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(54) Title of the invention : “NOMURAEA RILEYI EXHIBITED NOTABLE BIOEFFICACY AGAINST HELICOVERPA ARMIGERA (HUBNER) LARVAE, LEADING TO ALTERATIONS IN PROTEIN PROFILE: A PROMISING STRATEGY FOR PEST MANAGEMENT”

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## (57) Abstract :

The present invention relates to *Nomurea rileyi* exhibited notable bioefficacy against *Helicoverpa armigera* (Hubner) larvae, leading to alterations in protein profile in pest management. The *Helicoverpa armigera* is one of the most serious polyphagous pests of many economically important crops. *Nomurea rileyi*, an effective entomopathogenic fungus for controlling *H. armigera*, offers several advantages over other synthetic insecticides. In this study, an *N. rileyi* LC50 concentration of  $1.97 \times 10^6$  spores/ml is applied to the 4th larval instar of *H. armigera* to investigate its impact on the total protein and protease activity of the larval body homogenate. Additionally, qualitative analysis of proteins in healthy developmental stages of *H. armigera* larvae and in *N. rileyi*-treated larvae is conducted using SDS-PAGE. The present investigation reported differences in SDS-protein bands between the control untreated and treated groups. SDS-PAGE analysis of the total body homogenate demonstrated that some proteins are down regulated upon treatment with *N. rileyi*. Quantitative analysis of total protein content and proteolytic activity revealed a significant decrease ( $p < 0.05$ ) in the total protein content of larval bodies and a significant increase ( $p < 0.05$ ) in protease activity in *N. rileyi*-treated larvae compared to the control larvae. The data from this study help in understanding how *N. rileyi* can effectively control *H. armigera*.

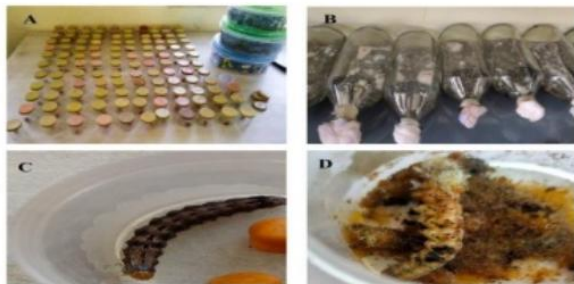


Fig.1 Photographs showing A.Rearing of *H.armigera* B. Maintenance of *N. rileyi* fungal culture C. *H. armigera* larvae without treatmentD. *H. armigera* larvae after treatment with *N.rileyi*.

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