The Effects of Salinity on Aedes aegypti Blood Meal Selection

Brown, Rachel (School: Bartlesville High School)

One of the predominant insect disease vectors, the Aedes aegypti mosquito has been recorded in both fresh and salt water environments. Understanding the relationships between Ae. aegypti and salt water is necessary in order to control this disease vector. This experiment focuses on the relationship between salinity and blood meal selection. If blood meal hosts live in areas with a higher salt concentration in the water their skin would have a higher salt concentrations after swimming and bathing in this water. The hypothesis for this experiment was: if female Ae. aegypti are given a blood meal in which the “skin” has a saline solution on it for their blood meal, then they will land more times on the salt feeder, and thus will lay significantly more eggs than mosquitoes whose blood meal skin was not treated with a saline solution because there are higher numbers of Ae. aegypti in coastal areas where their blood meals are more likely to come into contact with salt water. After the first trial, the hypothesis was partially supported because the number of lands per female saw no significant difference between the saline and fresh water treated skin while the eggs per female did.