

GUJARATH COWPEA 2 (CHHARODI 1) - AN IDEAL COWPEA VARIETY FOR INTERCROPPING IN COCONUT GARDEN

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Abstract: Comparative yield trials were conducted with nine varieties of cowpea for three years during kharif in the interspaces of coconut garden at the Instructional Farm, Vellayani. Based on the comparative yield trials' result, Gujarath Cowpea 2 (Chharodi 1) variety of cowpea was selected and advanced to farm trial at seven locations in Thiruvananthapuram district during kharif 1989 along with C 152 and local variety. The variety Gujarath Cowpea 2 (Chharodi 1), which recorded a highest grain yield in farm trials was recommended for cultivation in the interspaces of coconut garden in Thiruvananthapuram district during kharif.

INTRODUCTION

Cowpea, the most important grain legume of Kerala occupies about 75 per cent of the cultivated area under pulses, i.e., 28500 ha (Anon., 1985). The requirement of pulses at the rate of 15g per day for 28 million people is about 153000 tonnes. But the annual production is only 21000 tonnes. The wide gap between production and the requirement has to be bridged by increasing production. The non-availability of a variety suited to partially shaded conditions in coconut garden is the most important constraint in the popularisation of cowpea cultivation in coconut gardens during kharif. Therefore, research programmes were initiated in the Department of Plant Breeding under the NARP (SR), College of Agriculture, Vellayani during 1983, for identifying varieties suited to partially shaded conditions in coconut gardens and to increase the production of cowpea.

MATERIALS AND METHODS

The materials consisted of nine cowpea entries viz., V 26, C 152, NRPC 2, NRPC 3, Gujarath Cowpea 2 (Chharodi 1), Co 4, HG 171, V 240 and S 488. The comparative yield trials were conducted in the interspaces of coconut garden with nine entries in an RBD with three

replications during kharif at the Instructional Farm, Vellayani for three years (1986 to 1988). The cultural and manurial practices were done as per package of practices recommendations of the Kerala Agricultural University (Anon., 1986). From each plot, a random sample of five plants was selected for recording plant height, number of branches and number of pods. In addition to the above, duration up to maturity, 100 grain weight and grain yield were recorded. Data collected were subjected to analysis of variance for each year and the pooled analysis, following Panse and Sukhatme (1978).

RESULTS AND DISCUSSION

The mean data on grain yield and other biometric characters are presented in Table 1. The analysis of the data for each year revealed that in all the three years varieties differed significantly in respect of grain yield, and the variety Gujarath Cowpea 2 (Chharodi 1) recorded the maximum. In 1986, the Gujarath Cowpea 2 (Chharodi 1) recorded a grain yield of 256 kg/ha and was on par with C 152 and Co 4. In 1987, Gujarath Cowpea 2 (Chharodi 1) recorded an yield of 228 kg/ha and was on par with V 26, C 152, Co 4, NRPC 2 and HG 171. In 1988 also, Gujarath Cowpea 2 (Chharodi 1) recorded the highest yield of 639 kg/ha and was on par with C 152. The

Table 1. Grain yield (kg/ha), plant height (cm), number of branches, number of pods, duration up to maturity and 100-grain weight (g) in comparative trials at the College of Agriculture, Vellayani

Variety	Grain yield (kg/ha)				Plant height (cm)	Branches/plant	Pods/plant	Duration up to maturity	100-grain weight (g)
	1986	1987	1988	Pooled mean					
V 26	212	193	356	254	65.9	3.0	6.1	78.6	10.5
C 152	222	198	614	345	65.4	3.0	6.1	81.6	10.4
NPRC 2	143	192	261	197	63.4	2.3	6.0	80.5	11.1
NPRC 3	97	154	381	211	67.5	2.6	7.6	80.5	10.5
Gujarath Cowpea 2 (Chharodi 1)	250	228	639	372	60.0	2.7	10.8	76.1	5.1
Co 4	234	211	389	278	67.7	3.0	5.7	84.2	10.4
HG 171	111	191	506	269	66.6	3.1	6.1	81.4	11.7
V 240	101	136	486	241	68.1	2.5	5.2	83.8	11.4
S 488	91	170	425	229	65.0	2.6	5.2	84.8	11.3
CD (0.05)	34.4	52.2	93.6						

Table 2. Grain yield (kg/ha), duration (days) and number of pickings of grain cowpea under partial shade coconut garden, in farm trials during 1989 kharif

Sl. No.	Subdivision/ location	Grain yield (kg/ha)			Duration up to last harvest			Number of pickings		
		Gujarath-Cowpea 2 (Chharodi 1)	C-152	Local	Gujarath-Cowpea (Chharodi 1)	C-152	Local	Gujarath Cowpea (Chharodi 1)	C-152	Local
Attingal Subdivision										
1.	Attipra	475	200	425	77	82	87	2	4	3
2.	Kadinamkulam	325	125	325	77	92	77	2	3	2
3.	Pothankode	475	150	400	74	84	77	2	4	2
Nedumangad Subdivision										
4.	Chettivilakom	300	275	262	75	81	81	2	4	3
5.	Kuttichal	267	100	67	74	87	94	2	3	4
Neyyattinkara Subdivision										
6.	Virali	90	70	25	70	85	93	2	3	2
7.	Instructional farm, Vellayani	525	425	400	63	71	64	2	4	3
Mean		351	192	272	73	83	82	2.0	3.6	2.7

pooled analysis of the data for three years revealed that varieties and variety x year interaction were significant. The maximum pooled mean yield was recorded by Gujarath Cowpea 2 (Chharodi 1) (372 kg/ha). The plant height was maximum in V 240 (68.1 cm), followed by Co 4 (67.7 cm). The number of branches was maximum in HG 171 (3.1). The 100-grain weight was also maximum in HG 171 (11.7 g), followed by V 240 (11.4 g). Even though Gujarath Cowpea 2 (Chharodi 1) recorded low value for plant height, number of branches and 100-grain weight, the higher productivity recorded was due to more pods per plant (10.8). Moreover, it is early in maturity than the other varieties (76.1 days).

Based on consistency in performance and superiority in yield, Gujarath Cowpea 2 (Chharodi 1) was advanced to farm trials. The farm trials were conducted with Gujarath Cowpea 2 (Chharodi 1), C 152 and local variety during 1989 kharif. Six farmers were selected from three Agricultural Sub-divisions of Thiruvananthapuram district. The seeds of three varieties were sown in 20 m² plots in the interspaces of coconut garden. In addition to the above, one trial was conducted at the Instructional Farm, Vellayani. The data on grain yield, duration and number of pickings were recorded. Results of the farm trials are presented in Table 2. In all the locations, Gujarath Cowpea 2 (Chharodi 1) recorded maximum yield. The mean yield of Gujarath Cowpea 2 (Chharodi 1) was 351 kg/ha, while that of

the popular variety C 152 was 192 kg/ha and the local variety 272 kg/ha. The variety Gujarath Cowpea 2 (Chharodi 1) recorded 29 per cent increase in grain yield over local variety and 89 per cent over C 152. Moreover, Gujarath Cowpea 2 (Chharodi 1) was ten days earlier in maturity (73 days) and required only two pickings as compared to 2.7 in local variety and 3.6 in C 152. Based on higher productivity, earliness and synchronous maturity, the variety Gujarath Cowpea 2 (Chharodi 1) was recommended for cultivation in Thiruvananthapuram district during kharif in the interspace of coconut garden under partial shade.

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