

All about biting insects

# Fun Bites

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mosquitoes

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Places you might find Asian tiger  
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## WHAT DO MOSQUITO CONTROL WORKERS DO?

The magazine for those not afraid of  
mosquitoes, bed bugs, lice, and fleas

Spring 2014

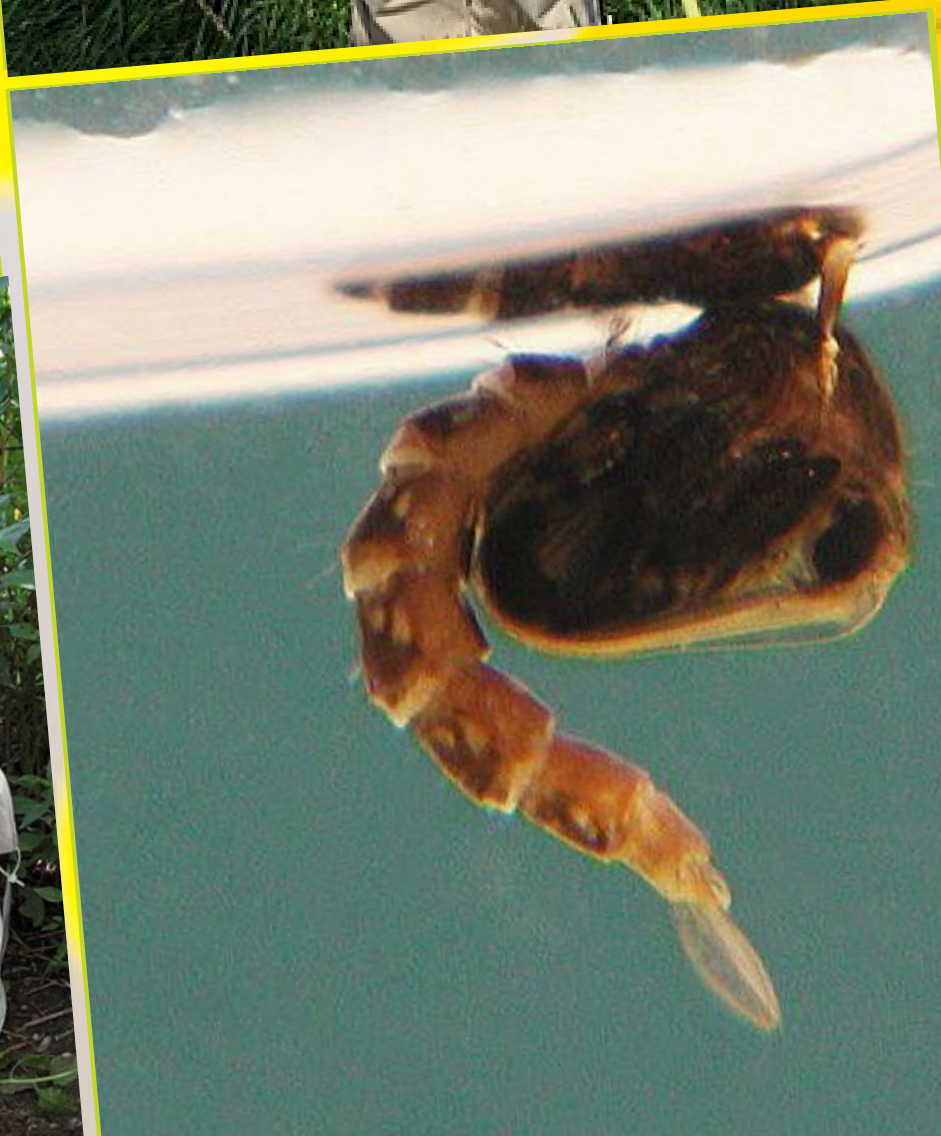


PHOTO CREDIT

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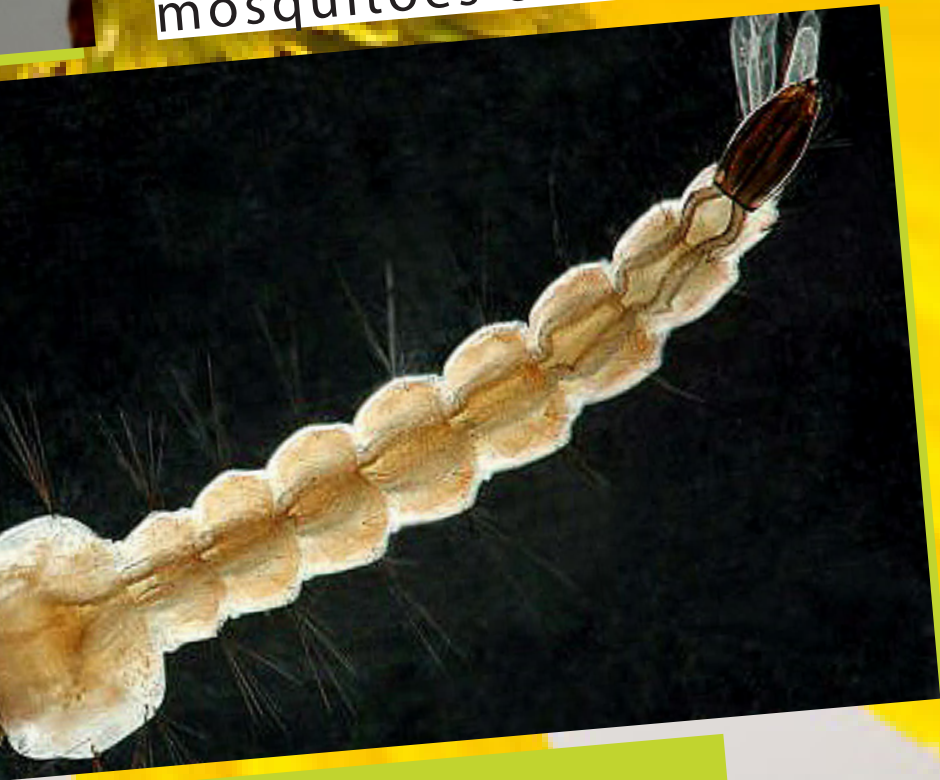
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# Learning about Mosquitoes

In Louisiana, we have mosquitoes that are capable of transmitting Dengue fever virus. However, not all mosquitoes can transmit viruses to humans.



IN LOUISIANA, WE HAVE OVER 20 MOSQUITO CONTROL AGENCIES, NUMEROUS PUBLIC HEALTH DEPARTMENTS, AND SEVERAL STATE AGENCIES THAT ARE ALL WORKING TO PREVENT MOSQUITO-TRANSMITTED DISEASES IN THE STATE. EVERY WEEK, MOSQUITO BIOLOGISTS COLLECT MOSQUITOES AND TEST THEM FOR DISEASE CAUSING PATHOGENS, SUCH AS WEST NILE VIRUS. THESE AGENCIES ARE ALSO IN CHARGE OF MAKING IMPORTANT DECISIONS ABOUT MOSQUITO CONTROL, IN ORDER TO PROTECT THE RESIDENTS OF LOUISIANA AGAINST THESE MOSQUITO-TRANSMITTED DISEASES.

## CREDITS:

Photo by Ary Farajollahi

3: Photos by James Gathany (CDC), and Farajollahi

4&5: Photos by James Gathany (CDC), and Farajollahi

6&7: Photos by James Gathany, and Florida Medical Entomology Lab

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10 to 12: Photos by James Gathany

# A

nother concern on the rise in the United States is Dengue fever virus. This virus, which is also transmitted by mosquitoes, can cause so much pain, that it feels like your bones are breaking. Every year, it is normal to see an occasional imported case of Dengue. In 2009, Key West began to see locally acquired cases of Dengue virus. With almost 100 cases so far in Key West, the disease has affected less than 1% of the population on the island. There is no doubt that the situation would be a lot worse if Key West did not have an excellent mosquito control agency. It also helps when residents help out by reducing standing water in backyards, since this is where Dengue mosquitoes lay eggs. Dengue outbreaks have also occurred recently in Hawaii.



