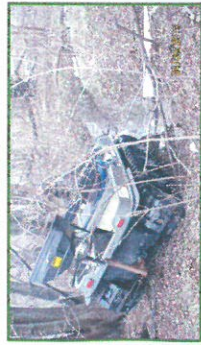
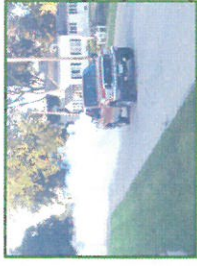
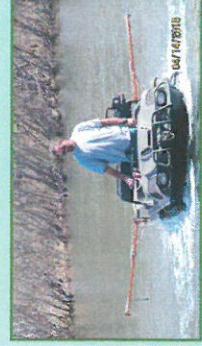


The best solution for any situation.

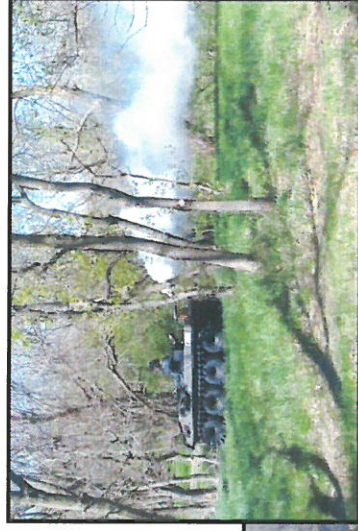


Mosquitoes will come...



**BUT THEY CAN NOT HIDE!!**

# MOSQUITO CONTROL OF IOWA



**402 Broad St.  
Rolfe IA 50581  
Phone: 712-848-3295  
Fax: 712-848-3295**

[www.mosquitocontrolofowa.net](http://www.mosquitocontrolofowa.net)

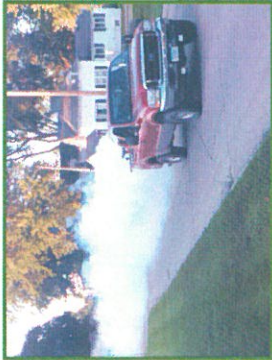
[mosquito@iowatelecom.net](mailto:mosquito@iowatelecom.net)



We at Mosquito Control of Iowa has over 50 years of experience of spraying cities for mosquitoes with over 95% renewal of contracts.

We originated and continue to improve the “ENHANCED FULL PROGRAM” which excides the IPM (Integrated Pest Management) concept of surveying, monitoring, identification, larviciding, adult-ciding, and barrier.

We are licensed and certified by the state of Iowa and Minnesota. We are also certified by the state of Florida in droplet analysis and sprayer calibration.



## About the Chemicals

The chemical we use for adultciding, larviciding and barrier control are the safest used in mosquito control. Labels, MSDS and EXTOLNET information is available on our website for city and residents use.

## In House Lab

### Specie Identification

We do species identification to determine the type of mosquito that we are dealing with, (over 50 different species just in Iowa) allowing us to know whether they are disease carrying or nuisance mosquitoes and enabling us to determine the best course of action to take.



← Aedes Vixen  
Culex Pipiens →  
The two main species of mos-  
quitoes we deal with in the  
mid west.



## Aerial Adultciding

Mosquito control of Iowa has aerial mos-  
quito spraying. This is an option that we  
have available to use in the event of a emer-  
gency at Mosquito Control of Iowa discre-  
tion. Do to advancements in ground equip-  
ment that we have designed the aircraft is  
much less effect then the ground units.



### A “ MOSQUITO CONTROL PROGRAM” needs –

#### A. SURVEY OF MOSQUITO HABITATS

1. Swamp lands and Permanent water sources
2. Catch basins and Drainage areas
3. Road ditches and Railroad tracks
4. Dumps, tires, etc.

#### B. MAPPING OF PROBLEM AREAS

1. To know where adults will be laying their eggs for doing larviciding
2. Adult habitat to control while resting

#### C. SURVEY OF MOSQUITO POPULATIONS

1. Mosquito larva
  - A. Dip collections (any large body of water, puddles, ponds, etc.)
  - B. Aspirator collections (tree holes, cans, tires, etc.)
2. Adult mosquitoes
  - A. Light traps and CDC traps (best method for all species)
  - B. Bite collections (best method for determining specific human pest)
  - C. Resting site collections (daytime, best method for CULEX vectors)
  - D. Sweep collections (least desirable method)

#### D. MOSQUITO IDENTIFICATION (43 species in Iowa)

1. Nuisance pest
2. Disease carriers (emergency situation)
3. Non-offensive species

#### E. MONITORING AND CHARTING

1. Weather (moisture and temperature)
2. Seasonal mosquito population
3. Results of control program

#### F. LARVICIDING (using data from survey and monitoring)

1. Aerial
2. Mist blowers
3. Hydraulic sprayers
4. Granule spreaders

#### G. ADULT CONTROL

1. Contact control
  - A. ULV
  - B. TUG
  - C. Mist Blower
  - D. Aerial
  - E. Storm sewer fogger
2. Barrier and Perimeter control
  - A. ORLAS
  - B. P3 High pressure sprayer
  - C. Mist Blower
  - D. LPG
  - E. Aerial
  - F. P26



## Ground Adulticiding

Adulticiding is controlling the adult mosquitoes while they are active this is usually done at night. We are using Mosquito Control of Iowa designed TUG® (Thermal ULV Generator) unit (1.5 micron droplet size) and can stay in the air for much longer periods of time. The

TUG® units have become the primary ground fogging equipment that we use in the cities. TUG® sprayers for several years and have determined that we achieve much better results than the ULV's. We have the TUG® units mounted on both truck and XUV's.



