



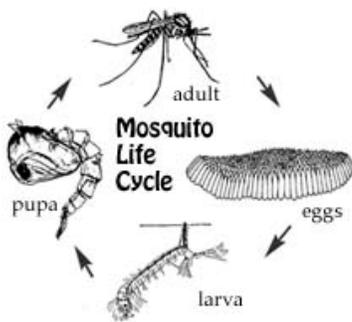
MOSQUITOES



Mosquitoes are a problem to humans because they are annoying and they may carry disease. Here are some facts about mosquitoes.

MOSQUITO BIOLOGY

Mosquitoes are insects that are close relatives of houseflies. There are four stages of growth in the mosquito life cycle- egg, larva, pupa, and adult.



The eggs of some types of mosquitoes are laid on water and hatch in one or two days. Eggs of other types of mosquitoes are laid in places that are dry but will fill with water. These eggs may survive several months before hatching.



MOSQUITO EGG

Larvae hatch from the eggs and live, feed, and grow in the water.



Fully grown larvae change into the pupae. During the pupal stage, feeding stops and changes occur that lead to the adult stage.



Adults emerge from the pupae, leave the water and take to the air.



The cycle from egg to adult mosquito may take as little as a week. Soon after becoming adults, male and female mosquitoes mate. Only the female mosquito takes a blood meal – this is required to produce her eggs. Each type of mosquito may prefer blood from a different kind of animal – birds, frogs, deer, and humans. There are more than 50 types of mosquitoes in North Carolina. Many of these are not a problem because they do not attack humans.

Adult mosquitoes may live about 2-3 weeks, but during this time the female can take several blood meals and lay hundreds of eggs.

MOSQUITOES AND DISEASE

Mosquitoes are carriers (or vectors) of many diseases around the world. Malaria, yellow fever, dengue fever, and filariasis are some of the most common. While these diseases occur overseas, mosquitoes in North Carolina do not currently spread them. Malaria was once found throughout the southern United States but has been stopped in this country as a result of mosquito control, medical treatment, and improved living conditions. Occasionally, cases of mosquito-borne encephalitis occur in humans in North Carolina. Dog heartworm is a common disease carried by mosquitoes.

MOSQUITO CONTROL

Mosquitoes breed in all kinds of water, from small containers such as treeholes and tin cans to large bodies of water like lakes or marshes. Mosquito breeding water may be salty or fresh, polluted or clean, standing or slow moving.

All these breeding places create a variety of mosquito problems. Mosquito can be controlled either as adults or larvae.

Introduction

Mosquito bites not only cause reddening, swelling and itching at the affected location, it may also transmit disease: like Malaria, Japanese Encephalitis, and Dengue Fever.

Change water for flowers and plants (at least once a week) and leave no water in plates or trays underneath flower pots.

Keys to Mosquito Prevention at Home

- Cover tightly all water containers, wells and water storage tanks.
- Dispose of refuse, like lunch boxes and soft drink cans where water accumulates, properly.
- Keep all drains free from choke.
- Tap up all defective ground surfaces to prevent accumulation of stagnant water.

Adult mosquitoes can fly from the breeding site and become difficult to find. Controlling mosquitoes after they become adults requires expensive and complicated equipment. This equipment is usually run by a city or county. These machines create a very fine mist of insecticide that kills adult mosquitoes flying into it. Wherever possible, it is best

to use larval mosquito control. This prevents adult mosquito problems before they get started. There are many ways to perform larval control. They may include eliminating or changing the breeding sites, using insecticides, or introducing predators such as fish. Many times the mosquitoes that are a problem to homeowners result from breeding sites in their own backyards!

Water-holding containers such as treeholes, tires, tin cans, uncovered boats, leaf clogged rain gutters, and planters may breed mosquitoes.



Emptying the water from these places can be a quick and effective way to control mosquito problems around the house.



For more information click on the website below:

<http://www.mosquito.org/>

Trivial facts about a non-trivial insect

Q: How many species of mosquitoes are there?

A: About 2700.

Q: And how many are resistant to at least one insecticide?

A: More than 50.

Q: What does a mosquito weigh?

A: About 2 to 2.5 milligrams (for an *Aedes aegypti*).

Q: How much **blood** does a female mosquito drink per, er, **serving**?

A: About 5-millionths of a liter (for an *Aedes aegypti*).

Q: What happens if you cut the sensory nerve in the mosquito's stomach?

A: The little whiner can keep sucking blood until it bursts (oh, sweet justice!).

Q: How do mosquitoes find new hosts?

A: By sight (they observe movement); by detecting infra-red radiation emitted by warm bodies; and by chemical signals (mosquitoes are attracted to carbon dioxide and lactic acid, among other chemicals).

Q: How fast can a mosquito fly?

A: An estimated 1 to 1.5 miles per hour.

Q: How far do certain mosquitoes fly

A: Salt marsh mosquitoes migrate 75 to 100 miles.

Q: How far away can a mosquito smell you, or a cow or another host?

A: 20 to 35 meters.

Q: Don't you love being called a "host"?

A: Not in this context.

Q: Why does a film of oil on water kill mosquito larvae?

A: Because the oil clogs up the snorkel that the larvae use to breathe.



Q: What does mosquito saliva have to do with some kinds of rat poison?

A: They both contain anti-coagulants, chemicals that prevent the blood from clotting.