## WHAT IS BIOLOGICAL CONTROL?

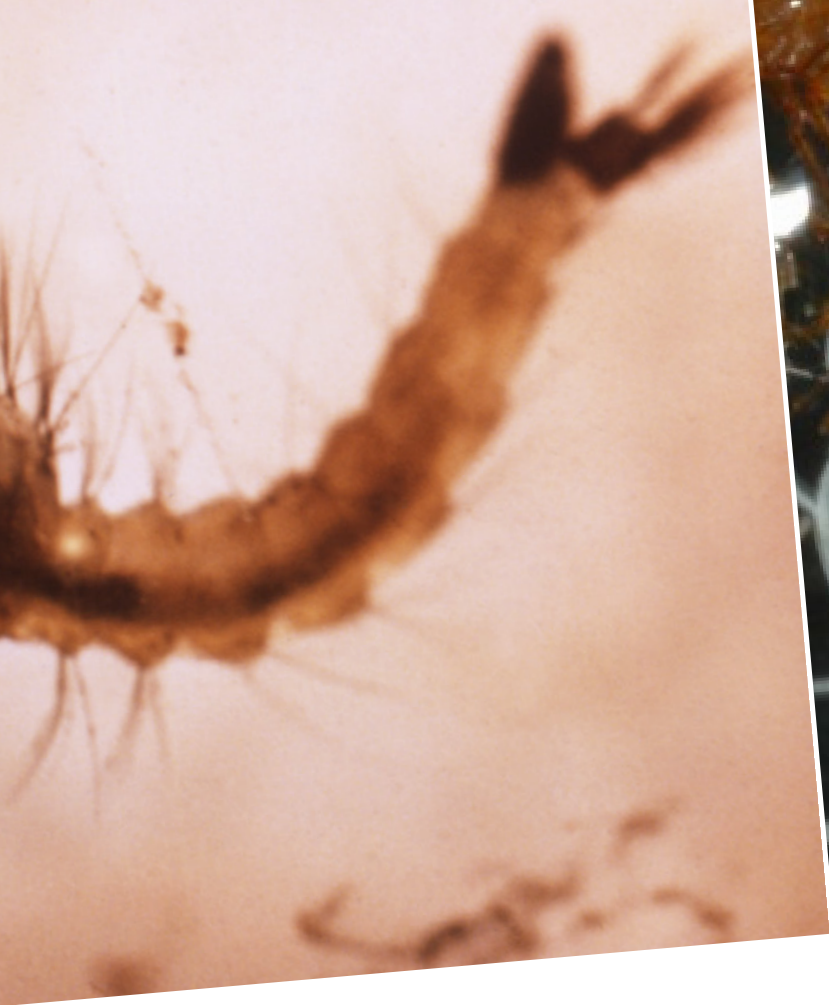
Biological control is when pests, such as mosquitoes, are killed by parasites, pathogens, or predators. There are multiple organisms used in the biological control of mosquitoes. Many of these are used to target the mosquito larvae, since the mosquito larvae live in water and are easier to find. Types of biological control include worms that live inside mosquito larvae (parasites), fish (predators), and bacteria that only kills mosquitoes (pathogens).

An advantage of biological control, is that pests are attacked by their natural enemies. What most people don't know is that most mosquito control organizations use a bacteria called *Bacillus thuringiensis israeliensis* (BTI for short) as a form of biological control to reduce mosquitoes. This bacteria is so specific, it only kills black flies and mosquito larvae. Mosquito biologists are also continually looking for new natural enemies that can be used to reduce mosquitoes.



