

Research Paper :

Natural enemies of sorghum earhead caterpillar (*Heliothis armigera*)



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SUMMARY

Studies on the activity of natural enemies of sorghum earhead caterpillar were carried out in field and laboratory conditions. The egg parasitoid, *Trichogramma chilonis* emerged from *Heliothis armigera* eggs was initially recorded during August first week and continued upto second week of November with peak parasitization during September fourth week (57%) coinciding with flowering stage of the crop. The emergence of larval parasitoids, *C. chloridaeae*, *Gonizus* sp., *B. brevicornis* from the larvae of *H. armigera* was observed from August second week to November second week. The peak parasitization of *C. chloridaeae* was observed during the first fortnight of October (32.5%). *Gonizus* sp. and *B. brevicornis* were observed during the first week of October. Among the four different predators, *Chrysoperla camea* and *Cheilomenes sexmaculata* were predominant. The peak incidence of these predators was noticed during October first week with 0.80 and 0.90 adult per earhead, whereas *Ropalida marginata* and *Vespa tropica haematodes* were active during September fourth week.

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Sorghum [*Sorghum bicolor* (L.) Moench.] is an important cereal food crop of the world. Nearly 75 per cent of the world's sorghum is grown for grain purpose meant for human consumption (Deyoe and Robinson, 1979). Area under sorghum cultivation in the country has remained fairly stable with a productivity of 7.44 q per ha. However, National Research Centre for Sorghum, Hyderabad projects a target of 21.7 million tones by 2020 A.D., which calls for raising the productivity (1200 kg/ha) close to global average.

Grain yield in sorghum has substantially increased with the use of high yielding and management responsive F1 hybrids and varieties. However, these high yielding varieties with higher requirement of fertilizers and difference in maturity have become more susceptible and provide continuous breeding ground for insect pests. Negligence in proper management of these pests, many times, has resulted in complete loss of crop. So far, about 132 species of insect pests have been reported on sorghum (Seshureddy and Davies, 1979).

In recent years, research has provided increasing evidence that substantial yield advantages can be achieved from activity of natural enemies need to be studied in detail under intercropping system with sorghum. Natural enemies are believed to exert very little impact on the population dynamics of the earhead caterpillar. However, explicit instruction for incorporation of these informations in decision making are generally lacking.

MATERIALS AND METHODS

In order to know the activity of natural enemies of *H. armigera*, forty eggs were collected from the field at weekly interval and kept in Petridish in laboratory for observation till the hatching of eggs. The parasitoids emerged from eggs were collected and expressed in per cent parasitization based on total number of eggs collected.

Forty larvae were collected from the field at weekly interval and reared individually in specimen tubes (16 x 2 cm) containing rachis of sorghum earhead. These specimen tubes