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CO 12 A SHORT DURATION BUSHY AVARAI VARIETY

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ABSTRACT

An effort to evolve dual purpose variety in lablab through hybridization has resulted in the isolation of the culture CoLT 20, this culture is a hybrid derivative of Co 9 X Co 4 and matures in 100-110 days. This photoinsensitive bushy type culture give 9-7 tons of green tender pods per hectare or 1384 Kg of grains per hectare. Hence, CoLT 20 was released as Co 12 lablab for cultivation in Tamil Nadu.

In *Lablab purpureus* (L.) Sweet, a highly self-fertilised crop, two cultivated botanical forms exist namely variety *typicus,* popularly know as garden lablab or *avarai* and variety *lignosus,* popularly known as the field lablab or *mochai*. Lablab is an important pulse crop in Tamil Nadu and it occupies an area of one lakh hectares mostly cultivated for its vegetable on commercial basis. Hybridization work between variety *lignosus* and *typicus* was commenced as early as 1959 with the objective of evolving dual purpose selections possessing vegetable quality of *typicus* and seed quality of *lignosus* and the variety lablab Co 1 was released in 1968 (Kunjamma and Rajasekharan, 1968). Later, few more short duration, bushy type vegetable lablab strains namely Co 6, Co 7, Co 8 (Veeraswamy *et al.*, 1973) Co 9 (Rangasamy and Annappan, 1978) Co 10 and Co 11 with different pod characteristics were released, for cultivation. Further breeding work through hybridisation involving bushy varieties and trailing types of lablab has resulted in the evolution of novel type strains with better pod qualities.

MATERIALS AND METHODS

Cross pollination was effected between Co 9 bushy (natural mutant of Ms 9867) as female parent and Co 4 (Kitchen garden lablab) as male parent to combine the desirable features of parent Co 9 namely earlyness (120 days). Photoinsensitivity and compact plant type with the characteristics of Co 4 pandal type namely purple pigmentation in plant parts as a marker especially in pods and also its fibrelessness. This hybrid derivative CoLT 20 was isolated in 1984 and the yield of both tender pods and seeds evaluated. Based on the consistant performance, the culture CoLT 20 was selected for large scale testing and forwarded to multilocation trial for testing in the four research stations of Tamil Nadu during the period 1987-89. Onfarms trials were conducted in 30 locations of five lablab growing districts of Tamil Nadu from 1987 to 1990.

RESULTS AND DISCUSSION

CoLT 20, a hybrid derivative of a cross between Co 9 x Co 4 was obtained through pedigree selection and was found promising in its yield performance with desirable pod characteristics. This culture was tested under irrigated condition during summer, *kharif* and *rabi* seasons between 1986 to 89 and in summer '90. It gave a mean green tender pod yield of 9093 Kg/ha while other two flat poded varieties Co 9 and Co 11 which recorded 6712 Kg and 8518 Kg per hectare respectively.

In multilocation trials conducted during 1987-89, CoLT 20 registered a mean tender pod yield of 10499 Kg/ha which was 15.9 and 120.0 per cent increased yield over Co 11 (9059 Kg) and Co 9 (4764 Kg) respectively. The onfarm trials at 30 locations during rabi season between 1987 to 1990 revealed the superiority of CoLT 20 over the check

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Table 1. Performance of lablab culture CoLT 20 under onfarm trials in the taluks. Green pod yield kg/ha.

S.No.	Taluks	No. of trials	CoLT 20	Co 11	Co 9
1.	Pollachi	8	10556	8968	7356
2.	Dindigul	12	8017	8106	6236
3.	Palani	4	1788	1813	1700
4.	Nilakkottai	4	15813	15344	11719
5.	Coimbatore	2	15300	13200	9750
	Overall mean for 30 locations		9395	8781	7838
	Increase over			7%	19.86%

Table 2. Performance of lablab culture CoLT 20 in TNAU, Coimbatore. Grain yield kg/ha.

