

RESEARCH ARTICLE

Estimation of per cent earhead damage and yield loss due to earhead caterpillar, *Helicoverpa armigera* under natural condition on *Kharif* sorghum

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ABSTRACT

Variant cultivars (varieties and hybrids) of sorghum were estimated for per cent earhead damage and yield loss caused by earhead caterpillar, *Helicoverpa armigera*. Within varieties DSV-6 recorded lowest per cent (26.66) earhead damage and high yield of 29.25 q/ha without taking protection. In plots where protection measures were taken with malathion DSV-6 recorded highest (95.0) per cent earhead avoidable damage but DSV-3 recorded highest per cent avoidable yield loss of 27.01. Among hybrids, CSH-14 and CSH-23 recorded lowest and equal (16.66) per cent earhead damage with yield of 36.22 and 37.66 q/ha, respectively in unprotected plots. Whereas in protected plots (malathion 5D), CSH-16 recorded highest (92.6) per cent of earhead avoidable damage but DSV-3 recorded highest per cent avoidable loss of 27.01. If we look out the results, 93.2 per cent of earhead avoidable damage and 17.46 per cent avoidable yield loss was noticed in protected plots over unprotected irrespective of cultivars.

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INTRODUCTION

Among different insect pests of sorghum, the ear head caterpillars viz., *Helicoverpa armigera* (Hubner), *Cryptoblabes gridiella* (Miller) and *Euproctis subnotata* (Walker) and *Stenochroia elongella* are important species. As these caterpillar pests damage the crop during earhead stage, a considerable amount of loss is incurred.

One of the earliest records of earhead caterpillar occurring on sorghum was by Mally (1893), who observed larva of *H. armigera* feeding on the milky and developing grains of sorghum. *H. armigera* is one of the most important earhead pests reported to cause as much as 37.11 per cent yield loss in sorghum (Kulkarni *et al.*, 1980).

The earhead caterpillar, *H. armigera* originally a pest of pigeonpea, now firmly established as a 'major pest' of many other crops. Being polyphagous and cosmopolitan pest, this

noctuid feeds on variety of host plants. Mote and Murthy (1989) reported losses of 665 kg per ha (14.51%) in CSH-9 and 518 kg per ha (12.87%) in CSH-5 as recorded by *Helicoverpa armigera*. The overall loss for the two crops was 592 kg per ha (13.72%). Hence, attempt had been made to know the per cent earhead damage caused by *H. armigera* in protected and unprotected plots under natural conditions.

MATERIALS AND METHODS

A field trial was conducted to know the effectiveness of protection of sorghum crop over unprotection in terms of per cent earhead damage and to assess yield loss under natural condition due to earhead caterpillar, *H. armigera* during *Kharif* season sown on 9th July, 2010 in the black soils of Main Agricultural Research Station, Dharwad. The design followed was two factor randomized complete block design (RBD). Two