

## PTB—1 (KANAKAMANI) A HIGH YIELDING VARIETY OF COWPEA

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In Kerala pulses are grown to an extent of 37485 hectares. The average production of pulses in Kerala is the lowest among the Indian States. Lack of locally adopted high yielding varieties is one of the major reasons for this low pulses production. During the Kharif season cowpea is grown either as a pure crop in garden lands or as an intercrop in coconut gardens in Kerala. In Rabi and summer seasons it is grown in rice fallows immediately after the harvest of the rice crop utilising the available moisture left in the field.

Research on Cowpea to evolve a high yielding locally adopted dual purpose variety suitable for cultivation during Kharif season was initiated at Rice Research Station, Pattambi during 1974—75. This was continued for three years and concluded. The present paper reports the results obtained from this experiment.

### Materials and Methods

Four varieties of Cowpea viz. New Era, Pusa Phalguni, Pusa DofasIE and Pusa Bursati released by the Central Varietal Release Committee and two cultures viz. P-118 produced at IARI Regional Station, Pusa and 'Kunnamkulam local' a type isolated at Rice Research Station, Pattambi were compared in Randomised Block Design with three replications. The seeds were sown by dibbling in lines with a spacing of 30 cm between rows and 20 cm between plants in plots of 3 x 2m size. Nitrogen, phosphorus and potash at the rate of 10:30:10 Kg/ha were given as basal dressing and 10Kg nitrogen/hectare as 2% urea spray as top dress after 20 days of sowing. Lime (CaO) at the rate of 300 Kg/ha, was broadcasted with last ploughing. The crop was purely rainfed. Plant protection measures were adopted as and when found necessary. Observations on flowering duration, total duration, number of fruiting branches per plant, number of pods per plant, length of pods, number of grains per pod; 1000 grain weight and yield of grains in Kg/ha were recorded. Fifteen plants were selected at random from each plot for taking observations. For calculating the length of pods and number of grains per pod twenty-five pods were selected. Statistical analysis was undertaken season wise and a pooled analysis for three years was also done.

## Results and Discussion

Date on yield and yield components viz., number of fruiting branches per plant, number of pods per plants, length of pods, number of grains per pod and 1000 grain weight are presented in Table - 1.

It is seen that in the first year the culture Kunnamkulam local recorded the highest yield of 252 Kg/ha, though the yield differences between varieties were not statistically significant. During the second year Kunnamkulam local again recorded the highest yield of 1197 Kg/ha which was significantly superior over New Era, Pusa Dofasli, Pusa Phalguni and Pusa Barsati. In 1976-77 the culture P-118 recorded the highest yield of 868 Kg/ha which was on par with Kunnamkulam local.

In the pooled analysis of three years' yield data, the varieties showed significant differences. The two cultures Kunnamkulam local and P-118 were found to be distinctly superior to the rest of the varieties in mean yield per hectare. The culture Kunnamkulam local recorded the highest mean yield of 758 Kg/ha followed by P-118 with 650 Kg/ha. However, the yield difference between these two varieties was not significant.

It is evident that the number of fruiting branches per plant were highest in Pusa Phalguni and lowest in Pusa Barsati. The number of pods were also maximum in Pusa Phalguni. The longest pod was produced by Pusa Barsati. The highest number of grains per pod was produced by New Era, while the heaviest seed was that of the variety P-118. With regard to number of fruiting branches, no. of pods produced per plant, length of pods, no. of grains per pod and 1000 grain weight the Kunnamkulam local was fourth, sixth, second, third and second respectively. Eventhough New Era produced higher no. of pods per plant and no. of seeds per pod and nearly equal test weight of seeds when compared 10 Kunnamkulam local, the final seed yield was less. This was due to longer duration of this variety to complete the entire growth period when compared to other varieties tested. The further harvest was found uneconomical in New Era and hence were not included in the study.

