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Screening Pigeonpea Genotypes against Gram Pod Borer *(Helicoverpa armigera)* in Warangal, Andhra Pradesh

Key words : *Helicoverpa armigera*, Pigeonpea Genotypes, Screening, Resistance

Pigeonpea (*Cajanus cajan*) is an important pulse crop of Andhra Pradesh. Pod borer (*Helicoverpa armigera*) and pod fly (*Melanagromyza obtusa*) are the most serious pests causing 80-90% damage in pigeonpea (Lal and Katti, 1997). Effective management of these pests is essential to realize high yield. Growing insect resistant varieties is an important strategy to minimize economic losses caused due to these pests. Several workers screened different genotypes of pigeonpea for resistance against pod borer (Mali and Patil, 1994; Ekshinge *et al*., 1996; Mandal, 2005 and Malathi, 2006;). Information on resistance of certain newly developed cultures against pod borer is lacking. Hence, the present experiment was conducted at Agricultural Research Station, Warangal during *kharif*, 2004.

Seven entries of pigeonpea *viz*., ICP-96053, JKM-198, IPA-15F, JKM-186, WRG-27, ICP-8863 and WRG-53 were sown in a randomized block design with three replications each in 14.4 m^2. plots with 90 cm inter-row spacing and 20 cm intra-row spacing. The soil was clay loam in texture. The crop was grown following all the recommended package of practices under rainfed conditions. No palnt protection measures were followed. The incidence of pod borer, *H. armigera* was monitored from flower bud initiation during peak infestation and at harvest. Number of eggs and larvae were recorded on five randomly selected plants in each plot during third week of November and December, respectively. Pod damage was recorded from 5 plants. Seed yield $plot^{-1}$ was recorded at the time of harvest. The per cent pod damages were transformed values ($\sqrt{X}$)for statistical analyses.

Oviposition, larval incidence of *H. armigera* and pod damage was variable among different test genotypes (Table). Oviposition ranged from 0.93 to 3.20 eggs $plant^{-1}$ while larval abundance ranged between 0.73 to 2.47 larvae $plant^{-1}$. Maximum oviposition was observed in ICP-8863 followed by IPA-15F which were at par with each other. WRG-53, IPA-15F and JKM-186 harboured large number of larvae $plant^{-1}$.

The genotype JKM-198 recorded least number of eggs (0.93) and larvae (0.73) $plant^{-1}$. The pod damage among the seven test entries ranged between 11.23 and 16.05%. The differences among the entries with respect to pod damage were significant, though marginal. Significantly lowest pod damage of 11.23% was recorded in WRG-27 and ICP-96053 (11.92%). Pod damage was at par in all other entries (14.92 to 16.05%). Among the entries, WRG-53 recorded significantly high yield of 1164 kg ha^{-1} followed by WRG-27 (1146 kg ha^{-1}) which is at par with WRG-53. Even JKM-198 which gave yield of 1017 kg ha^{-1} is equivalent to these two entries.

The results revealed that JKM-198 recorded low oviposition and lower larval load at peak flowering and pod development stage, respectively and also yielded at par with the highest yielders *viz*., WRG-53 and WRG-27. The entry WRG-27, though recorded moderate egg load and larval abundance, showed least pod damage of 11.23% and gave high yield of 1146 kg ha^{-1}. The entry, ICP-96053, though recorded lower egg load, moderate larval abundance, lowest pod damage gave yield (768 kg ha^{-1}) which is lower than WRG-53, WRG-27 and JKM-198. The entry WRG-53, though recorded relatively higher oviposition, larval incidence and pod damage, gave significantly superior yield (1164 kg ha^{-1}). These differences could be due to differences in crop phenology and differential insect host interactions.

The study indicated that WRG-27 suffered least pod damage from *H. armigera* and gave higher yield and can be recommended against pod borer. The entries WRG-53 and JKM-198 also gave superior yields.

Table. Screening of pigeonpea genotypes against pod borer, (*Helicoverpa armigera*) at Warangal, Andhra Pradesh

Entry	No. of eggs plant^{-1}	No. of larvae plant^{-1}	Per cent pod damage	Yield (kg ha^{-1})
ICP-96053	1.13^{a}	1.27^{b}	11.92 (3.45)^{a}	768^{bc}
JKM-198	0.93^{a}	0.73^{a}	15.87 (3.98)^{b}	1017^{ab}
IPA-15F	2.80^{d}	2.33^{d}	16.05 (4.00)^{b}	598^{cd}
JKM-186	1.47^{ab}	2.00^{cd}	14.92 (3.86)^{b}	797^{bc}
WRG-27	2.07^{bc}	1.53^{bc}	11.23 (3.35)^{a}	1146^{a}
ICP-8863	3.20^{d}	1.80^{c}	15.01 (3.35)^{a}	373^{d}
WRG-53	2.60^{cd}	2.47^{d}	15.58 (3.94)^{b}	1164^{a}
SEm $\pm$	0.22	0.15	0.10	103
CD (5%)	0.67	0.48	0.31	317

* The figures in parentheses are $\sqrt{x}$ transformations

Figures followed by same letters are not significantly different.

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