



Co 11 AVARAI (*Lablab purpureus* var. *typicus* (L.) Sweet) A new short duration photoinsensitive variety for Tamil Nadu

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ABSTRACT

The new variety Co 11 (culture name - CoLt 22) is a hybrid derivative between Co 9 (a bushy type) x white Yanalkathu (a pandal type) with desirable characters like extra early duration (95-100 days), high pod yield with high quality pods coupled with high grain yield. It has recorded an overall mean green pod yield of 9.4 t/ha as against 6.1 t/ha and 5.9 t/ha recorded by Co 9 and Co 10 respectively with percentage increase of 55 over Co 9 and 59 over Co 10. It has recorded the grain yield of 1,115 kg/ha as against 1000 and 938 kg/ha by Co 9 and Co 10 respectively. It was found on par with the pandal type, Co 3 in quality tests.

KEY WORDS: Lab-lab, New variety, Short duration, Photoinsensitive, Pod yield.

Avarai, *Lablab purpureus* var. *typicus* (L.) Sweet, is one of the prominent traditional vegetable pulse crop raised by farmers in almost all parts of Tamil Nadu. It occupies more than 20,000 hectares on a commercial basis in Quaithe-milleth district and in many locations in Coimbatore, Madurai and Tiruchirapalli districts.

This crop is mostly raised in pandals which involves a heavy initial cultivation expenditure for the erection of pandals. Moreover the pandal types are usually longer in duration (240 days) and photoinsensitive in nature. In the past two decades many short duration, bushy, photoinsensitive types (Co 7, Co 8, Co 9 and Co 10) were released from Tamil Nadu Agricultural University, Coimbatore.

Materials and Methods

Artificial cross pollination was effected between two Avarai varieties, Co 9 (bushy type) x white Yanalkathu (pandal type) during the

year 1979 at the School of Genetics, Tamil Nadu Agricultural University, Coimbatore and subsequently the hybrid derivative CoLt 22 was selected during F6 generation. Then, the culture CoLt 22 was evaluated under Preliminary Yield Trial, Comparative Yield Trial, Multilocation Trial and On Farm Trial from 1985 onwards. This culture CoLt 22 is named as Co 11 Avarai and is released during the year 1989.

Results and Discussion

CoLt 22 Avarai was tested for its yield potential (grain and vegetable) only under irrigated condition. It has recorded an overall green pod yield of 9.4 t/ha as against 6.1 t/ha and 5.9 t/ha recorded by Co 9 and Co 10 respectively with percentage increase of 55% over Co 9 and 59% over Co 10 (Table 1).

It has also recorded the grain yield of 1115 kg/ha as compared to 1000 kg and 930 kg recorded by Co 9 and Co 10 respectively. It has ox-

celled Co 9 by 10.6% and Co 10 by 18.8%.

TABLE 1

Mean performance of Avaral culture CoLt 22 over environment and over years (Green Pod Yield Kg/ha)

Trials	CoLt 22	Co 9	Co 10
Station trials	7683	5598	5156
MLT	10559	4752	5281
OFT	9904	7858	7314
Total	28146	18208	17751
Mean	9382	6069	5917
% Increase over control:		55	59

In station trials conducted from 1986-1988 at Pulses breeding station, Coimbatore, It has recorded an average yield of 7.7 t/ha as against 5.6 t/ha and 5.2 t/ha registered by Co 9 and Co 10 respectively. The percentage increase of CoLt 22 over Co 9 and Co 10 was 37% and 49% respectively. In multilocation trials tested at Allynagar, Srivilliputhur and Bhavanisagar, the culture CoLt 22 has recorded 10.6 t green pod/ha as against 4.8 and 5.3 t/ha by Co 9 and Co 10 respectively. The percentage increase ranged from 100-122%. The on farm trials were conducted in three selected belts viz. Pollachi, Dindigul and Nilakkottal during

1987 and 1988. It has recorded an average yield of 9.9 t/ha as against 7.9 t/ha and 7.3 t/ha by Co 9 and Co 10 respectively. The percentage increase over Co 9 and Co 10 was 26 and 35 respectively. The maximum green pod yield of 21.6 t/ha was recorded at Kamalapuram village at Nilakkottal taluk.