Eventhough the number of pods per plant was higher in Pusa Phalguni and Pusa Dofasli, the reason for low yield was due to the lower number of grains per pod coupled with a markedly lower test weight. In Pusa Barsati eventhough the number of pods per plant and grains per pod were fairly high, the low yield can be attributed to the low test weight. P-118 was observed to produce less number of grains per pod. But the high yield obtained is due to more number of pods per plant coupled with the highest test weight observed.

Table 1 Yield, yield attributes, flowering duration, total duration and per day yield

Varieties	Yield (kg/ha)			Yield attributes (Mean of 3 year)									
	1974-75	1975-76	1976-77	Podded yield (mean of 3 years)	No. of fruiting branches per plant	No. of pods per plant	Length of pods (cm)	No of seeds per pod	100 g dry weight (g)	Days taken for first flowering (mean of 3 years)	Days taken for 50% flowering (mean of 3 years)	Total duration (mean of 3 years)	Per day yield kg/ha (mean of 3 years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
New B	102	725	181	336	9.30	5.25	17.85	18.00	102.02	55	61	89	3.78
Pusa D fasli	81	411	514	352	3.88	7.25	15.90	14.25	73.83	40	47	76	4.63
Pusa D fasli	156	525	428	369	4.73	9.00	14.35	12.78	75.38	37	43	86	4.80
M.S.B. ati	101	536	802	479	2.98	5.50	15.3	17.50	97.67	41	49	85	5.64
M.S.B. ati	161	922	868	650	3.38	4.75	17.85	12.75	146.87	40	45	75	8.67
Kannan kulam loola	252	1175	853	768	3.8	4.50	18.0	17.00	105.07	44	49	84	9.14
L. S. D. (5%)	N.S.	270	300	130	..	..	..	..	..	..	..	..	..

It is evident that P-118, Pusa Phalguni and Pusa Dofasli are the three early flowering short duration varieties. New Era was the longest in duration. The per day productivity was maximum in Kunnankulam local followed by P-118. The culture Kunnankulam local showed consistently higher yield during different years. Taking into consideration of its high local adaptability and dual purpose nature (vegetable and grain), this variety was released for large scale cultivation during December 1977 under the name "Kanakamani" (Ptb-1). Incidentally this is the first variety of pulse to be released from Kerala,

This new dual purpose cowpea variety definitely have immense potentialities for cultivation as an intercrop in coconut gardens and as a pure crop in garden lands and homesteads during Kharif (Virippu) season in Kerala.

### Summary

Comparative yield trial of four varieties and two improved cultures of Cowpea was undertaken at Rice Research Station, Pattambi during 1974-75. Kharif season onwards with a view to isolating and releasing high yielding varieties suitable to Kerala condition. This was continued for three years. The consistently highest yielder Kunnankulam local was recommended for release for general cultivation in Kerala during December 1977 under the popular name "Kanakamani".

### സംഗ്രഹം

കേരളത്തിനു യോജിച്ചതും rawച്ചിങ്ങാപ്പയറായും ഉണക്കപ്പയറായും ഉപയോഗിക്കാൻ പാറിയതും അത്യല്പാദനശേഷിയുള്ളതുമായ ഒരു വൻപയറിനും കണ്ടെത്തുന്നതിനായി 1974-75 മുതൽ പട്ടാമ്പി റൈസ് ഗവേഷണകേന്ദ്രത്തിൽ ഒരു പഠനം നടത്തി. ഈ പഠനത്തിൽ നിന്നും മികച്ച വിളവ് നൽകുന്നതായി കണ്ടു കുന്നംകുറു പ്രദേശത്തു rolrmao ശേഖരിച്ച് "ശുദ്ധനിർമ്മാണം" സസ്യപ്രജനന സമ്പ്രദായത്താൽ ഉരുത്തിരിച്ചെടുത്ത ഒരു വൻപയറിനുമായിരുന്നു, ഈ അത്യല്പാദനശേഷിയുള്ള ഇനം "കനകമണി" എന്ന പേരിൽ വൻതോതിൽ കൃഷിചെയ്യുന്നതിലേക്ക് 1977 ഡിസംബർ മാസം പ്രകാശനം ചെയ്യുകയുണ്ടായി.

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