

Evaluation of Cultural Methods for Insect Pest Complex of Soybean (*Glycine max (L)Merrill*) in District Rewa (M.P.) India

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ABSTRACT: The field studies were carried out for evaluation of cultural methods for insect pest complex of soybean in Rewa region. Study of insect pest complex was done from September 2008 to December 2008. Seed damage caused by the bugs fell by 33.50% in the trap plot and 55.80% in the without trap crop.

Key words – Soybean, Trap crop, Insect pest complex, *Sesbania rostrata*.

INTRODUCTION

Soybean [*Glycine max (L.) Merrill*] is a unique crop with high nutritional value, providing 40% protein and 20% edible oil, besides minerals and vitamins. It is playing an important role in augmenting both the production of edible oil and protein simultaneously under the circumstances in which the shortage of these commodities are being experienced by people. It also supports many industries; soybean oil is used as raw material in manufacturing of antibiotics, paints, varnishes, adhesives, lubricants etc. Soybean meal is used as protein supplement in human diet, cattle and poultry feed.[1]

But there are many problems in cultivation of soybean in India as all stages of this crop are prone to heavy infestation by pest complexes [2]. Some common insect pest complex infecting soybean crops are Green Semilooper, Tobacco Caterpillar, White fly, Girdle beetle etc. [3]

The present study was compared the insect infestation in soybean as solo crop and with the trap crop condition.

MATERIALS AND METHOD

The present study was done in several areas of District Rewa of Madhya Pradesh. The study was conducted between the months September to December 2008. *Sesbania rostrata* was selected as the most suitable trap crop. It possesses the characteristics of a good trap crop. It is taller than soybean and since it takes longer to mature, it can also attract sting bugs over a longer period. *S. rostrata* was planted two weeks before soybean was sown. It is usually planted on two opposite sides of soybean field. This is because the concentration of sting bugs in soybean fields is conspicuously higher around the edges of the field.

The surveys were carried out one in September 2008, the second in October 2008 and the third in December 2008. Damage to pods by the pest was assessed at sites in 2008.

RESULTS AND DISCUSSION

Soybean is an important oil seed crop, it provides highly quality edible oil. At present soybean provides 20% world supply of oils, more than any other single vegetable or animal source. Soybean is not only the prime source of vegetable oils and proteins, but is also enriching the soil fixing atmospheric nitrogen. It is also used for ensilage. [4]

In the present investigation we studied insect population and comparison of damage caused by stink bugs on soybean with and without trap crop. The results showed that the bug population was lower in plot with a trap crop than in those without one (Table 1). The bugs emigrated into the trap crop from surrounding areas when *S. rostrata* had passed the flowering stages. Their main population remained on the trap crop, although some of them moved onto the soybean plants from time to time.

Seed damage caused by bugs fell by 33.50 % in the trap plot and 55.80 % of seed in the plot without the trap crop (Table 2). This is because adult bugs had direct access to the soybean plants.

Singh and Patel 2013 [5] studied chemical control of pest of soybean in satna region. It was concluded that monocrotophos showed best result in the control of sucking insect pests.

Khanzada et al. 2013 [1] described relative resistance of soybean cultivars against sucking insect pests.

Table -1: Insect population on soybean with and without Trap crop and on trap crop

Plot	Number of Adults	Number of Nymphs
With Trap crop	29	97
Without Trap crop	160	923
On the Trap crop	303	103

Table -2: Comparison of Damage caused by stink bugs on soybeans planted with and without Trap Crops

Plot	No. of grains tested	No. of grains infected	Damage (%)
With Trap crop	400	134	33.50
Without Trap crop	500	279	55.80

CONCLUSION

In the present course of investigation, we have to explore the culture method like the use of trap crops in combating the pest attacks. Although there are rich resources of natural enemies (parasites, predators and pathogens), but their use as a method of controlling soybean pests has not yet been adopted extensively in the region.

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