

**the  
Fine Art of**



**Trapping  
Mosquitoes**

# The Fine Art of Trapping Mosquitoes

***“If you know the enemy and know yourself, you need not fear the result of a hundred battles.” Sun Tsu, “The Art of War”.***

## Know your enemy

In the movie “*Jurassic Park*,” scientist were able to clone dinosaurs by extracting their DNA from mosquitoes that had bitten them while they were alive 200 million years ago. That’s a long time ... long enough for these nasty little pests to learn all they’d need to know about finding an animal, or a man, from which to get some blood to fertilize their eggs in spite of everything we might do to prevent it. In doing that mosquitoes have also acquired the unfortunate distinction of being called the most dangerous creatures on earth because of the diseases they spread with their bites.

Even today, entomologists who study mosquitoes continue to be amazed at how seemingly clever these tiny pests are at avoiding many of the simple traps we set out to catch them. There are several hundred species of mosquitoes in the United States alone, and each of these has its own specialized ecological niche. Most species seek out mammals, while others feed mostly on birds. The mosquito most closely identified with the West Nile virus, *Culex pipiens*, is such an “avian” feeder, which explains why dead crows are early warning signs of this disease.

Another species specific attribute is where and when they attack. Some species hide from the sun in bushes and shrubbery during the day, and emerge in the evening to seek out a blood meal, while others are active in the hours before dawn. Still others, such as the notorious tiger mosquito, *Aedes Albopictus*, are active both day and night. There are so many variations in the behaviors of these different species, in the things that attract and repel them, that many books have been ... and will continue to be ... written by scientists who want to understand them in order to outwit them.

All of this means that, unless you’re a trained entomologist and can recognize the species that are

active in your backyard, it’s going to be very difficult to know exactly what kind of mosquito pest you’re going to be dealing with. However, there are some behaviors that are common to most mosquitoes, and by knowing these you’ll be able to position your trap to the best advantage.

## Know your weapon

Your mosquito trap works by using the two best known mosquito attractants: carbon dioxide and octenol, but even these two may not work equally well on **all** mosquito species. Although the amount of CO<sub>2</sub> your trap generates is about that which a person produces in normal breathing, humans and animals also have many other attractants, such as sweat, movement, shape and infrared radiation, all of which makes **you** more attractive than any trap we could create. The major advantage your trap has is that it mimics human respiration, odor and body heat sufficiently to attract mosquitoes to the unit so that its fan can suck them in when they fly close enough. The trick to catching mosquitoes is to maximize this advantage by carefully selecting the best place to locate your trap.

Of all of the known attractants, CO<sub>2</sub> and octenol are the most generally recognized and most widely used by professional entomologists to trap mosquitoes. However, many researchers believe that mosquitoes use CO<sub>2</sub> only to find the general area where a warm-blooded host may be found, and other attractants, or “cues”, to zero in for the final bite. Many substances have been tested as “*terminal attractants*”, and a few have shown some promise, including ammonia, beef bouillon, cholesterol and even Limburger cheese! Surprisingly, even DEET is a good mosquito attractant ... it works not by keeping them away, but by preventing them from landing on your skin. If you’re wearing DEET at a barbecue, and the person standing next to you isn’t, guess what!

One prominent researcher claims to have very good luck putting sweaty socks on his traps. Sweat has been known as a good attractant for many years, and the principal active ingredients of sweat are ammonia and lactic acid. However, no one has yet produced an effective artificial sweat that will attract mosquitoes.

If you wish to try your own hand at coming up with additional attractants to use with your trap, remem-

ber two things: first, not all attractants work with all species. In fact some even repel. Secondly, use only tiny amounts since mosquitoes are exquisitely sensitive to odors. The rule here is that if a little is good, more is probably bad.

## Know your battlefield

Trap placement is critical for successful performance! The two important things to consider in placing your trap in your backyard (battlefield) are **source** and **cover**.

**Source** is the place mosquitoes are coming from. This could be a woody or marshy place on or off your property where mosquitoes can breed. It could be a quarter or half mile away; mosquitoes can easily fly that far to find a promising neighborhood.

**Cover** are the places mosquitoes will hide during the day away from the heat of the sun, and near flowering plants that provide nectar to nourish them. Dense foliage has another advantage in that it keeps the air still, so any CO<sub>2</sub> has a chance to accumulate and draw more mosquitoes.

## Rule #1

**The first rule** in placing your trap is to put it where the mosquitoes are. This means putting it as close to the cover as you can without having it completely enveloped by foliage. A small clearing in a woody or brush area at some distance from your house or patio and sheltered from the wind would be ideal. Under no circumstances should you place it in the middle of the lawn or beside your patio ... unless you’re awfully lucky, you probably won’t catch a thing.

## Rule #2

**The second rule** is to position it where the CO<sub>2</sub> can flow towards the **source**. When searching for a blood meal, mosquitoes fly upwind following a plume of CO<sub>2</sub>, therefore, your trap should be upwind of the breeding site.

The ideal spot for your trap would be one that accommodates both of the above. However, in most yards, finding the best place will not be an obvious choice. If you have to choose between source and cover, try cover first.

## Experiment with trap location until you get the best results.

To test an area to see if it would be a good spot for your trap, stand there for a short time and observe how many mosquitoes are attracted to you. Remember, **you** are going to be more attractive than the trap to any hungry mosquito, so if you managed to draw only a couple of mosquitoes in that time, don't expect your trap to draw hundreds. On the other hand if you see a dozen or more, it's probably a very good spot. If you'd rather not serve as live bait for this test, perhaps you can find a neighbor or relative who owes you a favor!

Finally, the height of the trap above the ground can be very important. Some mosquitoes rest in grass during the day, so they would be more easily attracted to a low trap. Also, the effect of wind is less close to the ground, reducing the dilution of the CO<sub>2</sub> plume making it easier for the mosquitoes to follow it. The optimum height for your trap should be between 30 and 40 inches to the top of the unit.

## Be Patient!

After you have placed your trap, check it every day if you wish, but give it some time to work. Mosquitoes tend to breed in cycles, and it may take a week or two to hit the time frame when a group emerges from its breeding area and looks for some shelter and a blood meal.

Also, try to observe the kind of mosquitoes in your yard. If they are species that fly mainly in the evening or morning, set the timer on the trap accordingly. If they are day flying mosquitoes you may want to put it on continuously. Remember that the species mix can change as the summer goes on, or if the weather becomes unusually hot or cold, wet or dry.

## In Summary:

### Bad places for your mosquito trap:

- In an open or sunny spot.
- In a windy location.
- Where it will have to compete with other sources; such as people or animals.

### Good places for your mosquito trap:

- In a woody or brush area sheltered from the wind.
- Near flowers or other nectar sources.
- Away from other sources of CO<sub>2</sub>.
- Near mosquito breeding areas.

The illustration below pictures areas which are appropriate for trap placement and areas which are not. Remember, your trap is site specific and placement is critical for successful results. Experiment with trap location until you get the best results.

