

IMPACT OF REPRODUCTIVE ACTIVITIES ON THE TISSUES OF *ZONOCERUS VARIEGATUS* GRASSHOPPER ADULTS (ORTHOPTERA: PYGOMORPHIDAE)

KEHINDE OLUTOYIN ADEMOLU, BABATIMDE ADEWUNMI IDOWU AND OLUBODE A. OKE
Biological Sciences Department, University of Agriculture, P.M.B 2240, Abeokuta, Nigeria
E-mail: kennyademolu@yahoo.com

ABSTRACT

The adult phase of insects' life is primarily for reproduction of young ones that makes continuity of life possible. The influence of reproductive activities like mating and oviposition were investigated in adult males and females variegated grasshopper, *Zonocerus variegatus*. The adult stage was divided into four phases according to activities performed following days of emergence, namely: early somatic phase, late somatic phase, copulation and oviposition. During each phase, the insects were dissected and the somatic tissues (haemolymph, fat body and femoral muscles) were removed analyzed for both organic and inorganic substances. The mean concentration of organic substances (protein, glucose and lipids) and inorganic substances (Na^+ , K^+ , Ca^{2+} , and Cl^-) in both sexes' tissues increased significantly ($p < 0.05$) from early somatic to late somatic phase. However, there was a significant decrease in concentration of the metabolites in the three tissues during copulation in both sexes which further decreased during oviposition in female adult. In contrast to the female, there was increase in the concentration of the metabolites after copulation in the male adult. Copulation and oviposition are activities that exhaust tissues nutrients in adult *Zonocerus variegatus*.

Key Word: copulation, oviposition, tissues, *Zonocerus variegatus*, nutrients