

## ***Aedes* surveillance in low-income urban areas in Rio de Janeiro, Brazil: new approaches for entomological survey**

**Fernanda C. Morone<sup>1</sup>; Daniel C. P. Camara<sup>1,2</sup>; Nildimar A. Honorio<sup>1,2</sup>; Patricia Brasil<sup>3</sup>; Marilia S. Carvalho<sup>4</sup>; Renata Saraiva<sup>3</sup>; Tania Ayllon<sup>1,3</sup>**

<sup>1</sup>Núcleo Operacional Sentinela de Mosquitos Vetores, FIOCRUZ, Avenida Brasil 4365, CEP 21040-900, Rio de Janeiro, RJ, Brazil. <sup>2</sup>Laboratório de Mosquitos Transmissores de Hematozoários, IOC/FIOCRUZ, Avenida Brasil 4365, CEP 21040-900, Rio de Janeiro, RJ, Brazil. <sup>3</sup>Instituto Nacional de Infectologia, FIOCRUZ, Avenida Brasil 4365, CEP 21040-900, Rio de Janeiro, RJ, Brazil. <sup>4</sup>Programa de Computação Científica PROCC/FIOCRUZ, Avenida Brasil 4365, CEP 21040-900, Rio de Janeiro, RJ, Brazil.

Mosquito-borne viral infections, such as dengue, chikungunya and zika are considered major challenges in public health, being an increasingly important cause of morbidity and mortality worldwide, including Brazil. *Aedes aegypti* (L.) and *Ae. albopictus* (Skuse) are two invasive and sympatric mosquito species considered vectors of these arboviruses. The objective of this study was to characterize the infestation pattern of *Aedes* population in the low-income urban area of Manguinhos, Rio de Janeiro. Crowded housing and irregular garbage collection and water supply characterize the area. Mosquito collection was carried out biweekly, from February 2014 to February 2016, by direct aspiration in different collection sites: households, schools and key sites, such as junkyards, thrift stores, factories, tire repair shops and garages. A generalized linear model of the Poisson family was used to assess the association between the total numbers of adult *Aedes* collected with collection sites and different climatic variables. A total of 3108 adult mosquitoes were identified, being 42.6% *Ae. aegypti*, 0.68% *Ae. albopictus* and 56.8% *Culex* sp. The model was comprised of collection sites, lagged rainfall and lagged max. temperature. Results showed that collection in schools and key points increased, respectively, about 9 and 14 times the average number of *Aedes*. In addition, incrementing each unit of lagged rainfall and lagged max. temperature, the average number of *Aedes* increased by 1.7%, and 3.9%, respectively, controlled by all other variables. A high number of *Ae. albopictus* was found inside the study area, with the greatest numbers collected in the key points. Our results suggest that *Aedes* population dynamics inside this vulnerable area are complex, probably maintained by large unsupervised sites like key sites. The high infestation in schools also shows the high risk of arbovirus infection by infants, one of the most vulnerable age group for these infections.

**Key-words:** *Aedes*, vector surveillance, arboviruses.

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