



## **Insecticidal and growth inhibitory potentiality of Chitosan, a chitin-derived biopesticide against *Spodoptera litura* (Fabricius)**

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**Abstract :** Chitosan is a chitin-derived bio-molecule. Its insecticidal possibility was evaluated at concentrations of 1.0, 2.0, and 3.0 g/L against the common cutworm or armyworm, *Spodoptera litura* (Fab.) larvae under laboratory conditions in Bangladesh during the period from July 2016 to June 2017. The 2nd instars larvae were treated with selected concentrations through different application methods viz. topical (direct), leaf-dip (indirect), and combined. The efficacy of different techniques and concentrations on larval mortality and growth inhibition was observed. The larval mortality was recorded at 1, 3, 5 and 7 days after treatment (DAT) application. The mortality and growth were dose, method, and time dependent. The highest larval mortality was found in 3.0g/L and maximum mortality (62.72%) was recorded in combined approach followed by topical (52.51%) and leaf dip (46.14%) method at 7 DAT. With increasing time larval mortality increased and at 7 DAT it was maximum followed by 5, 3 & 1 DAT. The highest (27.61%) growth inhibition was obtained from the combination method at 3.0 g/L dose of chitosan. The results of the present study revealed that chitosan has a insecticidal activity to control *Spodoptera litura* (Fab.). However, it might be used as a insecticide after commercialization or could be a component of Integrated pest management for the management of *Spodoptera litura* (Fab.).

**Keywords :** Biopesticide; Chitosan; Growth inhibition; Larval mortality; *Spodoptera litura*.

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