

## **Bio-efficacy of eco-friendly pesticides on the management of *Plutella xylostella* Linn. on cabbage**

**R. Mandi and A. Pramanik**

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**ABSTRACT :** A field trial was conducted to find out the bio-efficacy of eco-friendly pesticides (*Bacillus thuringiensis* 5% WP @ 0.2% a.i., *B. bassiana* @ 0.5% a.i., *B. bassiana* @ 1.0% a.i., Azadirachtin -10000 ppm. @ 0.002% a.i., NSKE @ 5.0% a.i., Diflubenzuron + deltamethrin 22% SC @ 0.022% a.i., Spinosad 45% SC @ 0.01% a.i., Mittimax (extract of onion, garlic, ginger and cow urine) @ 0.15% a.i.) against *Plutella xylostella* Linn. population vis-a-vis their effect on the natural enemy, *Cotesia plutellae*. Amongst the different treatments, Diflubenzuron + deltamethrin 22% SC @ 0.022% a.i. recorded the highest (60.68%) DBM population reduction followed by *B. bassiana* @ 0.5% a.i. and *B. bassiana* @ 1.0% a.i. with population reduction of 57.37% and 56.75%, respectively. On *C. plutellae*, Diflubenzuron + deltamethrin 22% SC @ 0.022% a.i. recorded the lowest (2.84%) population reduction followed by *B. bassiana* @ 1.0% a.i. and *B. bassiana* @ 0.5% a.i. with population reduction of 3.34% and 3.87%, respectively. The percent increase of yield over control ranged from 11.41% to 50.13% in pesticide treatments with the highest yield (49.23t/ha) in spinosad 45%SC as against 32.79 t/ha in untreated control. The results indicated that Diflubenzuron + deltamethrin 22% SC @ 0.022% a.i and *B. bassiana*@1.0% were effective against DBM and safe to *Cotesia plutellae* in cabbage.

**Key Words:** Cabbage, *Plutella xylostella*, *Cotesia plutellae*, Eco-friendly pesticides.