

# *Aedes aegypti*



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

  
Central  
Appalachian  
Regional **ERC**

The *Aedes aegypti* mosquito—4 to 7 mm in length—is a dangerous mosquito which spreads the yellow fever, dengue, chikungunya, Zika, and Mayaro viruses. It is a dark mosquito recognized by white markings on its legs and a lyre-shape on the upper surface of its thorax. It is found in tropical, subtropical, and temperate regions throughout the world. Males feed on fruit and only the female bites for blood to mature her eggs, feeding on birds and mammalian hosts. She is attracted to hosts by carbon dioxide, lactic acid, and octenol excretion. Adults have a lifespan of two to four weeks; however, eggs are viable for over a year through winter and dry spells. They feed mostly at dusk and dawn in shady areas. **Prevention efforts include** reducing sources of standing water. Insect repellents (DEET) are effective in preventing bites and the mosquitos are susceptible to permethrin and DDT.

# *Aedes albopictus*



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

  
Central  
Appalachian  
Regional **ERC**

The *Aedes albopictus* mosquito, or Asian tiger mosquito, is native to tropical and subtropical forests in Southeast Asia, but has adapted to cooler, temperate regions and spread rapidly throughout the world. It is considered the world's most invasive species. It is a major pest as it feeds in the daytime as well as dusk and dawn on humans, mammals, and birds. It spreads yellow fever, dengue, chikungunya, Zika, and filarial nematodes. It is called the tiger mosquito for its striped appearance. A single white line from the eyes to the dorsal side of the thorax distinguishes it from other *Aedes* species. The female takes blood meals to mature her eggs. Small amounts of water suffice for larvae development and even running water can serve as breeding sites. It has a short flight range of less than 200 meters but is very difficult to control because of its adaptive capabilities.

# Bed Bugs

*Cimex lectularius*



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

  
Central  
Appalachian  
Regional **ERC**

**Bed bugs (1 to 7 mm in length) spread by crawling between locations or being carried on personal items such as clothing and shoes. They reside in dark, hidden places--mattress seams, furniture crevices, or cracks in floors and walls. They take blood meals at night usually on the arms, legs, feet, face, or neck. They bite by sawing through the skin injecting saliva containing anticoagulants. They are attracted to their hosts by carbon monoxide and warmth. They may live up to 70 days without feeding. Bed bugs are not known to spread disease but may cause itching leading to excessive scratching increasing the chance of a secondary skin infection. Bite responses range from absence of any physical signs, to a small bite mark and swelling, to a serious allergic reaction. Bed bugs are resistant to many pesticides and difficult to eradicate. Control with heat treating.**

# Brown Recluse Spider



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

  
Central  
Appalachian  
Regional **ERC**

The Brown Recluse spider (*Loxosceles reclusa*) is one of only three spiders in North America whose bite is medically concerning; the other two are the Black Widow and the Chilean Recluse. It is also called the brown fiddler or violin spider because of the marking on its cephalothorax that looks like a violin with the neck pointing to the rear of the spider. The Brown Recluse usually only inserts its fangs when pressed against the skin such as when putting on clothing or shoes. Most bites do not result in any symptoms, but the toxin can cause pain and itchiness within hours and a skin ulcer which can take many months to heal. Its range is mainly in the midwestern and central southern states. The spider tends to reside in woodpiles, sheds, closets, garages, and cellars that are dry and undisturbed. They feed on crickets, cockroaches, moths, and flies.



# American Cockroach



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

  
Central  
Appalachian  
Regional **ERC**

The American cockroach (*Periplaneta americana*) is the largest cockroach species at around 4 cm in length. It is also one of the fastest insects (over 5 km/hr), hence the sport of cockroach racing. It generally lives in dark, moist areas and prefers high temperatures (over 80o F); it does not tolerate cold temperatures. Despite the name, it is native to Africa and the Middle East, but due to its ability to adapt and travel with human activities it is now found worldwide. Their diet is quite varied feasting on a wide range of organic materials, particularly fermenting foods. Their risk for humans is that they transport pathogenic bacteria, viruses, and parasites from their feet and legs as they crawl across surfaces that people will touch or place food. Also, their feces and body parts in house dusts can trigger allergic reactions and asthma. They are controlled by insecticides and good home hygiene.

# Equine Encephalitis



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

 Central  
Appalachian  
Regional **ERC**

Eastern equine encephalitis (EEE), western equine encephalitis (WEE) and Venezuelan equine encephalitis (VEE) are caused by Alphaviruses which are transmitted by Aedes, Culex, and Coquillettidia mosquitos. Birds and rodents are the primary reservoirs, but unvaccinated horses are susceptible. These diseases infect humans with EEE being the most common. Only a few cases occur in the United States each year mostly in eastern or Gulf Coast states. Approximately 30% of people with EEE die; survivors have ongoing neurologic problems. There are no vaccines or medicines to treat EEE. Western equine encephalitis occurs infrequently but circulates in wildlife. Venezuelan equine encephalitis occurs in Central and South America. Reduce risk by using insect repellent, long-sleeved shirts and long pants.

# Anopheles Mosquito



**SOUTHEAST**  **CENTER**  
FOR AGRICULTURAL HEALTH AND INJURY PREVENTION

  
Central  
Appalachian  
Regional **ERC**

There are about 460 species of Anopheles mosquitos, of which 30 to 40 transmit the Plasmodium parasites which cause malaria. The Anopheles mosquito is considered the most dangerous animal on earth as there are over 240 million cases of malaria and over 600,000 deaths each year. Although malaria is now limited to tropical regions the Anopheles can live in colder climates. The eggs are laid directly on the surface of water with tiny floats, typically hatching within 3 days. Adults may live up to one month. After a blood meal on an infected animal the ingested parasites develop in the mosquito before they are infective to humans. The females need blood for egg development and have largely nocturnal feeding habits. Biting mosquitos can be greatly reduced through the use of insecticide treated bed nets and use of screens and enclosed housing construction.