

Spectrum of Insect Pest Complex of Soybean (*Glycine max* (L.) Merrill) at Lambapeepal Village in Kota Region

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Abstract: The field studies were carried out for identification of various insect pests of soybean at Lambapeepal village agriculture farm in Kota region. Study of insect pest complex was done from July 2010 to October 2010 by direct visual counting method. The investigations reveal that maximum population of green semilooper was observed on vegetative stage of *Glycine max* while tobacco caterpillar was most frequent on flowering and pod stages. The order of frequency of pests at vegetative stage was green semilooper (1.2) > tobacco caterpillar (0.8) > grass hoppers (0.4) > girdle beetle and *Heliothis* sp. (0.2 each) > white fly (0.1). The order of frequency of pests of flowering stage was, tobacco caterpillar (3.25) > green semilooper, *Heliothis* sp. and grass hopper (0.8 each) > girdle beetle (0.6) > white fly (0.4) > Bihar hairy caterpillar (0.3) > pollen feeder (0.2) while the frequency order at pod stages was tobacco caterpillar (2.75) > *Heliothis* sp. and grasshoppers (0.8 each) > girdle beetle and hairy caterpillar (0.5 each) > pollen feeder (0.4) > white fly (0.2).

Key words: *Glycine max*, pest complex, direct visual counting, tobacco, beetle, India

INTRODUCTION

Soybean, *Glycine max*. (L.) Merrill has been an important kharif crop in India. The most important products which are obtained from this crop are grains, oil, pulse, milk, curd, sweets, soya protein, neutrino, soya sauce, etc. Soybean is also one of the important crops of Hadoti region. The farmers of Hadoti region are highly dependent on this crop as an immense source of economy. This crop is not so costly for poor who can easily use it as their economic source, food, etc. The waste product from this crop is also an important fodder for domestic animals. Its seeds contain on an average 43.2, 19.5 and 20.9% protein, fat and carbohydrate contents, respectively.

But, there are many problems in the cultivation of soybean in India as all stages of this crop are prone to heavy infestation by pest complexes (Gangrade, 1976).

MATERIALS AND METHODS

The present study was done in Lambapeepal of Kota region for insect pest complex of soybean in the year 2010. Ten plants at random were selected for the study of insect pest complex. Insect pests of different selected plants were counted through direct visual counting method. An aspirator was used for collecting, fast moving and flying insects. Population of different insect pests was recorded at weekly interval during morning hours

between 7.00-8.30 a.m. without disturbing the pest fauna. The insect pest complexes were identified with the help of entomological taxonomic keys. The larvae which were not identified were cultured till their adulthood.

RESULTS AND DISCUSSION

In the present investigation, it was observed that soybean crop was heavily attacked by a variety of insect pests throughout its growth stages. Maximum population of green semilooper was observed on vegetative stage of soybean while tobacco caterpillar was most frequent on flowering and pod stages.

The order of frequency of vegetative stage was green semilooper (1.2) > tobacco caterpillar (0.8) > grass hoppers (0.4) > girdle beetle and *Heliothis* sp. (0.2 each) > white fly (0.1).

Bhattacharjee (1976) noticed incidence of the white fly *Bemisia tabaci* on soybean and reported that the pest thrived at high temperatures following premonsoon showers and infested the crop from two leaf stages throughout the growing period. In present study also, the white fly was frequent in all the stages of soybean plants (Table 1).

The order of frequency of pests of flowering stage was tobacco caterpillar (3.25) > green semilooper, *Heliothis* sp. and grasshoppers (0.8 each) > girdle beetle (0.6) > whitefly (0.4) > Bihar hairy caterpillar (0.3) > pollen feeder (0.2). While the frequency order at pod stage was

Table 1: Average no. of insect pests per plant of *Glycine max.*

Names of insect	Stages		
	Vegetative	Flowering	Pod
Green Semilpoo			
<i>Chrysodeixis acuta</i>	1.2	0.80	0.40
Tobacco Caterpillar			
<i>Spodoptera litura</i>	0.8	3.25	2.75
Bihar hairy Caterpillar			
<i>Diacrisia obliqua</i>	0.0	0.30	0.50
<i>Heliothis</i> sp.	0.2	0.80	0.80
Girdle beetle			
<i>Oberea brevis</i>	0.2	0.60	0.50
White fly			
<i>Bemisia tabaci</i>	0.1	0.40	0.20
Pollen feeder			
(<i>Oxyetonia</i> sp.)	0.0	0.20	0.40
Grasshoppers	0.4	0.80	0.80

tobacco caterpillar (2.75) > *Heliothis* sp. and grasshoppers (0.8) > girdle beetle and hairy caterpillar (0.5 each) > pollen feeder (0.4) > white fly (0.2).

According to Gangrade and Kapoor (1973) Bihar hairy caterpillar *Diacrisia obliqua* has been found damaging soybean crop in certain parts of India who also reported that the infestation began in localized areas of soybean field in early September and continued to increase until maturation of soybean seeds in pods in the month of October. The findings favour the present investigation where Bihar hairy caterpillar has been attacking the flowering and pod stages[@] 0.3 and 0.5 per plant (Table 1). Genung and Green (1965) reported that adult girdle beetle *Oberea brevis* emerge in June and July after hibernation and aestivation inside small tubes plugged on both ends which were made in hollow stem of soybean plants.

CONCLUSION

Present finding meet with earlier observation where girdle beetle was frequent[@] 0.2, 0.6 and 0.5 at vegetative, flowering and pod stages, respectively. Hence many species of insect pests were reported during all the growth stages of soybean.

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