

Research Note

Distribution of mosquito larvae in various breeding sites in National Zoo Malaysia

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Abstract. Mosquitoes are principal vectors of major vector-borne diseases. They are widely found throughout urban and rural areas in Malaysia. They are responsible for various vector-borne diseases such as dengue, malaria, filariasis and encephalitis. A total of 158 mosquito larvae specimens were collected from the National Zoo, Malaysia, from 11 types of breeding habitats during the study period from end of May 2007 to July 2007. *Aedes albopictus* was the predominant species (35.4%), followed by *Tripteroides aranoioides* (26.6%), *Lutzia halifaxii* (11.4%), *Aedes alboscuteclatus* (10.1%), *Aedes caecus* (8.9%), *Armigeres* spp. (4.4%), *Malaya genurostris* (2.5%) and *Culex vishnui* (0.6%). It is important to have a mosquito free environment in a public place like the zoo. Routine larval surveillance should be implemented for an effective mosquito control program in order to reduce mosquito population.

Zoo, a public recreational park acts as the preservation and conservation centre for different groups of animals (i.e., carnivores, omnivores, amphibians, birds, reptiles and herbivores) for exhibition purposes. In 2001, 59 seriously ill people including 7 deaths were reported during an outbreak of West Nile virus caused by infected *Culex pipiens* in the zoo at New York City, along with dead horses, birds and cats (James, 2001). Therefore, zoo could be a place where there is high opportunity for mosquito borne diseases to spread to humans.

Although mosquito surveillance for adults and larvae has been regularly conducted in the country, there is however limited information on the presence of mosquito species in biological gardens (i.e., zoo). Thus, this study was a first attempt to determine and to detect the presence of mosquitoes in

various breeding sites that were present throughout the zoo area.

The National Zoo with over 90% of its animals kept in a spacious exhibition park with a natural landscape, has been transformed to an open concept zoo. It is located at 31°2'35"N and 101°45'28"E, covered by a land area of 110 acres. Situated 13 km northeast of Kuala Lumpur, it is located at Taman Melawati, Ulu Kelang in Selangor state. The area surrounding the zoo was formerly covered with thick vegetation before it was developed and turned into a well-planned residential area. The zoo is home to 5137 specimens from 479 species of animals.

Larvae were collected from end of May 2007 to July 2007. A total of 24 water samples were collected from different breeding locations. All the samples were labeled (i.e.,