S.No.	Year	Season	CoLT 20	Co 11	Co 9
1.	1986	Summer	1498	1253	1126
2.	1986	Kharif	1439	1308	1153
3.	1986	Rabi	1078	783	746
4.	1987	Summer	1560	1200	1200
5.	1987	Kharif	1175	1115	1008
6.	1987	Rabi	1400	900	900
7.	1988	Summer	1350	1250	1180
8.	1988	Kharif	1460	1160	1080
9.	1988	Rabi	1280	980	900
10.	1989	Kharif	1600	1380	1100
		Overall mean	1384	1133	1039
		Increase over		22%	33%

Table 3. Quality attributes of lablab culture CoLT 20.

S.No.	Variety/culture	Protein (%)		Fibre (%) Green pod
		Green pod	Seed	
1.	CoLT 20	5.2	24.6	1.8
2.	Co 11	5.0	24.5	2.0
3.	Co 9	4.6	22.0	3.8

varieties. A mean pod yield of 9395 Kg could be obtained with CoLT 20 while, Co 11 and Co 9 gave 8781 Kg and 7838 Kg per hectare respectively (Table 1).

Since CoLT 20 is a dual purpose culture, it was also evaluated for its grain yield during summer, kharif and rabi of 1986-89 and it recorded a mean grain yield of 1384 Kg while, Co 11 and Co 9 gave 1133 Kg and 1039 Kg per hectare respectively (Table 2).

Besides possessing high pod and grain yield potential, it has the attractive purple pigmentation in pods. This is the unique characteristics of this variety. It has also scored high value of cooking characteristics (Table 3). This culture contains more protein in its pod (5.2%) and seed (24.6%) and less fibre (1.8%)

The morphological description of CoLT 20 are:

Habit : Bushy and erect
Plant height : 71.7 cm

Pigmentation (stem)	:	Purple
Branching	:	3.3
Leaves	:	Trifoliate
Inflorescence	:	Axillary receme
Flower colour	:	Purple
Pods	:	Broad, flat, purple
Pod length	:	8.32 cm
Pod breadth	:	2.61 cm
Seeds per pod	:	4.1
100 seed weight	:	38.46 g
Days to 50% flowering	:	40-45 days
Days to maturity	:	100-110 days.

By virtue of this above superior characters like purple pod colour, early duration, more vigourus, prolonged flowering, podding and higher grain and pod yield, the promising culture CoLT 20 has been released as Co 12 lablab by the Tamil Nadu Agricultural University, Coimbatore during January 1991 for large scale cultivation in Tamil Nadu.

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CO.5 GREENGRAM - A NEW HIGH YIELDING STRAIN FOR TAMIL NADU

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ABSTRACT

An improved medium duration photoinsensitive high yielding Co.5 greengram has been released for general cultivation in Tamil Nadu. This strain wad developed by crossing two greengram gneotypes KM.2 X MG.50.10 (G) and has better field tolerance to yellow mosaic virus, leaf crinckle and powdery mildew compared to other released varieties.

Greengram occupies 1.36 lakh hectares with an annual production of 57,000 tonnes in Tamil Nadu State with a productivity of 431 Kg/ha. It is grown in different situations viz. rainfed, irrigated and rice fallows in all the districts of Tamil Nadu. In greengram the DMP, pod number and HI are the major characters that contribute to the final economic yield. Hence, an intensive breeding was initiated at TNAU under Centre for Biological Research on Pulses financed by NARP (ICAR) from 1981-1986. The research has led to the identification of a high yielding promising culture GD-2-83-5 (released as Co.5). The pedigree and the resules are reported below.

MATERIALS AND METHODS

Cross pollination was effected between two greengram genotypes KM.2 and MG.50.10 (G) and this cross hybrid derivative GD-2-83-5 was isolated in 1983. This derivative entered the PYT stage during 1986 (F6 generation) and productivity testings were conducted during 1987 and 1989 in CYT, MLT and ART stage trials in comparison with KM2 and Co4 strains. In All India Co-ordinated Trials for South Zone also this culture performed better than the national check (PS.16). This culture being a medium duration (70-75 days) and

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