Effects of abiotic factors on the behavior of crickets raised in a tunnel unit

The aim of the study is to explore the suitability of a tunnel unit for cricket rearing in terms of temperature, humidity and light intensity. The use of a tunnel was necessitated by the fact that cricket rearing is a new and
novel idea and a suitable housing is not in place. Moreover, large scale production needs a dependable and abiotic-controlled environment. A tunnel unit measuring 8m by 15m was used as a housing unit. The crickets were reared in plastic buckets of a 100ml capacity with egg trays and toilet paper rolls used as hide outs. Temperature, humidity and light intensity profiles were monitored by the HOBO data logger installed in the tunnel. The effects of temperature, humidity and light intensity on cricket behavior was observed and

recorded. At temperatures $\leq 25^{\circ}C$, the crickets were less active, laid few eggs, ate and moulted less translating to slow growth while at temperatures between $28^{\circ}C$ and $35^{\circ}C$, they were very active, laid more eggs, ate more, moulted more which translated to higher growth rate. However, at temperatures $\geq 40^{\circ}C$, the crickets were weak and sluggish in their movement. High humidity (60-70%) coupled with moderate temperature ($35^{\circ}C$) encouraged high moulting translating to increased growth rate. Crickets ate and laid more eggs at night than during the day time indicating that too much light affects their laying and feeding behavior. Developmental and physiological characteristics of cricket are dependant on the abiotic factors.