# F MOSQUITOES

MOSQUITO ISSUE FUN BITES MAGAZINE



A mosquito fish (scientific name: *Gambusia affinis*) is a type of fish that loves to eat mosquitoes. In towns along the Gulf of Mexico, where they are native, these fish readily feed on mosquito larvae and pupae.

Because they are great at eating mosquito larvae, many mosquito control organizations will add these mosquito fish to abandoned swimming pools and other large containers.



# Top 10 ways to protect your family from mosquito bites

You can protect yourself, your family, and your pets, by following these 10 simple steps.

**01**

**WEAR LONG SLEEVE SHIRTS AND LONG PANTS THAT ARE LIGHTLY COLORED.** Mosquitoes are often

attracted to dark colors, heat, and body odors. By simply wearing lightly colored clothing, you can become less attractive to mosquitoes.

**02**

**CHECK YOUR YARD WEEKLY FOR STANDING WATER.** It can take

5 to 7 days for a mosquito to develop into a biting adult. If you check your yard weekly for standing water, you might be able to locate mosquito larval habitats (areas where the immature mosquitoes live)

**03**

**ASK YOUR PARENTS OR GUARDIANS ABOUT MOSQUITO REPELLENTS.** Select an EPA registered

product, and always follow instructions on the label.

**04**

**ASK YOUR VET HOW TO PROTECT YOUR PETS FROM HEARTWORM.**

Our pets need to be protected from mosquitoes as well. Our pets can only get heartworm from mosquitoes. It is important to protect them from heartworm if they will spend any amount of time outdoors.

## 05 THROW AWAY TRASH AND RECYCLE YOUR CANS AND BOTTLES.

A container as small as a can or bottle can produce tens of thousands of mosquitoes over the course of a summer. Make sure you properly discard and recycle all containers in your backyard.

## 06 AVOID OUTDOOR ACTIVITY WHEN MOSQUITOES ARE MOST ACTIVE.

Most mosquitoes are active as the sun sets in the evening and rises in the morning. However, the Asian tiger mosquito will bite during the day.

## 07 MAKE SURE WINDOW AND DOOR SCREENS DO NOT HAVE ANY HOLES IN THEM.

Many mosquitoes will fly inside a home in search of a blood meal. It is important to make sure that all screens on doors and windows are sealed tight with no holes in them.

## 08 BRING YOUR TOYS INSIDE SO THEY DO NOT COLLECT WATER.

Plastic toys can hold enough water to produce tens of thousands of mosquitoes over the course of a summer. Make sure you bring your toys inside, when you are not using them.

## 09 SUPPORT YOUR LOCAL MOSQUITO CONTROL.

Local mosquito control districts exist to protect the public from mosquitoes and mosquito borne diseases. These districts are continuously conducting surveillance for diseases, such as West Nile virus and Eastern Equine Encephalitis.

## 10 REMEMBER THE 7 DAY RULE.

Water plus seven days = mosquitoes. Do not let standing water sit for longer than 7 days, or you might risk having mosquitoes biting in your area.

## DID YOU KNOW?



### EVERY 30 SECONDS SOMEONE DIES FROM MALARIA

Malaria is one of the top 10 global killers on the planet. It is estimated that over 207 million people are currently infected with Malaria. In recent years, an estimated number of 600,000 people die from Malaria each year, those being primarily children.

### MALARIA ONCE EXISTED IN THE UNITED STATES

Prior to organized mosquito control in the United States, Malaria was once a frequently occurring disease, especially in the southern United States.

### MOSQUITO-BORNE DISEASES ARE STILL A THREAT

Since 2009, Florida (primarily in Key West) has reported over 100 cases of locally acquired Dengue virus. Dengue virus, which is often termed "breakbone fever" was once eliminated from the United States.



