905/A/Poster

Assessment of oxygen lowering methods as an egg hatching stimuli of primary dengue transmitting vector, *Aedes aegypt*

H P B K D Ramyasoma,[1,2]* Y I N S Gunawardena,[1] R S Dassanayake[2] and W Abeyewickrema[1]

[1]*Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya, Ragama,*
[2]*Department of Chemistry, Faculty of Science, University of Colombo, Colombo 03*

The rearing of *Aedes aegypti* mosquitoes is complex and demanding due to several factors. The study on rearing of *Ae. aegypti* mosquito vectors is important for insecticide resistance, repellents and other control measures of vector mosquitoes; factors that affect mosquito fitness are of importance for the quality of fundamental and applied research. *Ae. aegypti* larvae are affected by temperature, density and available nutrition; mating is not necessarily accomplished naturally and females need a blood meal to produce eggs. Previous reports suggested an inverse relationship between dissolved oxygen and hatching of eggs flooded under conditions of static oxygen level; very low levels being required to induce a high degree of hatching. In contrast, even a slight lowering of the oxygen level while eggs were flooded provided powerful hatching stimulus such as by Brewer yeast. In this study, mosquito eggs were subjected to hatching using 200 mL portions of different hatching solutions such as tap water, boiled tap water, boiled tap water with Brewer Yeast Suspension (BYS), distilled water with BYS and distilled water and incubated at room temperature overnight. IAEA recommended larval food was used to feed larvae until they became pupae. For general rearing, mosquitoes were maintained at 26-28 °C, 72-80% relative humidity, under a 14-15 hr light and 9-10 hr dark cycle. A glucose solution (10%) was used to feed adult mosquitoes while chicken blood was used to feed *Ae. aegypti* mosquitoes to lay eggs. Counted hatching rates and survival rates were respectively 65% and 46% (n=63) in boiled tap water with BYS, 56% and 38% (n=52) in distilled water with BYS, 22% and 11% (n=53) in boiled tap water, 11% and 2% (n=56) in distilled water and 0%, 0% (n=28) in tap water. The development time duration from first instar to fourth instar in *Ae. aegypti* was 7-8 days (n=828). Pupae development took 2-3 days (n=494). Life span of the adult mosquito stage was 11-13 days (n= 435). This preliminary study on the hatching of *Ae. aegypti* eggs indicated that the yeast suspension method is more suitable than the boiled water method for the laboratory scale mosquito eggs hatching process.

Keywords: *Aedes aegypti*, brewer yeast, dengue vector, mosquito egg hatching

Acknowledgment: National Research Council (NRC Grant No. TO-14-04).

wabeyewickreme@yahoo.com Tel: +9471 335 9777