Abstract

Objective. To estimate, using logistic regression, the likelihood of occurrence of a non-gonoactive Aedes aegypti female, previously fed human blood, with relation to body size and collection method. Material and Methods. This study was conducted in Monterrey, Mexico, between 1994 and 1996. Ten samplings of 60 mosquitoes of Ae aegypti females were carried out in three dengue endemic areas: six of biting females, two of emerging mosquitoes, and two of indoor resting females. Gravid females, as well as those with blood in the gut were removed. Mosquitoes were taken to the laboratory and engorged on human blood. After 48 hours, ovaries were dissected to register whether they were gonoactive or non-gonoactive. Wing-length in mm was an indicator for body size. The logistic regression model was used to assess the likelihood of non-gonoactivity, as a binary variable, in relation to wing-length and collection method. Results. Of the 600 females, 164 (27%) remained non-gonoactive, with a wing-length range of 1.9-3.2 mm, almost equal to that of all females (1.8-3.3 mm). The logistic regression model showed a significant likelihood of a female remaining non-gonoactive (Y=1). The collection method did not influence the binary response, but there was an inverse relationship between non-gonoactivity and wing-length. Conclusions. Dengue vector populations from Monterrey, Mexico display a wide-range body size. Logistic regression was a useful tool to estimate the likelihood for an engorged female to remain non-gonoactive. The necessity for a second blood meal is present in any female, but small mosquitoes are more likely to bite again within a 2-day interval, in order to attain egg maturation.

Keywords

Aedes aegypti; dengue; wing-length; non-gonoactive; Mexico