

Eco-friendly management of hadda beetle using *Beauveria bassiana* in Brinjal.

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Abstract

Brinjal (*Solanum melongena* L.) is one among the vegetables grown in Jaffna Peninsula of Sri Lanka. It has been extensively cultivated throughout the country due to its demand among the consumers. The productivity of brinjal depends on the intensity of the attack of pests throughout the year. Among the pests hadda beetle, *Epilachna vigintioctopunctata* (Coleoptera: Coccinellidae) emerged as the key pest and caused serious damage on the foliage. This damage affected the flowering and fruiting ability of the crop and as a result few malformed fruits were produced. This enforced the farmers to frequently spray huge amount of insecticides, but the beetle was not controlled successfully. Farmers invested 50% of the cost of production for spraying insecticides thus, frequent spraying of toxic chemicals cause health hazards to the consumers. Considering the biosafety of the environment and effective management of the pest using mycopathogen, *Beauveria bassiana* was evaluated. Pathogenicity tests were conducted in vitro and followed by field evaluation. Concentrations of 1×10^9 , 10^8 , 10^7 , 10^6 and 10^5 spores/ml in vitro and in the field, 1×10^7 spores/ml of *B. bassiana* was used for evaluation. The mortality of the beetles was recorded daily and dead beetles were removed and kept in humid chambers for incubation to enhance mycelial development. Mortality of *E. vigintioctopunctata* was apparent at 18 hours after application of *B. bassiana* at the concentration of 1×10^8 spores/ml under the laboratory condition (30 ± 2 degrees C, $80 \pm 2\%$ RH) and 72 hours after application in the field, the mortality of *E. vigintioctopunctata* was achieved even the first day itself at the concentration of 1×10^7 spores/ml. These results are helpful to develop an eco-friendly management of the beetle, *E. vigintioctopunctata* and would help immensely to reduce the spray load of insecticides on brinjal and to minimize the pesticide hazards to the consumers.

Indexed keywords

EMTREE drug terms: insecticide

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Medline is the source for the MeSH terms of this document.