- Do you live on an unmaintained dirt road? Especially after a hard rain, some dirt roads in the county can become so muddy, rutted or flooded that our drivers elect to skip them rather than risk becoming stuck or damaging the truck. We will resume spraying when conditions improve.

In any event, if you feel that the spray truck missed your street, call our office and we will check into the situation.

- **DO YOU SPRAY WITH AIRCRAFT?**

While aerial ULV spraying typically achieves better coverage than ground treatments, it is also a larger scale operation, and must be planned carefully to achieve the desired effect. Temperature, humidity and wind conditions must be taken into account in order for the spray to get down to the desired level in the target area, and special care must be taken to avoid impacting bees and organic farms. For these reasons, we are selective about when and where we conduct aerial applications of adulticide. Also, our helicopter has a full time mission during the day conducting larvicide operations.

- **HOW DO YOU LARVICIDE WITH THE HELICOPTER?**

Hillsborough County has many large areas of salt marsh and pastureland, which after high tides and heavy rain events often hold water long enough for several generations of mosquito to be produced. We use the helicopter to get to those areas we cannot check by ground vehicle, and also to treat areas too large to be sprayed by truck. We primarily use an environmentally friendly biological larvicide that releases a bacteria which, when eaten by the mosquito (and black fly) larvae, causes them to sicken and die. We are able to treat 50 acres with each load, and up to 1000 acres per day.