

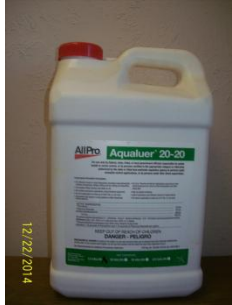
Adult Mosquito Control Pesticide We Use...

Synthetic Pyrethroids(Pyrethrum)

- For truck mounted ground spraying the City of Ennis Department of Health Services uses a product called Aqualuer 20-20, a water-soluble synthetic permethrin. Aqualuer 20-20 is an effective yet environmentally sensitive product, spraying equipment is calibrated in keeping with the pesticide's label for application requirements as required by law. This pesticide has been judged by the United States Environmental Protection Agency (EPA) not to pose an unreasonable risk to human health.
- People who are concerned about exposure to a pesticide, such as those with chemical sensitivity or breathing conditions such as asthma, can reduce their potential for exposure by staying indoors during the application period.
- Pyrethrum is a natural insecticide derived from the chrysanthemum flower; pyrethrins are naturally occurring components of this compound.
- Synthetic pyrethroids are artificially created variants of natural pyrethrin.
- Pyrethrins are widely used for chemical control of insects.
- This product is a nerve toxins. Toxicity is achieved through interference with sodium ion channels in insect nerve tissue.
- This chemical has an extremely low toxicity to humans and other mammals as it rapidly break down.
- Environmental persistence of this chemical is extremely low, and it rapidly break down in sunlight.
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- Health Department staff sprays only targeted areas. Targeted areas include areas where West Nile Virus has been isolated in a mosquito sample or if a case of illness is suspected or confirmed in humans. Since spraying does not eliminate all mosquitoes, it is important that citizens do what they can to protect themselves and that mosquito breeding sources around the home be eliminated.
- The Health Department schedules spraying events during overnight hours to limit exposure to people who may wish to avoid contact with the pesticide used to control mosquito populations. Depending on weather conditions spraying events begin at 9 p.m. with the goal of ending by 2 a.m., depending upon the size of the spray area.

More information about Aqualuer 20-20...

Synthetic Pyrethroid (Pyrethrin)		
Aqualuer 20-20	Label	MSDS



Aqualuer 20 20



Truck mounted sprayer



Truck mounted sprayer in action



Adult Mosquito

Mosquito Larvae Control Pesticides We Use...

Biological Pesticides

Bacterial Toxins

- Bacillus thuringiensis israelensis/ Bacillus sphaericus are naturally occurring
- Bacteria that are toxic to developing mosquito larvae.
- When ingested by mosquito larvae these bacteria produce toxins that impair the larvae's ability to digest food, and they die of starvation
- These toxic effects are highly specific to certain types of insects and are not dangerous to humans or in most cases to other insects

Insect Growth Regulators

- These products prevent developing mosquito larvae from reaching maturity by mimicking insect hormones.
- Growth regulation is specific to certain species and toxicity to humans and other species is considered to be non-existent.
- These products do not actually kill larvae, but prevent them from maturing; they are effective for very long periods.

Information on biological pesticides the Department often uses...

Biological Pesticides		
Altosid Pro G (methoprene)	Label	MSDS
Bacillus thuringiensis israelensis/ Bacillus sphaericus	Label	MSDS



Altosid

| Bacillus thuringiensis israelensis/ Bacillus sphaericus

Non-Toxic Pesticide We Use...

Monomolecular Surface Film

- Mosquito larvae must breathe oxygen at the surface of the water where they breed in order to survive.
- Surface films can interfere with the larvae reaching the surface, and they will asphyxiate.
- This method of killing larvae relies on a physical mechanism rather than chemical, so toxicity and development of chemical resistance are essentially non-existent.
- Monomolecular surface film, made from natural plant oils, require only a single molecular layer to change the surface tension of the water and prevent the larvae from reaching the surface; these products are very cost-effective due to low use volume.

- The product that the mosquito control program uses is labeled as safe for use on potable water sources.

Information on monomolecular surface film the Department uses...

Non-Toxic Pesticide		
Agnique	Label	MSDS
Cocobear (active ingredient: mineral oil)	Label	MSDS



Mosquito Larvae attached to water surface



Agnique



Cocobear

More Information on EPA approved mosquito control products

Fact Sheets	
Pyrethrins	NPIC Fact Sheet
Bacillus Products	NPIC Fact Sheet
General Larval Control	EPA Fact Sheet

EPA MOSQUITO CONTROL

<http://www2.epa.gov/mosquitocontrol>





Mosquito Facts

Mosquitoes don't need blood to live. Their main energy source is nectar from plants. But females must consume blood before they can lay eggs, so only the females bite.

Females live only about a week to 10 days and need a three-day cycle from the time of a blood meal to the time of laying eggs. A female will lay eggs only two or three times during a lifetime.

Most mosquitoes don't travel far from their birthplaces, especially those that breed in urban habitats. However, marshland mosquitoes can travel 10 to 12 miles looking for water and blood meals in dry weather.

Mosquitoes are attracted to blue lights and dark clothing, but not to reds and yellows. They are especially attracted to carbon dioxide.

They also are attracted by heat and aromas. Some people attract mosquitoes because of the way they smell or because of a slightly higher body temperature. So, stay cool and scents-less!

HELP CONTROL MOSQUITOS PREVENT STANDING WATER





Common Backyard Mosquito Sources



Here is a simple way to remember how to “Fight the Bite” using the 4 D’s of mosquito safety:

1. **DRAIN** standing water on your property so mosquitoes won’t breed
2. Use insect repellent that contains **DEET** on your clothes
3. Stay indoors at **DUSK** and **DAWN** when mosquitoes are most prevalent
4. **DRESS** in long sleeves and pants and spray insect repellent on your clothes