**ONE BUCKET** OF WATER IS LARGE ENOUGH TO PRODUCE OVER 700,000 MOSQUITOES OVER THE COURSE OF A SUMMER!

EVEN SOMETHING AS SMALL AS A POTATO CHIP BAG CAN HOLD ENOUGH WATER TO PRODUCE OVER 50,000 MOSQUITOES OVER A SUMMER!

CONCERNED ABOUT THAT UNCLEAN SWIMMING POOL? IT CAN PRODUCE OVER **15 MILLION MOSQUITOES** OVER THE COURSE OF A SUMMER! IF YOU ARE GETTING BITTEN BY MOSQUITOES, THE SOURCE OF THE PROBLEM MIGHT BE CLOSER THAN YOU THINK!



# Finding Tigers in my backyard

Many people think that Asian tiger mosquitoes are coming from swamps, but they are actually closer to home than you think!





All mosquitoes lay eggs in water. Their eggs hatch to become larvae, which also live in water. Different species of mosquitoes prefer different types of water. The Asian tiger mosquito loves to lay her eggs in backyard containers that fill with water. This includes buckets, tires, trashcans, bird baths, toys, and trash.

If people are getting bitten by small black and white mosquitoes in their backyard, then it usually means that there is a source of standing water nearby. And the source is usually closer than you think. A lot of people don't realize that gutters and downspouts can hold water if they

are not cleaned out, and sloping downward.

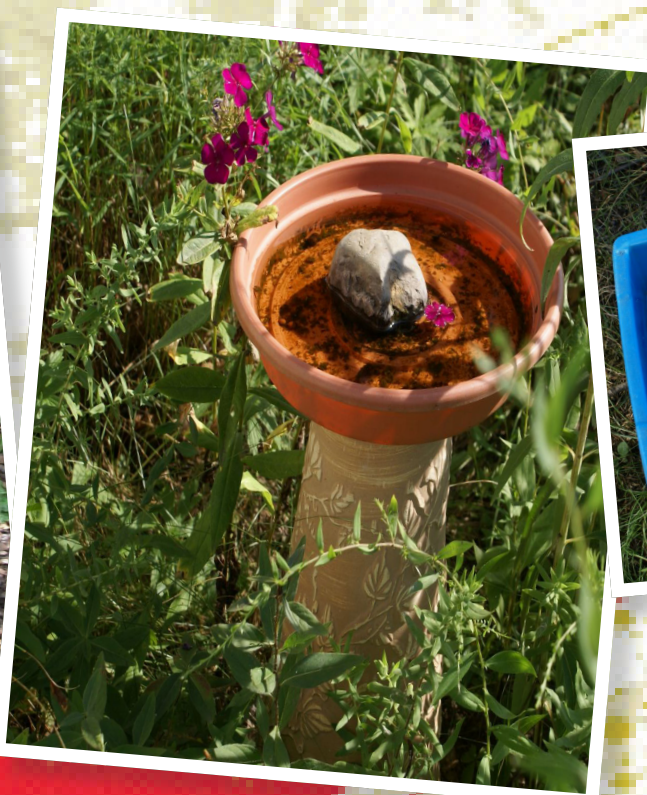
The most common sources of Asian tiger mosquitoes we found last year included (1) trashcans and recycle bins, (2) buckets, (3) the plates underneath planters, and (4) tires.

Most people don't think to check their trashcans and recycle bins for standing water. But it only takes one week for those mosquitoes to become adults. Unfortunately, most waste facilities only pick up recyclables every other week. That is more than enough time for mosquitoes to develop into adults. The best course of action is to keep trash

and recycle bins covered, and drill holes in the bottom to prevent the collection of water. And those bottles and cans in the recycle bin can collect water also! So don't forget to check containers weekly for standing water.

Anything that holds standing water for 7 days or more can produce mosquitoes.

