

## **EEE and Aerial Spraying Frequently Asked Questions**

### ABOUT EEE

#### **What is Eastern Equine Encephalitis (EEE)?**

EEE is a rare, but serious disease that is caused by a virus spread by infected mosquitoes. The EEE virus can cause inflammation of the brain (encephalitis). In the United States, approximately 5-10 EEE cases in humans are reported annually. It is one of the most severe mosquito-borne diseases in the United States. According to the Centers for Disease Control and Prevention (CDC), approximately one-third of the human cases of EEE are fatal.

#### **How many total cases of EEE are there in Michigan?**

As of September 27, 2019, there have been nine (9) human cases within six (6) counties in Michigan including: Kalamazoo, Berrien, Barry, Cass, Calhoun, and Van Buren. Three (3) of the eight (8) cases resulted in death. Additionally, EEE has been identified in 27 animals. The animal cases have been identified in 13 different counties including: Barry, Berrien, Calhoun, Cass, Genesee, Jackson, Kalamazoo, Kent, Lapeer, Montcalm, Newaygo, St. Joseph and Van Buren.

For more information, visit [www.Michigan.gov/EEE](http://www.Michigan.gov/EEE)

#### **Why are we seeing EEE cases in Michigan?**

Michigan has had outbreaks of EEE about every decade since 1980 when the first human case was reported in the state. This year, the number of human cases of EEE in Michigan are equal to the total number of cases in the last ten years combined. It is unknown exactly why some years are more severe than others, although weather, including temperature and rainfall, is thought to play a role.

#### **How do people get infected with EEE?**

EEE is transmitted through the bite of an infected mosquito. You cannot get EEE directly from another person or from an animal such as a horse or deer.

#### **Who is at risk for infection with EEE?**

Anyone in an area where the virus is circulating in mosquitoes can get infected with EEE. The risk is highest for people who live in or visit woodland habitats, and people who work outside or participate in outdoor recreational activities, because of greater exposure to potentially infected mosquitoes. Those who are over 50 years old and under 15 years old are at increased risk of infection.

#### **How soon do people get sick after getting bitten by an infected mosquito?**

It takes 4 to 10 days after the bite of an infected mosquito to develop symptoms of EEE.

#### **What are the symptoms of EEE disease?**

Severe cases of EEE infection begin with the sudden onset of headache, high fever, chills and vomiting. The illness may then progress into disorientation, seizures and coma. Approximately a third of patients who develop EEE die, and many of those who survive have mild to severe brain damage.

### **How do I get tested for EEE?**

People who have been bitten by mosquitoes can monitor their health and talk with their healthcare provider if they develop symptoms such as fever, malaise, headache and confusion. Testing for EEE is not indicated in a person who is not showing signs suggestive of EEE illness.

### **How is EEE diagnosed?**

Diagnosis is based on tests of blood or spinal fluid. These tests typically look for antibodies that the body makes against the viral infection.

### **What is the treatment for EEE?**

There is no specific treatment for EEE. Antibiotics are not effective against viruses, and no effective anti-viral drugs have been discovered. Severe illnesses are treated by supportive therapy which may include hospitalization, respiratory support, IV fluids and prevention of other infections.

### **How can people reduce the chance of getting infected with EEE?**

- Avoid being outdoors between dusk and dawn when mosquitoes that carry EEE virus are most active.
- Apply insect repellents that contain the active ingredient DEET, or other U.S. Environmental Protection Agency-registered product to exposed skin or clothing, and always follow the manufacturer's directions for use.
- Wear long-sleeved shirts and long pants when outdoors. Apply insect repellent to clothing to help prevent bites.
- Maintain window and door screening to help keep mosquitoes outside.
- Empty water from mosquito breeding sites around the home, such as buckets, unused kiddie pools, old tires or similar sites where mosquitoes may lay eggs.
- Use nets and/or fans over outdoor eating areas.

### **Can I get sick from eating deer meat if it is infected with EEE?**

If an animal appears ill, you should not consume the meat from that animal, as there are other illnesses that can be transmitted. To kill potential pathogens, wild game should always be thoroughly cooked to an internal temperature of 165 degrees F, measured with a meat thermometer.

### **Can my pet get EEE?**

EEE is rare in dogs and cats, however, when cases have been identified in dogs, they're typically less than six months old. Horses are very susceptible to EEE and approximately 90 percent of horses that show signs of EEE die from the disease. A vaccine is available for horses.

### **How do I protect my pets from EEE?**

Keep pets indoors as much as possible between dusk and dawn, when mosquitoes are most active. Mosquito repellents labeled for use on people should not be used on pets. There are some topical products that can be applied to dogs to protect them from mosquitoes; concerned pet owners should work with their veterinarian.

## ABOUT SPRAYING FOR MOSQUITOS IN MICHIGAN

### **What is the purpose of spraying insecticide aerially on parts of Michigan?**

Aerial spraying can quickly reduce the number of mosquitoes in a large geographical area which in turn can reduce the risk of exposure to the EEE virus. When conducted according to strict regulations, aerial spraying is safe for people, animals, and the environment and has been successfully used in the United States for decades to reduce mosquito populations.

### **How will the aerial insecticide spraying occur?**

Mosquito control professionals will apply approved insecticides as an ultra-low volume (ULV) spray from a twin-engine plane that flies at approximately 300 feet above the ground. The ULV sprayers dispense very fine aerosol droplets. The droplets, which are smaller than the head of a pin drift through the air to kill adult mosquitoes on contact.

