

## EFFECT OF FLOWER BORDER ON NATURAL ENEMY POPULATION IN MUNG BEAN CULTIVATION

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Habitat manipulation is an effective option to conserve beneficial insects within agricultural landscape by providing resources such as nectar and shelter. However, there is lack of information on these ecological techniques under local conditions. Therefore, this study was conducted to assess the effect of flower border on abundance of insect fauna in mung bean ecosystem. Eight mung bean plots (var-MI 06, 5 x 6 m) were arranged in RCBD design with four replicates. Four of which were surrounded with flower borders (FB) using *Atapethiya* (*Tagitus lemmoni*) and *Zinnia* (*Zinnia elegans*), while the others were kept without flower border (WFB). All the plots were maintained without pesticides. Insects were sampled at one-week intervals by sweep-netting. The captures were identified up to families and their abundance and diversity were analyzed by Poisson regression generalized linear model and Shannon diversity index. A total of 3192 insects were collected during the study, belonging to 62 families including pests (34%), natural enemies (32%) and neutral insects (33%). Families Braconidae (40%) and Chrysomelidae (35%) were the dominating groups. Species diversity was higher in plots WFB ( $H' = 1.36$ ) compared to the plots with FB ( $H' = 1.29$ ). Insect pest abundance was significantly higher ( $P < 0.001$ ) in the plots WFB, whereas, the natural enemy abundance was significantly higher ( $P < 0.001$ ) in the plots with FB. Further, population of natural enemies was higher than the population of pests in plots with FB and similar pattern was found over time. However, the population of pests was higher than natural enemies in plots WFB. The average yield with FB ( $176.88 \pm 9.27 \text{ gm}^{-2}$ ) was significantly higher ( $P < 0.01$ ) compared to the yield in field WFB ( $143.13 \pm 23.08 \text{ gm}^{-2}$ ) probably due to the influence of natural enemies. It is concluded that, flower borders around mung bean plots can be effectively used to enhance natural enemy population in agro-ecosystems.

**Keywords:** Flower border, Habitat manipulation, Insect pests, Natural enemies