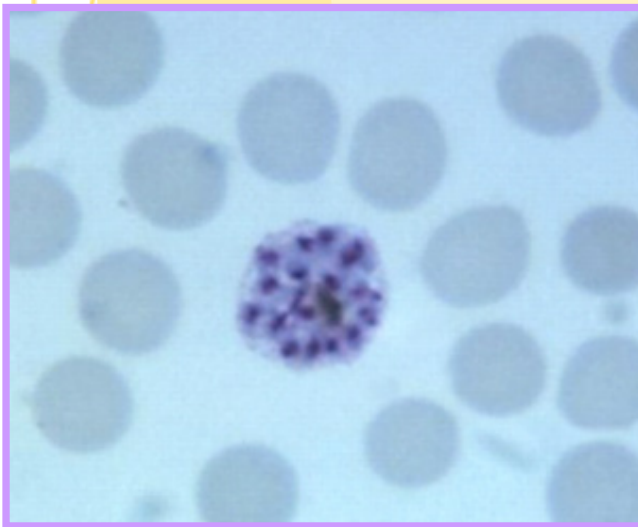
At the end of the day, the crew wants the public to know that they can also help reduce the Asian tiger mosquito by reducing standing water in their backyards. "If we can get the public to help out, we can reduce a lot more mosquitoes."



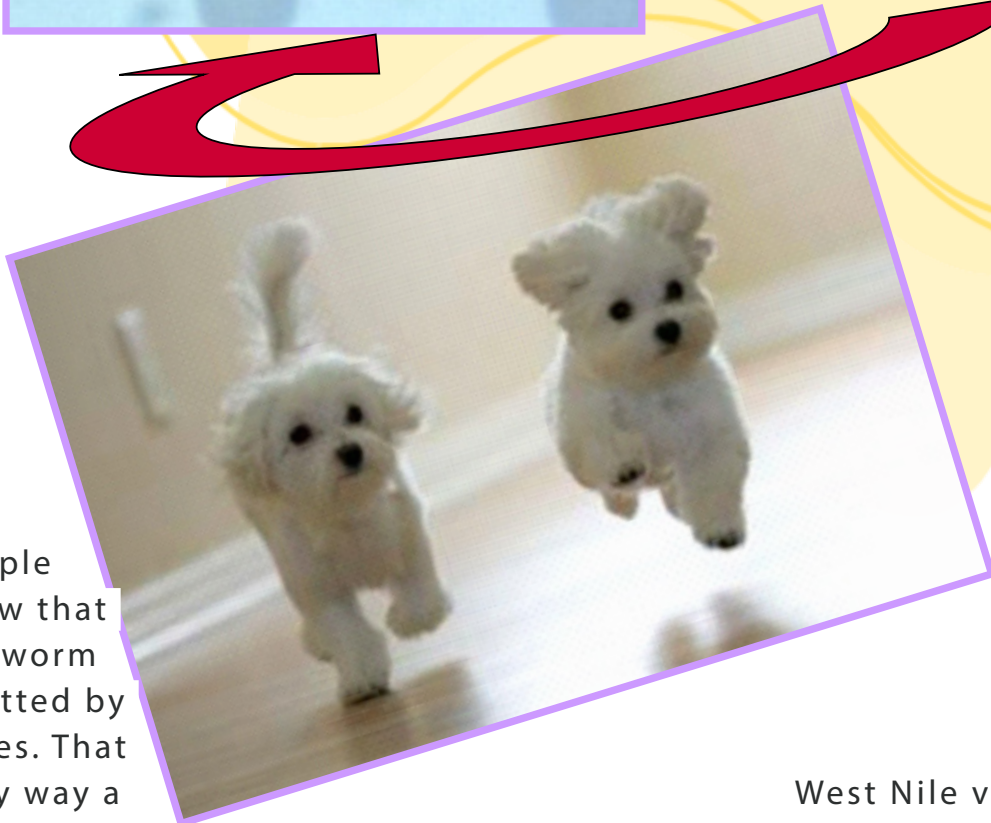
Thanks to mosquito control, several diseases, such as Malaria and Yellow fever were eradicated from the United States.

