

Abstract

Cultivation of *Bacillus thuringiensis* – OGB- strain – 1 on sweet potato starch was evaluated and the efficacy of whole cell biomass for mosquito control and subsequent malaria prevention investigated. The results showed that the sweet potato medium supplemented with yeast extract and amylase enzyme solution gave the highest growth of *Bacillus thuringiensis* resulting in a final cell concentration of 1.447×10^9 cells/ml. The optimum enzyme and yeast extract concentrations were 3.9 u/L and 5.8g/L, respectively. The optimum sweet potato concentration was 50 g/L and higher concentrations inhibited the growth of the *Bacillus thuringiensis*. About 4.0×10^8 cells/L gave the maximum larvicidity of 100%. The activity of both the *Bacillus thuringiensis* grown on sweet potato media and those on glucose media were the same and persisted for about four days. A statistical analysis of the effect of the *Bacillus thuringiensis* on malaria prevention using a non-parametric test “ χ^2 -test at 5% confidence level ($P > 0.05$)” showed a significant reduction in malaria incidence in the test compounds. The use of sweet potato for *Bacillus thuringiensis* cultivation and subsequent utilization for mosquito control would cause a reduction in the cost of *Bacillus thuringiensis* production and consequently a reduction in the amount of money spent on malaria treatment.

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