**MOLECULAR IDENTIFICATION OF *Bacillus thuringiensis* AND ITS INSECTICIDAL PROPERITY AGAINST MOSQUITO LARVA**

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**ABSTRACT**

A major challenge for achieving successful mosquito control is overcoming insecticide resistance. *Bacillus thuringiensis* is one of the most effective bio-larvicides organism for control of mosquitoes, and its isolation, purification and use as bio-insecticide should be embraced in Nigeria for economic growth. This study looks at the possibility of isolating *Bacillus thuringiensis s*and proper identification by molecular analysis with the aim of testing its effect on mosquito larva. Soil samples of depth 2-5cm were collected from different locations within Thinkers’-Corner, Enugu. The samples were treated with 0.12M and 0.25M sodium acetate, after which pour plate method was used for culturing. DNA of the isolates (12) was extracted using Silica method and Promega kit, the extracts were amplified by polymerase chain reaction using universal primer for bacteria and specific primer for Cry4 protein gene for *Bacillus thuringiensis*. Two of the isolates were confirmed as *Bacillus thuringiensis* based on biochemical characterization and morphological observation, but only was positive *Bacillus thuringiensis* by molecular analysis. The larvacidal activity of the isolated *Bacillus thuringiensis* with other isolates was tested against the larvae of mosquito at different dilutions. The *Bacillus thuringiensis* with another isolates showed a significant level of toxicity towards the mosquito larvae. Further research on the isolation of the spores of this organism, lyophilizing them is a good step towards the production of bio-insecticide for the country’s economic growth.

**Keywords:** *Bacillus thuringiensis*, larvicide, mosquito larva, soil and Molecular identification