

Research Paper :

Efficacy of bioagents and botanical pesticides in the management of sorghum earhead caterpillar

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SUMMARY

In recent years research has been provided that substantial yield advantages can be achieved from bioagents viz., *Nomuraea releyi*, *Bacillus thurengensis*, HaNPV and botanical pesticide (Neem seed kernel extract) were tested against sorghum earhead caterpillar. The larval population of *H. armigera* at five, ten and fifteen days after first and second application indicated that *N. releyi* treatments followed by NSKE were found significantly superior in reducing maximum larval population of 33 and 58 per cent. This may be due to epizootics of fungus which was facilitated by favourable environmental condition. The grain yield levels were directly related with per cent reduction of larval population.

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Key words :

Helicoverpa armigera,
Sorghum bicolor
(L.) *Nomuraea releyi*,
Bacillus thurengensis

Sorghum [*Sorghum bicolor* (L.) Moench.] is an important cereal food crop of the world. Sorghum is grown both during *Kharif* and *Rabi* seasons.

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.

Among different insect pests of sorghum, the earhead caterpillars [*Helicoverpa armigera* (Hubner)] is important. This pest is most important attacking sorghum and is reported to cause as much as 37.11 per cent yield loss in sorghum (Kulkarni *et al.*, 1980).

MATERIALS AND METHODS

The experiment was laid out at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad to test the

efficacy of botanicals and bioagents for the control of earhead caterpillar on sorghum. Sorghum hybrid CSH-5 was sown during *Kharif* 2001 by following package of practices (Anonymous, 1998).

The randomized block design (RBD) was adopted with three replications with nine treatments having individual plot size of 4.0 ± 2.25 cm. Treatments were imposed (I spray), when the crop was at flowering stage (Table 2). Every time twenty five ear heads were randomly selected in each plot for recording the number of larvae per ear head a day before and five, ten and fifteen days after imposing treatments. Second spray was given at twenty days after the first application.

Similar observations were recorded for second spray. The grain yield per plot was recorded and expressed as quintals per hectare.

The data were subjected to analysis of variance (ANOVA) for different dates of observations before and after the application. Per cent reduction in the number of larvae was also worked out. Data on grain yield were analyzed using analysis of variance (ANOVA).

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