

INFLUENCE OF TRAP CROP AND INTERCROPPING IN MANAGEMENT OF GRAM POD BORER, *HELICOVERPA ARMIGERA* IN CHICKPEA

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ABSTRACT : To know the influence of trap crop and intercropping in management of *H. armigera* in chickpea this experiment was carried out along with five treatments namely Chickpea + Marigold [Trap crop, Chickpea + Coriander, Chickpea + Linseed, Chickpea + Barley and Chickpea as sole crop in a Randomized Block Designed (RBD)] having five treatments with 3 replications in the *Rabi* season of 2015-16 and 2016-17 at the Agriculture Research Farm of Institute of Agricultural Sciences, BHU, Varanasi, India. The experiment showed that chickpea + coriander performed better in field and suppressed pest population and also the highest percentage of parasitism was recorded at full flowering stage and at late pod stage was 6.20% and 4.10%, respectively with mean of 5.15% in chickpea + coriander inter cropping followed by chickpea + marigold trap cropping (4.33%) and the lowest parasitism by *Campoletis chloridae* was observed at full flowering stage and at late pod stage was 3.60% and 1.95% respectively with mean of 2.78% in sole chickpea crop.

Key words : Chickpea, intercropping, *Helicoverpa armigera*, trap crop.

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INTRODUCTION

Grain legumes play an important nutritional role in the diet of millions of people in the developing countries and are thus sometimes referred to as the poor man's meat. Since legumes are vital sources of protein, calcium, iron, phosphorus and other minerals, they form a significant part of the diet of vegetarians since the other food items they consume do not contain much protein. Chickpea (*Cicer arietinum* L.) is exposed to a wide range of insect pests, of which pod borer *Helicoverpa armigera* (Hubner) is most common and critical challenge for chickpea productivity around the world (Luckmann and Metcalf, 1975; Ujjan *et al*, 2019; Jai *et al*, 2020). In case of outbreaks, yield losses caused by chickpea pod borer range from 10-90 percent depending upon the insect population and susceptibility of genotypes (Sharma *et al*, 2012). Intercropping is an ideal cropping for insect pest management at no additional cost. It acts as a preventive measure against build-up of insect pest population and is compatible with other methods of pest control and free from environmental pollution problems. It has considerable

impact on egg laying, larval population, larval parasitisation and pod damage (Kumar *et al*, 2008). Intercropping can affect microclimate of the agro ecosystem and ultimately produce an unfavorable environment for the pest.

MATERIALS AND METHODS

The experiment was carried out by growing a combination of trap crops and inter cropping in a Randomized Block Designed (RBD) having five treatments with 3 replications in the plot size of 3 × 1.8 m² with spacing of row to row and plant to plant 30 × 15 cm, respectively at Agriculture Research Farm, Institute of Agricultural Sciences, Banaras Hindu University. Following recommended packages practices are followed to raise good crop stand.

The number of eggs was recorded at weekly interval on randomly selected five plants in each plot and number of larvae was counted 1 L m⁻¹ row length at full flowering stage and podding stage in each plot also number of healthy and damaged pods plants⁻¹ was plucked and counted at the time of harvesting in each plot separately and find out percent pod damage using following formula.

consecutive years experiment on inter cropping and trap cropping indicates that chickpea + coriander performed better in field and suppressed pest population.

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