### **Where and when will the aerial spraying take place?**

Aerial spraying will take place in areas where there is a concentration of EEE cases in humans and animals. On the day of the spraying, the application will begin after dusk, at approximately 8 pm and will continue through the night or until weather conditions are no longer favorable for application. Mosquito control is weather-dependent. Wind speeds, temperature and precipitation on the ground and in the air may affect spraying.

For up-to-date application area information, visit [www.michigan.gov/EEE](http://www.michigan.gov/EEE)

### **What will the spraying look like to me as a resident if I am outside when it occurs?**

Residents will likely not even notice the spraying when it occurs. A twin-engine plane flying at about 300 feet above ground will apply a very small amount of product, approximately 1 tablespoon per acre (which is about the size of a football field). You may not even see or hear the plane, or feel the spray in the air, when it's being applied.

### **What insecticide is being used?**

The product being used is called Merus 3.0. It is an EPA-registered, organic botanical adult mosquito insecticide containing five percent pyrethrins which are naturally found in chrysanthemum flowers. Pyrethrins are commonly used to control mosquitoes, fleas, flies, moths, ants and many other pests and have been registered for use in insecticides since the 1950s. Merus 3.0 is OMRI Listed and can be used around organic crops and gardens.

OMRI certificate: <https://www.omri.org/mfg/cmc/certificate/10513>

### **Will Merus 3.0 cause any adverse health effects in people?**

Merus 3.0 is registered with the EPA and is labeled for public health use over residential areas. In general, no short-term or long-term risks to human health are expected during or after spraying.

### **Should I avoid exposure to the sprayed chemicals?**

In general, no special actions are necessary before or during spraying. If you are concerned or have known sensitivities, some ways to reduce your exposure are to:

- Remain inside during the hours spraying will occur.

- Close windows and doors. Turn off air conditioners and window fans that bring outdoor air inside.
- Bring outdoor items (laundry, outdoor furniture and children's toys) inside or cover them if possible.
- Keep pets indoors and cover swimming pools and fishponds, if possible.

### **What if I was outside when the spraying occurred, and I have concerns about exposure to the spray?**

In general, no health effects are expected from being outside during or after the spraying occurs. Some actions to take if you are concerned include:

- Wash your skin and/or clothes with water and detergent soap.
- Rinse your eyes with water.
- Consult your health care provider if you are concerned about your health.

### **How long do these chemicals last in the environment?**

Merus 3.0 will break down over time, ranging from hours in the air to days in the soil. No special action needs to be taken the morning after spraying; however, if you are concerned about contact with leftover chemical residue, you could:

- Rinse home-grown vegetables and fruits before cooking or eating.
- Wash outdoor surfaces and objects with soap and water to remove chemical residue.

### **Will the spray contaminate my drinking water source?**

Merus 3.0 binds strongly to soil, so chances are low that it could get into the groundwater. Drinking water reservoirs will be excluded from the spray area. Merus 3.0 breaks down quickly in the surface water. Because of these factors, Merus 3.0 is not expected in your drinking water.

### **What if I think that I am experiencing an adverse reaction to insecticide spraying?**

If you believe you may be experiencing any health effects from insecticides, call your health care provider or the Michigan Poison Control Center (800) 222-1222. If symptoms are severe, call 911 for assistance.

### **What should I do if I am concerned about my pet or farm animals being outside during or after the spraying?**

In general, no health effects to pets or farm animals are expected from being outside when the spraying occurs. If you are concerned, some ways to reduce exposure are to keep pets and farm animals indoors and shut barn windows to meet minimum ventilation requirements during the hours spraying will occur. Pet and livestock owners should always work their veterinarian regarding the overall health and wellness of their animals.

### **Can Merus 3.0 harm my bees?**

Like most insecticides, Merus 3.0 could be harmful to bees if they come in direct contact. The insecticide application will occur later in the evening after dusk when bees are expected to be in their hives. The amount of chemical being sprayed is low and breaks down quickly; the application is not expected to have an impact on bees. Concerned beekeepers can reduce exposure to their bees by covering the hive with wet burlap.

**What about the next day, when my bees are active again?**

Any insecticide residue on foliage from spraying the night before should be dry by the next morning. Dry residue is not toxic to pollinators, including bees.

**Can residents opt out of the aerial spraying?**

We are currently in a public health emergency and aerial applications provide the most effective option to suppress the outbreak by reducing mosquito populations. Due to the height and speed the plane will operate, it is not possible to stop the spraying over a single property. If an individual wishes to opt out of the application, under MDARD rules, an area of 1,000 x 1,000 feet would not be sprayed around the residence. This will reduce the overall treatment effectiveness in the area, mosquito populations upwind of the opt-out area will not be reduced, and neighbors will not benefit from the reduction in mosquito numbers.

Before exercising this option, please recall that EEE is highly deadly, and that this aerial spraying does not carry any significant risks to human health. While it is unnecessary to do so, you can further reduce your exposure to EEE by staying indoors, and closing windows and doors. If, for whatever reason, you would still prefer that spraying not occur in your area, you may send an email with your name and full residential address to [eee@michigan.gov](mailto:eee@michigan.gov). The request to opt out of spraying must be received at least 48 hours before spraying begins

FOR MORE INFORMATION

**For the updated information on EEE in Michigan, including case count,** visit [www.Michigan.gov/EEE](http://www.Michigan.gov/EEE)

**For general health information related to EEE,** visit: [www.cdc.gov/EEE](http://www.cdc.gov/EEE)

**For information on spraying in your county:** Updates will be provided via local media outlets, social media, and other channels 48 hours before spraying occurs.

**For health-related questions, contact MDHHS** at: (517) 335-8165