Q: When do mosquitoes feed?

A: Day-time. Night-time. And all times in-between. Truthfully, some species prefer different times of day or night. This behavior may have evolved to match the host's behavior.

Q: Do they ever stop sucking blood?

A: Yes. For starters, males never suck blood. And females don't do it more often than necessary, since it exposes them to (slap, slap) host "defensive behaviors."

Q: So what's the advantage of letting a mosquito drink its fill?

A: Because if you brush it away too soon, it might come back for more.

Home Yard and Garden Checklist

-  Dispose of all water holding containers, such as, plastic jugs, empty barrels, tin cans, buckets, bottles, etc.
-   Dispose of old tires. Old tires have become the most important mosquito producer in this country.
-  Turn over canoes and small boats or cover them with a tarp. If covering with a tarp, make sure the tarp doesn't sag down and collect water on top of the tarp.
-  Cover trash containers or drill holes in the bottom of recycle containers to keep rain water out.
-  Empty wading pools weekly or store inside when not in use.
-  Change water in birdbaths weekly.
-  Keep drains and ditches clean so water will drain properly.
-  Fill in any ruts or low spots that collect and hold water. Mosquitoes are capable of developing in any puddle that lasts more than 4 days.
-  If storing wheelbarrow outside, store upside down or cover with tarp.
-  Keep grass cut short and shrubbery trimmed so adult mosquitoes don't hide in the shaded areas during the day.
-  Fill in hollow stumps that hold water with sand or concrete.
-  Inspect eave troughs to assure water is draining properly.
-  Aerate ornamental pools or stock them with fish. Water gardens may become major mosquito producers if allowed to stagnate.

Mosquito Facts

- All mosquitoes need water to complete their life cycle. It usually takes about 10-14 days for mosquitoes to complete their life cycle in the Grand Forks, ND area.
- Mosquitoes do not develop in grass or shrubbery. These areas are simply resting and shelter areas. Although floodwater mosquitoes may lay their eggs in grassy areas, they will not hatch out of the egg until they are joined with water. Mosquitoes generally take cover in shaded areas during hot sunny days to avoid the heat.
- Mosquitoes can fly considerable distance; some species remain close to their larval habitat, while other will fly 10 - 20 miles or more in search of food.
- Only female mosquitoes bite. Female mosquitoes draw blood for the needed protein enrichment required to lay eggs. Only after receiving a blood meal is a female mosquito capable of laying eggs. Male mosquitoes feed on nectar from plants.
- A female mosquito can lay up to 200 eggs at a time and these eggs can survive for several years before becoming emerged with water and hatching into the larvae stage. Some species of mosquitoes lay their eggs directly on the water's surface; others leave their eggs in an area that will flood at a later date.
- Not all species of mosquitoes bite humans; some prefer birds, others horses, and some will bite frogs or turtles.
- Mosquitoes are responsible for more human death than any other living creature. In the United States mosquitoes are mostly a nuisance, however worldwide mosquitoes transmit disease to more than 700,000,000 people annually and will be responsible for the death of 1 of every 17 people currently alive *. The World Health Organization reports malaria causes as many as 3,000,000 deaths annually.
- There are approximately 170 species of mosquitoes in North America and as least 43 species of mosquitoes are known to occur in North Dakota.
- Each year thousands of dogs become disabled or die from lung, heart or circulatory problems caused by the heartworm disease. Mosquitoes can transmit this disease. This disease is also preventable with the proper prescription available from Veterinary clinics. Check with your veterinarian about heartworm testing and preventive medicine for your dog.
- Mosquitoes cannot transmit AIDS.

Mosquito Myths

- You can repel mosquitoes with electric devices that emit high-frequency sounds.

FALSE - Scientific studies have repeatedly NOT shown that electronic mosquito repellents prevent mosquitoes from biting. In most cases, the claims made by distributors border on fraud.

- Electrocuting devices help reduce mosquitoes around the house.

FALSE - Bug zappers kill a lot of insects, but very few of these insects are considered pests. In fact, many of the insects killed are beneficial insects that would otherwise serve as food for wildlife. Comparison trapping have shown no significant difference in mosquito populations in yards with and without traps.

- Citrosa plants will repel mosquitoes.

FALSE - The Citrosa plant alone will not repel mosquitoes. The Citrosa plant is a household plant that produces citronella oil, which is known to have mosquito-repelling properties. Although the concept of the plant emitting such a barrier appears sound, the claims have not stood up to scientific testing. Tests conducted in Florida indicate that Citrosa plants did not reduce the number of bites received by test subjects. In fact, mosquitoes were found to land on the plant, indicating that the plants did not emit enough citronella oil to repel the mosquito.

- Bats will eat thousands of mosquitoes each night and therefore help control mosquito populations.

FALSE - Research has shown that insectivorous bats are selective feeders and mosquitoes make up a very small percent of their diet. They will typically feed on the larger insects. Bats diet will typically consist of the same type of insects that turn up in bug zappers. Bats can also harbor and transmit rabies. Bats are not an adequate means in controlling the population of mosquitoes.

- Purple Martins will eat thousands of mosquitoes each night and therefore help control mosquito populations.

FALSE - Purple Martins will eat mosquitoes, but they are selective eaters and will select the larger insect over the mosquito. Tests have shown 1% - 3% of the Purple Martin diet consists of mosquitoes.