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Field Evaluation of Elite Pigeonpea Genotypes Against Pod Borer (*Helicoverpa armigera*)

Key words : Pigeonpea, Pod Borer

Pigeonpea pea is an important pluse crop of India. Lal and Katti (1997) reported that, pod borer (*Helicoverpa armigera*) is the most serious pest causing 80-90% damage to pigeon pea. The present study aims at screening pigeonpea genotypes against *Helicoverpa armigera* to identify resistant sources.

The trial was conducted with twenty four pigeonpea genotypes at Agricultural Research Station, Tandur during *kharif* 2008, in randomized block design with three replications. Each entry was sown in a 20 m^2 plot at intra- and inter-row spacing of 100 cm and 20 cm. All the recommended package of practices were followed but, no plant protection measures were adopted. Observations on pod borer incidence *i.e.,* egg and larval counts were taken on 5 randomly selected plants at 3 days and 10 days after flowering. Per cent pod damage by pod borer was assessed on pods from five randomly selected plants from each plot at the time of harvest. The data were subjected to statistical analysis.

The data recorded on incidence of *Helicoverpa armigera* and seed yield presented in Table 1 indicated that oviposition by *Helicoverpa armigera* ranged from 11-77 eggs at 3 days after flowering. Among the genotypess 909 recorded lowest number of eggs while ENT 11 recorded maximum number of eggs. The number of larvae ranged from 2 to 35 at 3 days after flowering. Subsequently the entry 909 recorded least number of larvae while ENT 11 recorded highest number. At 10 days after flowering, least number of eggs (28 eggs per inflorescence) were recroded in the genotype ENT 11, while Asha recorded highest number of eggs per inflorescence (121 eggs).

Observations on per cent pod damage indicated that all the genotypes recorded less than 14 per cent pod damage due to pod borer attack. The per cent pod damage was least in the entry 77303 (2.23%), which showed more resistance compared to resistant check ICPL 332 wr (7.90%) and local check Nallakandi(7%). Highest per cent pod damage was observed in 4985-4 (3.77) which is statistically on par with 4989-7 (4.60%). Among other entries, 84060 (3.90%) and 4985-1 (7.43%) showed comparatively less incidence of pod borer and these two are statistically on par with each other.

The genotype 4978-5 recorded *Helicoverpa armigera* incidence to an extent of 11 eggs per inflorescence at 3 days after flowering and 42 at 10 days after flowering. The larval count was 3 at 3 days after flowering and 17 at 10 days after flowering. However, the per cent pod damage in this genotype is zero indicating the non-preference of the pest towards this entry. The genotype 7035 showed highest egg and larval incidence as this is vegetable type with succulent leaves, large attractive flowers with large pods and bold seeds, the plant type mostly preferred by the pest for oviposition and feeding habits. Consequently this genotype also recorded significantly less seed yield of 300 kg ha^{-1} when compared to the highest yielding entry *viz.,* 4985-1 (1033 kg ha^{-1}).

The check variety, Asha, recorded highest number of eggs and larvae per inflorescence indicating its susceptibility towards this pest. Inspite of higher pest incidence this variety recorded significantly higher seed yield (943 kg ha^{-1}) indicating the compensatory mechanism of this entry for obtaining stabilized yields. Bhat *et al.,* (1989), Mandal (2005), Srivastava and Sehgal (2005) and Malathi (2006) reported significant variability in the extent of pest infestation in pigeonpea.

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Table. Response of pigeonpea genotypes for pod borer resistance.

Entry	Days to 50% Flowering	Eggs per inflorescence		Larvae per inflorescence		Pod damage %	Seed yield (kg ha^{-1})
		3 DAF	10 DAF	3 DAF	10 DAF		
7035	110	25 (30.1)	121	10(17.8)	40 (39.2)	13.13 (21.1)	300
10531	120	11 (18.9)	89	2(8.7)	20 (26.3)	6.57 (14.3)	816
13198	112	19 (25.7)	70	6 (13.7)	25 (29.8)	3.13 (10.1)	666
4978-5	119	11 (18.9)	42	3 (9.8)	17 (23.8)	0.00 (0.0)	740
4979-2	122	22 (27.6)	45	6 (14.0)	20 (26.2)	5.57 (13.5)	666
4985-1	111	23 (28.7)	81	6 (14.5)	29 (32.4)	7.43 (15.5)	690
4985-4	119	29 (31.7)	62	10 (18.0)	19 (25.7)	3.77 (11.1)	1033
4985-10	124	25 (29.1)	59	10 (17.8)	22 (27.6)	2.93 (9.6)	633
4985-11	117	62 (52.5)	101	20 (25.9)	28 (37.6)	4.53 (11.8)	603
4989-7	127	24 (28.4)	45	8 (16.1)	16 (23.1)	4.60 (12.0)	523
909	101	33 (35.1)	63	13 (20.9)	14 (21.9)	2.53 (9.1)	863
20036	107	32 (34.0)	60	14 (21.5)	18 (24.7)	3.50 (10.6)	753
20062	124	37 (37.1)	73	17 (23.7)	14 (21.2)	5.10 (12.9)	596
84060	124	50 (44.7)	95	22 (27.9)	26 (30.2)	3.90 (11.2)	740
85063	129	47 (43.0)	86	21 (27.4)	26 (30.4)	4.17 (11.5)	456
87089	123	65 (54.0)	129	29 (32.7)	25 (29.6)	6.67 (14.6)	710
97253	132	46 (42.7)	94	17 (23.9)	21 (27.0)	3.40 (10.3)	673
98008	96	40 (39.0)	51	16 (23.5)	17 (24.5)	5.30 (13.2)	223
77303	116	53 (46.5)	98	28 (31.3)	32 (34.0)	9.67 (17.6)	456
PPE-45-2	115	29 (32.4)	53	9 (17.3)	21 (26.6)	2.87 (9.7)	790
ENT 11	104	20 (26.4)	28	7 (15.1)	10 (18.2)	2.23 (8.0)	393
332	114	26 (30.2)	51	11 (19.1)	16 (23.3)	7.90 (16.1)	633
ASHA	131	77 (61.5)	121	35 (35.9)	26 (30.1)	4 (11.0)	943
NK	94	43 (40.8)	85	20 (26.5)	18 (25.2)	7 (14.3)	470
CD	8.63	13.14	1.81	8.2	8.102	4.56	154.2
CV (%)	4.6	22.32	12.99	23.9	18.0	22.94	1.78

* = The figures in parentheses denote angular transformed values.

DAF = Days after flowering

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