

RESEARCH ARTICLE

Bio-efficacy of entomopathogenic fungus *Beauveria bassiana* and certain indigenous products against *Plutella xylostella* (Linn.) infesting cabbage

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ABSTRACT..... Studies were conducted to know the comparative bio-efficacy of entomopathogenic fungus, *Beauveria bassiana* and certain indigenous products against the larvae of diamond back moth, *Plutella xylostella* (Linn.) on cabbage (*Brassica oleracea*). A lab trial was conducted during 2008-2010 at Allahabad Agriculture Institute Deemed University. All the treatments were found significantly superior over control. Among the treatments, the highest larval mortality of 100 per cent with the treatment Ts (DDVP 0.05%) and the minimum larval mortality of 21.429 per cent was recorded with the treatment (NL+CBM 4%). The extent of mortality of *Plutella xylostella* (Linn.) appeared to be affected by the number of conidia striking on the insect body. Each episode of treatment was replicated three times and per cent net mortality of different larval instar (1st, 3rd, 5th) was recorded after the interval of 24, 48 and 72 hours, per cent net mortality at 72 hours was recorded highest over 48 and 24 hours and at the same time mortality in 1st instar was found more in comparison to 3rd and 5th instar larvae.

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INTRODUCTION.....

Cabbage (*Brassica oleracea* var. *capitata*) is one of the most important Cruciferous vegetables grown all over the country with 0.27 million hector areas and 5.9 million tones production. India is next to China in cabbage production (Chaddha *et al.*, 2001). It covers about 4 per cent of total area under vegetables in India. Among the pest complex of cabbage, diamond back moth *Plutella xylostella* (Linn.) is the most destructive and dreaded pest. Krishna Kumar *et al.* (1983) reported 63 per cent loss in marketable yield of cabbage due to attack of *Plutella xylostella*. Indigenous products *viz.*, neem products are not only effective against the crop pest but also ecologically safe and free from residual problems. Neem oil 1 per cent, water extract of neem leaves 40 per cent and neem kernel extract 2 per cent have been found effective against some insects (Gupta *et al.*, 2000), and so, attention was now

being focused on the use of *biopesticide*, *Beauveria bassiana* constituting on the important component to supplement or as an alternate to synthetic chemicals. Keeping these facts in view, present study was conducted to evaluate the efficacy of indigenous products and entomopathogenic fungus, *Beauveria bassiana* against *Plutella xylostella* under laboratory conditions.

RESEARCH METHODS.....

The trial was carried out for the management of *Plutella xylostella* at the Department of Plant Protection, Allahabad Agriculture Deemed University for determining the efficacy of different treatments against the 1st instar, 3rd instar and 5th instar larvae. The larvae of the test insect were collected from infested cabbage field of Allahabad Agriculture Deemed University. To maintain laboratory culture, larvae collected