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Screening of chickpea genotypes against pod borer, *Helicoverpa armigera* (Hubner) under field and in laboratory conditions

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Abstract

A trial was conducted to evaluate different varieties for their response to the attack of gram pod borer. Total of 12 varieties were screened and their percent pod damage and yield was observed. From the data it was observed that variety BG-1069 gave highest yield and least damage. Whereas the variety BG-1005 showed highest damage and lowest yield.

Keywords: Chickpea, screening, pod borer, *Helicoverpa armigera* (Hub.)

Introduction

Chick pea is attacked by more than 36 species of insects in India (Nayar *et al.* 1982) [2]. Among the different pests the gram pod borer *Helicoverpa armigera* (Hub.) is the major pest of gram which attack the crop from seedling to harvesting and causes severe yield loss (Bhatnagar *et al.* 1981; Lal *et al.* 1984) [1]. Use of plant varieties relatively less susceptible to insect attack could help in reducing the seriousness of the pest problem. Taking into consideration this aspect this experiment was conducted.

Material and methods

A trial was laid out in randomized block design at research farm of Department of Entomology, Indira Gandhi Agricultural University, Raipur for the screening of 12 varieties. Each variety was replicated thrice. The plot size was kept at 4mX3m size and the row to row and plant to plant distances were maintained at 30cmX10cm, respectively. Fertilizer application and other agronomic practices were done as per University recommendations. The observations were recorded by selecting five plants randomly from each plot. The total number of pods and damaged pods were counted before harvesting to estimate the percent pod damage.

The data so obtained was subjected to suitable transformation for statistical analysis and then used for interpretation of results.

Table 1: Field screening of chickpea cultivars against *Helicoverpa armigera*

Sr. No.	Cultivars	% Pod damage	Yield Kg/ha.
1	BG-1005	15.49(3.95)	1166
2	BG-1008	14.06(3.81)	1860
3	BG-1039	10.69(3.61)	1916
4	BG-1040	12.94(3.66)	1666
5	BG-1041	13.70(3.71)	1805
6	BGD-78	13.10(3.65)	1444
7	BGD-79	15.65(3.96)	1375
8	GL-2162	14.81(3.90)	1416
9	GL-2165	14.43(3.88)	1305
10	GBG-1026	13.99(3.75)	1333
11	GNG-1028	14.26(3.81)	1416
12	RSG-553	14.22(3.80)	1691
	SE	3.66	164
	CD	N.S.	493

Figures in parenthesis are corresponding square root transformed values.

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Results and Discussion

It was observed that pod damage recorded in all varieties was similar statistically, although the highest pod damage was recorded in variety BGD-79 i.e (15.65%) closely followed by variety BG-1005 while the variety BG-1039 recorded least pod damage (10.69%).

The observations before harvesting showed that the per cent pod damage ranged between 10.69 per cent to 15.65 per cent which was shown by Cv. BG1039 and Cv. BGD-79, respectively. This was supported by the highest 1916 kg yield per hectare in Cv. BG-1039 and the lowest yield of 1166 kg per hectare in Cv. BG-1005, respectively.

The percentage pod damage and the grain yield resulted in a negative correlation.

These findings are in confirmation with those reported by Patnaik, *et al.* (1985) ^[3], Singh, B and Yadav, R.P. (1999) ^[6], Sharma, H. C. *et al.* (2003) ^[5] as well as Ramegowda *et al.* (2007) ^[4].

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