Besides high yield It has also shown field tolerance to the major diseases viz., root rot, anthracnose and yellow mosaic virus. It has also shown moderate tolerance to podborer and to some extent to aphids. (Tables 2 & 3).

TABLE 2

Incidence of major diseases on Lablab culture CoLT 22

S.No.	Entries	Mean % Incidence of root rot		Mean % Incidence of Anthracnose		Mean % Incidence of YMV	
		1987	1988	1987	1988	1987	1988
1.	COLT 22	6.2	15.9	15.5	15.5	16.2	0
2.	Co 9	2.1	20.8	12.6	13.2	0	0

3. Co 10	2.7	21.4	24.7	19.1	0	0
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TABLE 3

Incidence of Pod borer on lablab culture CoLT 22

S.No.	Entries	Mean % of incidence		Mean % incidence of Aphid 1987
		1987	1988	
1.	CoLT 22	2.5	11.8	0
2.	Co 9	4.2	15.0	0
3.	Co 10	0.8	13.3	0

The green pods scored the highest value in the palatability test conducted by Food Science department of Tamil Nadu Agricultural University. It excelled the standard checks

Co 9 and Co 10 in colour and appearance, flavour taste and texture of pods. It was found on par with the pandal type Co 3 Yanaikathu. (Table 4).

TABLE 4

Organoleptic evaluation of CoLT 2 (Scores in %)

Characteristics	CoLT 22	Co 9	Co 10	Co 3
Colour and appearance	75.00	57.14	60.71	79.57
Flavour	71.43	57.14	60.71	71.43
Taste	71.43	67.86	60.71	78.57
Texture	67.86	67.86	64.29	82.14
Overall acceptability	85.71	71.43	85.71	92.86
Mean	74.29	64.29	66.43	80.91
Cooking time (in minutes)	9	14	20	11

The crude protein and fibre analysis showed that this culture has high protein content in seed (24.5%) and pod (5%) and low fibre content

of 2% in green pods as compared to checks is 3.4% in Co 9 and 6% in Co 10 (Table 5).

TABLE 5

Protein and fibre content of CoLT 22

S.No.	Variety Culture	Protein %		Fibre (%) Green Pod
		Green Pod	Seed	
1.	CoLT 22	5.00	24.5	2.0
2.	Co 9	4.55	22.0	3.8

3. Co 10 4.46 23.9 6.0

The seed testing analysis for seed size and sieve size showed that this culture has a bold seed with high 100

seed weight of 35.9 g as compared to Co 9 (21.9 g) and Co 10 (16.6 g) (Table 6).

TABLE 6
Seed technology results of CoLT 22

S.No.	Variety Culture	Sieve Size recommended	Seeds retained	Seeds passed	100 Seed weight	Germi nation %
1.	CoLT 22	19/64"Round slove	92.4	7.6	38.46	86
2.	Co 9	18/64"Round sieve	86.9	13.1	25.56	75
3.	Co 10	14/64"Round sieve	82.9	17.1	20.58	78

The cost benefit ratio of Avaral CoLT 22 revealed that a net income of Rs. 15,505 can be obtained by cultivating this culture under irrigated condition with a cost benefit ratio of 1:5.

The key morphological features of CoLT 22 are: Flower colour – Pink, Stem colour – Green with purple wash, Pod – Broad, flat, light green with purple margin, Seed colour – Blackish, brown and bold, Days to 50% flowering – 40-45, Days to maturity – 95-100, Mean No. of seeds/pod – 4.47, Mean pod length – 8.60 cm, pod of breadth – 3.05 cm, Mean No. of green pods/plant – 25.80, Mean green pod yield/plant – 100.12 g, Mean green pod yield – 9382 kg/ha, 100 grain weight – 35.87 g. This culture matures 20 days earlier than the existing check varieties Co 9 and Co 10. By the virtue of its early duration (95-100 days) photoinstitutiveness, high green pod

yield, grain yield, compact plant type with less tendril formation, attractive light green with purple margin flat and broad pods which are free from beany odour, the new avaral culture CoLT 22 will be highly preferred by the consumers and the growers of the state. Hence this new culture was approved by the State Varietal Release Committee as an Improved variety Co 11 during January 1989 for general cultivation throughout Tamil Nadu under irrigated conditions.

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