FUTA Journal of Research in Sciences

FUTA Journal of Research in Sciences, 2012 (2): 52-55

THE EFFECTS OF ALTERED PHYSICO-CHEMICAL PARAMETERS ON THE SURVIVAL OF *AEDES AEGYPTI* (LINN.)

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ABSTRACT
This research focuses on the effects of pH on the temperature, total dissolved solids (TDS) and electrical conductivity (EC) and the corresponding effects on the larval mortality of the *Aedes aegypti*. The larvae were sampled from the tree holes in Ahmadu Bello University Zaria using long handle dippers as described by Service (1993). The larvae obtained were identified to species level in the laboratory using X50 light microscope and the morphological keys provided by Hopkins, 1952.Thirty larvae each were introduced into five plastic cups filled with 250ml water including the control experiment. The pH, temperature, TDS and EC of the water were measured before and after 48 hours of alteration using HANNA HI 991300 pH/EC/TDS/Temp meter. The optimum physico-chemical parameters for mosquito breeding in the breeding water are pH of 7.4, temperature of 27.2^{o}C, total dissolved solids of 42ppm and electrical conductivity of 184µ, the optimum pH was later altered into 3, 4, 8 and 10 using drops of dilute 0.1M HCL and 0.1M NaOH. The results obtained showed that there is significant difference among larval mortalities at different pH ($p<0.05$) with the lowest mortality of 69.17% obtained at pH 4 and the highest mortality of 100% recorded at pH of 10. Carl Pearson correlation showed negative correlation between the pH and temperature, pH and EC while positive correlation was observed between pH and TDS ($p<0.05$). In conclusion, the survival of *Aedes aegypti* larvae is a function of the interaction between intrinsic attributes of the species and the physico-chemical parameters of the breeding water as shown by the results of this study.

Keywords: *Aedes aegypti*, physico-chemical parameters, larval mortality.