

## **Coir dust extract as a cost effective culture medium in multiplication of *Bacillus thuringiensis* against *Aedes aegypti***

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*Aedes aegypti* is the principal vector for dengue disease. During the last 9 months of the year 2015, 20823 suspected dengue cases have been reported from all over the Sri Lanka. *Bacillus thuringiensis* (*Bt*) is widely used in mosquito control programs. However, the large-scale multiplication of this *Bt* is expensive due to the use of high cost of the production medium. In this study coir dust extract which locally available raw material that coir dust from the coir fiber industry was selected as a medium for small scale culturing of *Bt* was used to develop a cost-effective medium and it was tested against last instar larvae of *A. aegypti* using the concentration of 20, 30, 40, 40, 60, 70 mL/L. The larval mortality was assessed after 24 and 48h. Experiments were designed in a Complete Randomized Design and obtained data were statistically analyzed using SAS package 8.0. Lethal concentration (LC<sub>50</sub>) value was estimated by probit regression analysis. *Bt* at 70mL/L excelled to cause 77.5% and 92.5% mortality of larvae at 24 and 48 h after the application, respectively. LC<sub>50</sub> of 53mL/L on 48 h of exposure was obtained against fourth instar larvae of *A. aegypti* using a 72 h old culture grown in coir dust. Hence, coir dust extract based culture medium is suitable for the multiplication of *Bt* for controlling *A. aegypti*

**Keywords:** *Aedes aegypti*, *Bacillus thuringiensis*, Coir dust extract, Lethal concentration, Mortality.