TUG

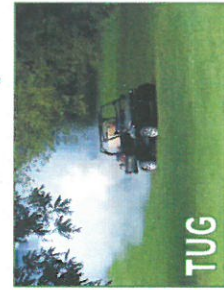


ULV

### TUG vs ULV

Both units are putting out the same amount of chemical in same weather condition. To demonstrate the difference in droplet counts.

The ULVs break the chemical down in to small droplets of 15 microns (a human hair is 100 microns in diameter) allowing the chemical to be carried by the air currents to reach the target area. The ULV sprayers are the units approved by the world health organization and used by most other companies. All our trucks are equipped with ulvs even



TUG



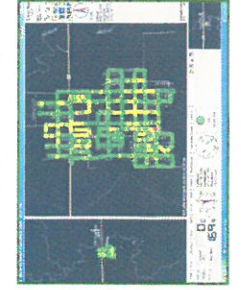
TUG

though use of them is very limited because they are not near as effective as TUG units

Mosquito Control of Iowa has several trucks

and XUV mounted units. Giving us the ability to use several units in a city to cover large areas in the most effective control times.

All of our units are GPS equipped. By using this, we can get an overhead view of the town map, pre-plan our routes, change routes on the move to maintain a better handle on our location and speed to provide



much better coverage of the city as we spray. GPS logs are saved for record keeping.



TUG

## In House Lab

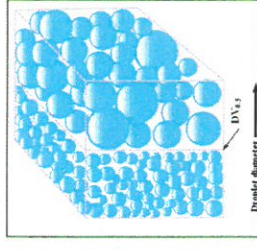
### Droplet Analysis

We have our own in house lab and trained technicians for doing droplet analysis and species identification.

The reason for doing the droplet analysis is to make sure that the sprayer is set to create the proper size droplets, to comply with EPA label regulations (a joke do to label requirements are no where near good control size). The droplets that are to large will not remain suspended rendering them less effective. Many mosquito control programs have failed over the years do to the sprayers not being calibrated correct. We do droplet testing on our equipment any time there is work done on the sprayer or random checks to make sure it is maintaining the optimal droplet size. Our standards are much higher then is required by law or most other company / city standards to make sure we have the optimal droplet size to maximize the control.

Knowing the droplet size helps us understand expected behavior of the droplet when travelling to the target through space encountering various atmospheric conditions, when encountering various hurdles such as plants and buildings and upon approaching the intended target.

At the same application rate, reducing the droplet size by half will increase the number of droplets by a factor of 8. Due



to their higher number density, small droplets have much higher probability of coming in contact with the target. (going from 15 micron to 1.5 micron increases droplet count from 100,000 to 1 million droplets per square inch) as droplet count increases the droplet will stay in kill zone much longer and the increase number of drops increase the odds of

contacting a mosquito increases. For more information on droplet and all the factors that enter into the sizing please visit the DOD website for a simple explanation at <http://www.afpmb.org/content/dod-equipment-helpdesk-faq#whydropletsizesimp>



TUG



## Monitoring and Surveying

In a mosquito control program we monitor to determine what type of mosquitoes we are trying to control. This can be done by light traps and bite counts allowing us to analyze the mosquitoes.



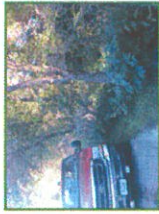
Surveying includes aerial by drone survey and traveling the city and surrounding areas to find locations that water will stand for 7-10 days where mosquito larva might be present.



When we find locations where water can stand for longer periods of time we can go back and dip them to see if larva is present and larvacide the location.

## Larviciding

Larviciding is putting a substance in the water to kill or stop the growth of the young mosquitoes. Control can some times be achieved just by removing the standing water such as in tires or old containers.



## Barrier and Perimeter control

We have specifically designed equipment to apply a barrier strip of chemical around the perimeter of the mosquito habitat. The mosquito will either die when coming into contact with the barrier or refrain from crossing into the protected area depending on the application method. By doing this we are able to get control in this areas for up to 6 weeks depending on the weather and the type of chemical used.

The ORLAS ( Off Road Large Area Spray) is used in parks, baseball fields, ditches, and other places where they rest. This lays down a chemical strip 50 feet wide setting up a barrier.



Buffalo turbine uses an air blast to spray chemical deep in to foliage to provide a long lasting barrier. It produces 10,000 CFM of air travelling at 180 mph.



Applying the substance can be done in many ways. We use Argos, atvs, airplanes, back packs, hand held electric sprayers, and Buffalo Turbines, depending on the size and location of the water



Our trucks are equipped with larvacide units so we can treat standing water while we are doing standard adulting.

## Storm Sewer Treatment

Some species of mosquitoes rest and lay eggs in the storm sewers [culex pipens (disease carrying)]. This unit enables us to spray into the drains and moves the fog for several blocks in each direction making it possible for us to treat large areas of the system. Allowing us to focus on and eliminate large number of mosquitoes in this habitat.



The CWR (City Wide Residual) was developed to lay down residual in habitat areas through out the city. Using a high pressure system to penetrate and cover the vegetation. Due to the weather conditions in 2014 we have added new equipment and expanded the usage of the CWR systems.

