

Minimizing Mosquito Populations To Combat Zika Virus



Source: www.TurfMagazine.com

By Dr. Jim Fredericks

Mosquitoes are often described as one of the deadliest animals on Earth – specifically as one of summer’s most dangerous pests. These biting pests are known to transmit various diseases such as West Nile virus, malaria, dengue, and Eastern equine encephalitis (EEE), and this year Zika virus has become a top concern in the United States. Zika is unique as it is linked to disorders such as Guillain-Barre syndrome, and microcephaly, a serious birth defect.

While there are many species of mosquitoes, it’s mosquitoes in the genus *Aedes* that are carriers of Zika, and the primary concern for facility managers and executives. Because mosquitoes are active as long as the temperature remains above 60°F, it is essential for facility managers to take preventive steps now to minimize the risk of mosquito bites and mosquito-borne diseases this season.



Mosquitoes can also find their way inside structures. Keep this in mind when developing a prevention plan.

Zika Virus

To date, much of the conversation regarding Zika has addressed homeowners, specifically how homeowners, families, and individuals can protect themselves from mosquitoes, either in their own backyards or while traveling to areas with mosquito-borne transmission of Zika. That said, many of the concerns that homeowners and families face are also a concern for facility executives, but on a larger scale. Facility executives are responsible for the well-being of many people and have expansive and complex properties to maintain, which

could be harboring potential mosquito breeding sites. Therefore, it's imperative for managers to take proper precautions now to help curb biting mosquito populations on their properties.

Zika is spread to humans primarily through the bite of an infected *Aedes* mosquito. Zika transmission has also been confirmed from woman to fetus during pregnancy, from man to woman during sexual contact, and through blood transfusions. Most people who contract the virus are asymptomatic and won't necessarily know they are infected. Those who do have symptoms typically experience mild reactions similar to those associated with dengue and chikungunya, including fever, rash, joint pain, red eyes (conjunctivitis), muscle pain, and headache.

Understanding Mosquito Biology

In early 2016, Zika was confirmed in the United States in individuals who had traveled to Zika-affected countries. It is still unknown when, if, and where local transmission of Zika will occur. What we do know is that many parts of the southern and eastern regions of the U.S. are home to *Aedes* mosquitoes. These mosquitoes have the potential to transmit Zika locally if they feed on individuals that were infected with the virus outside the U.S.

The two *Aedes* mosquitoes most closely associated with the potential local transmission of Zika are *Aedes aegypti*, commonly known as the yellow fever mosquito and *Aedes albopictus*, also known as the Asian tiger mosquito.

The yellow fever mosquito is known to be the primary vector of Zika outside the U.S. and, therefore, has the potential to be the primary vector in the U.S. as well. Yellow fever mosquitoes prefer to bite humans over other animals and live near humans by breeding in areas around structures—think clogged rain gutters and standing water that collects in kiddie pools, children's toys, flower pots, and other areas around the yard.

The Asian tiger mosquito has a broader palate, feeding on many mammals and also has the potential to vector Zika. At times, this species of mosquito may feed exclusively on humans, but will also feed on other animals. The Asian tiger mosquito is considered one of the most invasive mosquito species as it can be transported long distances via human activity, stay dormant in the egg stage for up to a year, and breed in a variety of natural and man-made environments.

Investigating Your Facility

Understanding the biology and behaviors of mosquitoes is essential as facility managers and executives seek to eliminate and prevent infestations on their sites. Facilities vary based on size, needs, type, use, and geographic location, all of which may influence which pests a facility is susceptible to. As such, it is a smart idea to bring in the counsel and expertise of a licensed professional pest control company, experienced in servicing commercial facilities, to help tailor a plan specific to the location and surrounding grounds. Specifically, pest control professionals can identify and help eliminate potential breeding sites, and can also

recommend mosquito control programs to keep the property free of these pests.




Outdoor areas are the primary concern when it comes to mosquitoes. (Photo: meave)

Outdoor areas are the primary concern when it comes to mosquitoes. Buckets, bottles, dumpsters with improper drainage, tires, stagnant water features, and anything else that can hold a half-inch of water or more can become a mosquito breeding location.



Mosquitoes can also find their way *inside* structures. When developing a mosquito prevention plan for the building, pest professionals and facility managers should take into consideration doorways, pipework, ceilings, interior plants, personal space, food service areas, public areas, and the general grounds – such as areas of standing water, storm and sewer grates as well as trash collection areas.

This year in particular, with the growing concern over Zika virus and the potential for local transmission in the U.S., mosquito control is critical. Understanding how to identify mosquito breeding sites is key to proper mosquito control and mitigating concerns of mosquito-borne illnesses. Partnering with a professional pest control company can further alleviate concerns by quickly and effectively controlling the situation.

Every person has a role in the fight against Zika, whether an elected official, scientist, medical practitioner, pest professional, groundskeeper, or facility manager. A concerted group effort is needed to keep biting mosquito populations at bay. 

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