

## CO 3 Cowpea (*Vigna sinensis* L. Savi) – A High Yielding Medium Duration Variety for Tamil Nadu

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A high yielding selection PLS 25 isolated from germplasm was released as an improved variety, cowpea CO 3. It is a medium duration (80 days) semi-erect type with less trailing habit. The seeds are light brown uniform coloured with bold size. Under irrigation it gives an average yield of 1,086 kg of grain/ha with per day productivity of 13.6 kg and under rainfed conditions it gives 829 kg/ha with per day productivity of 10.4 kg.

Cowpea (*Vigna sinensis* L. Savi) is a popular pulse crop in Tamil Nadu which is grown as a mixed crop with millets and cotton and also as a pure crop under rainfed conditions. The earlier breeding work has resulted in the release of two strains viz., CO 1 and CO 2. Of these two, the former is a dryland variety grown exclusively for its grain (Veeraswamy *et al.*, 1972), while the latter is a dual purpose variety suited both for irrigated and rainfed conditions (Mahudeswaran *et al.*, 1973). Although CO 2 is a popular vegetable type, since the seeds are mottled in colour, the consumers' preference for its grain was not as expected. Hence, breeding was focussed on the evolution of buff, uniform coloured, high yielding grain type with medium duration and semi-erect plant habit. Concerted efforts in this direction has resulted in the isolation of a new grain type variety.

### MATERIAL AND METHODS

The germplasm comprising of both extra and intra-state origin were criti-

cally evaluated. By intensive screening, a selection, PLS 25, was isolated for its semi-erect nature, medium duration and light brown coloured seed with high yield potential. Its comparative performance with the existing medium duration standard variety CO 2 was assessed over nine seasons from 1974 to 1978 at Tamil Nadu Agricultural University, Coimbatore. Simultaneously, its efficacy was assessed both at University Research Stations and at farmers holdings under irrigated as well as rainfed conditions. At University Research Stations a total of nine trials, of which 4 under irrigated and 5 under rainfed conditions, were conducted. In the multilocation tests, 25 and 20 trials were conducted under irrigated and rainfed conditions respectively.

### RESULTS AND DISCUSSION

The overall performance of this new selection PLS 25 compared with CO 2 under various trials is presented in Table I and its elite features in Table II. The results indicated that PLS 25 is

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TABLE I Overall Performance of PLS 25 and Co 2 (Check) (1974-78)

Particulars	Condition of the trial	No. of trials conducted	Yield (kg/ha)						Overall percentage increase over standard CO 2
			Irrigated		Rainfed		Percentage increase over CO. 2		
			PLS 25	Co 2	PLS 25	Co 2	Irrigated	Rainfed	
In the TNAU Main Campus	Irrigated	9	856	736	—	—	16	—	16
In the University Research Stations	Irrigated	4	1288	1063	—	—	21	—	21
	Rainfed	5	—	—	703	597	—	18	18
In the farmer's holdings	Irrigated	25	1115	1014	—	—	10	—	10
	Rainfed	20	—	—	955	780	—	22	22
Mean	Irrigated	38	1086	938	—	—	16	—	18
	Rainfed	25	—	—	829	689	—	20	—
Duration (days)	—	—	80	85	80	85	—	—	—
Per day productivity	—	—	13.6	11.0	10.4	8.2	24	27	25

TABLE II Main Features of Selection PLS 25 Compared to CO 2

Characters	PLS 25	CO 2
Plant habit	Erect, less trailing	Bushy, more trailing
Plant height (cm)	45	50
Branches (Mean)	4	4
Clusters/plant (Mean)	8	6
Pods/plant (Mean)	25	20
Seeds/pod (Mean)	12	12
Pod length (cm)	16	20
Single plant yield (gm)	15.1	13.8
100 grain weight (gm)	10.0	12.5
Seed colour	Light brown	Mottled with brown and white batches

superior to CO<sub>2</sub> by recording as an average yield of 1,086 kg/ha under irrigation compared to 938 kg recorded by the standard, CO<sub>2</sub>, which represents an yield increase of 16 per cent. Under rainfed conditions, it yielded 829 kg/ha while CO<sub>2</sub> recorded an yield of 689 kg. The yield increase under rainfed condition was 20 per cent. In calcu-

lating per day production per hectare, this selection recorded 13.6 kg while the standard gave 11.0 kg under irrigation. Under rainfed condition, the per day production for PLS 25 was 10.4 kg while CO<sub>2</sub> gave 8.2 kg only.

The semi-erect nature with less trailing habit makes PLS 25 fit for pure,

mixed and intercropping. The light brown, uniform coloured bold seeds will also enhance its value among the cultivators and consumers. Moreover, this selection is tolerant to die-back and mosaic disease. Considering these benefits, this selection PLS 25 has been released as CO 3 cowpea suitable both for rainfed as well as irrigated culture.

## REFERENCES

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