

Short Communication

**Heterosis for yield and yield contributing characters in cowpea
[*Vigna unguiculata* (L.) Walp]**

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Considerable success has been achieved in the development of high yielding varieties in cross-pollinated crops by the exploitation of heterosis. Comparatively, the efforts to exploit heterosis in most of the self-pollinated crops like cowpea are meager. The data generated for combining ability analysis through line x tester was used to study the heterosis, to ascertain the possibilities of exploiting heterosis for yield in cowpea either for forage or seed yield.

Four genotypes of cowpea, as line were crossed with six testers in line x tester pattern. The 24 hybrids along with 10 parents (4 lines + 6 testers) and standard check (Pusa Komal) were grown in randomized block design with three replications during *Kharif*, 2001. Each treatment consisted of a single row of 4.5 m length accommodating 30 plants in a row with 15 cm distance within the row and 45 cm distance was kept between the rows. The observations were recorded on five randomly selected plants of each genotype per replication for eight quantitative traits *viz*, days to maturity, plant height (cm), number of branches per plant, pod length (cm), number of pods per plant, number of seeds per pod, test weight (g) and grain yield per plant (g). Heterosis over mid parent

(MP), better parent (BP) and standard check (SC) were calculated by following method suggested by Rai (1979).

The range of means for parents and hybrids, range of heterosis over better parent for yield and other component traits are presented in Table 1. Among the females NSP-27 (81.6 days) and among males Konkan Sadabahar (62 days) was the early to mature. Manjarkheda local x Konkan Sadabahar was the early maturing (73.3 days) cross in the hybrids. Among the females Manjarkheda local and among males IC 201097 were taller than others; whereas among the crosses Manjarkheda local x IC 201097 and Manjarkheda local x GC 10 were taller than others. The female Manjarkheda local (8.2) and the male IC 201097 (6.7) recorded more number of branches per plant however, the cross VWB 4 x IC 201081(9.2) was having more branches per plant among the hybrids. The female NSP 27 (28.06) and the male GC 10 (19.4) were having more number of pods per plant and the cross NSP 27 x IC 201097 (26.2) produced more number of pods per plant in hybrids. Among the females Manjarkheda local (39.3 cm) and G1 (15.5 cm) in the males were having more pod length. The cross Manjarkheda local x Konkan Sadabahar (41.46 cm) was

Table 1 : Range of mean and heterosis for yield and yield contributing characters in cowpea

S. No.	Characters	Mean performance							Heterosis over better parent		
		Range			Mean		SEm ±	CD at 5%	Range	SEm ±	CD at 5%
		Females	Males	Hybrids	Parents	Hybrids					
1	Days to maturity	81.6-90.66	62.0-89.0	73.3-89.0	76.93	82.15	0.94	2.65	-16.35-5.53	2.30	4.60
2	Plant height (cm)	80.6-181.1	29.3-62.8	61.3-192.7	75.59	106.24	2.28	6.44	-67.29-6.36	5.59	11.16
3	No. of branches per plant	5.7-8.2	5.3-6.7	4.2-9.2	6.33	6.79	0.36	1.02	-49.19-54.44	0.89	1.78
4	No. of pods per plant	13.5-28.0	12.7-19.4	13.2-26.2	16.55	18.33	0.94	2.66	-52.73-41.47	2.31	4.61
5	Pod length (cm)	13.1-39.3	10.-15.5	13.3-41.4	17.40	22.15	0.46	1.32	-63.38-26.65	1.14	2.29
6	No. of seeds per pod	9.6-13.0	9.3-14.6	10.7-21.53	12.21	15.29	0.61	1.73	-25.11-111.72	1.50	3.0
7	Test weight (g)	6.8-16.9	7.9-13.2	6.6-17.0	11.51	12.85	0.24	0.68	-58.58-7.35	0.59	1.18
8	Seed yield per plant (g)	20.1-28.6	9.3-26.7	14.4-58.3	21.18	33.98	0.97	2.76	-36.55-103.41	2.39	4.78

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