# MOSQUITOES and disease

West Nile virus was first found in the United States in 1999. Now it has been found in every state in the Continental US.



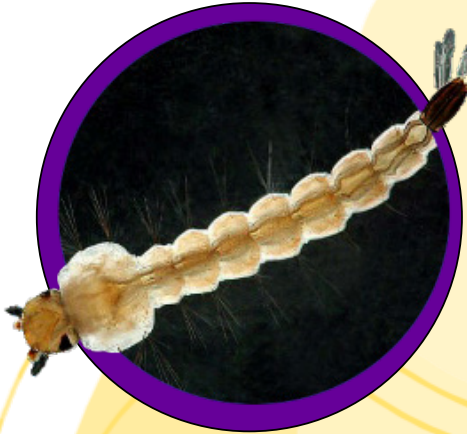
Every 30 seconds, someone dies from Malaria. Before mosquito control in the US, there used to be an average of 500 cases of Malaria per year in certain states in the US.



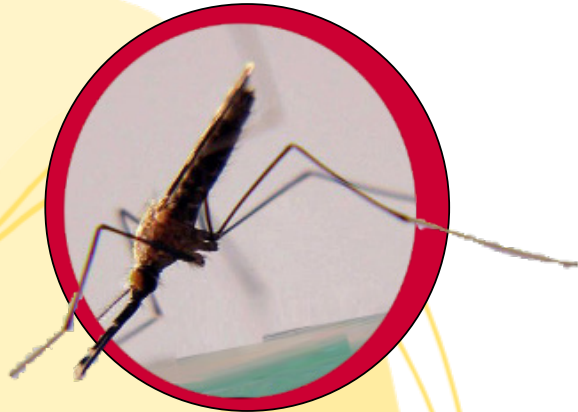
Many people don't know that dog heartworm is transmitted by mosquitoes. That is the only way a dog can become infected.

West Nile virus, Malaria, Dengue fever, and dog heartworm are all transmitted by mosquitoes

Depending on temperature, a mosquito can develop from egg to adult in as little as 4 to 7 days.

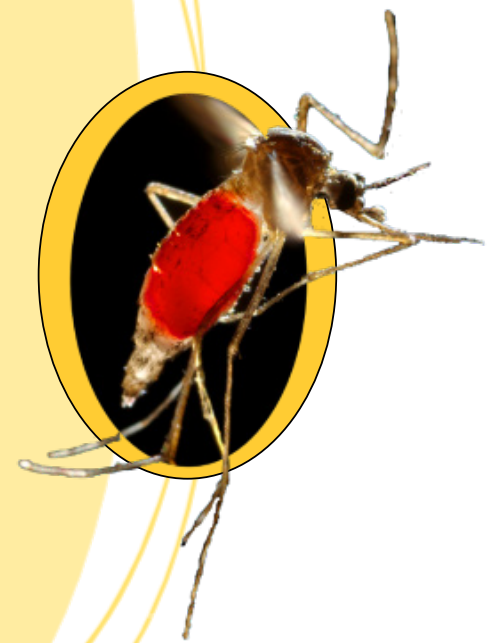


The animal responsible for the most human deaths worldwide is the mosquito



The average life span of a mosquito is 3 to 100 days. The male lives 10 to 20 days on average.

# Amazing Mosquito Facts



Most adult mosquitoes travel less than 1 mile away from their larval habitat



Female mosquitoes require blood meals for the development of their eggs.



One female mosquito may lay 100 to 300 eggs at a time and may average 1000 to 3000 offspring during her entire life span



The LSU logo, featuring the letters 'LSU' in a bold, purple, sans-serif font. The background of the entire page is a photograph of a baseball field with a pitcher's mound and a pitcher in a red uniform in the background.The LSU AgCenter Research & Extension logo. It features the letters 'LSU' in purple on a yellow background, with 'AgCenter' in white on a green background, and 'Research & Extension' in white on a purple background below it.

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TION ABOUT BITING  
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