

Table 5. Metric trials of KGB 512.

Plant height (cm)	30 - 35
Duration (days)	70 - 75
Days to 50% flowering	35 - 40
Number of branches	3 - 4
Number of pods/plant	20 - 30
Number of seeds/pod	6 - 8
100 seed weight (g)	5.3
Pod length (cm)	5.2 - 6.0
Seed colour	Black
Anthocyanin pigment	Present
Flower colour	YYellow
Pod	Hairy
Grain yield (Average yield in kg/ha)	711

1,2) The culture KGB 512 is suitable for inter-cropping in cotton and it will not affect the yield of main crop. The inter-crop of KGB 512 in cotton is capable of giving 2.25 per cent of increased monetary return when compared with the

inter-crop of Co5 check (Table 2). This culture KGB 512 is moderately resistant to stem fly and tolerant to powdery mildew and yellow mosaic (Table 4) It is preferred by the farmers in rainfed area. The grain is also preferred by the consumers. It has protein content is best suited for the preparation of different food items like *iddli*, *dosai*, *vadai* and for other culinary purposes. The grains have good consumer preference (Table 4) The metric traits of the culture KGB (K 1) are given in table 5.

In view of the short duration, high grain quality and acceptability and suitability of cultivation in southern districts of Tamil Nadu under rainfed vertisol both as pure crop and inter crop in cotton, the culture KGB 512 was released as K 1 for general cultivation in Tamil Nadu

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BSR.1 (ICGV.86143): A HIGH YIELDING SPANISH BUNCH GROUNDNUT FOR WESTERN ZONE OF TAMIL NADU

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ABSTRACT

A bunch variety of groundnut BSR.1 (ICGV. 86143) has been developed from the Agricultural Research Station, Bhavanisagar for the western zone of Tamil Nadu. It recorded a mean pod yield of 2845 kg/ha in 101 days which was higher than VRL.2 (17.6%), VRL.3 (21.6%) and Co.2 (49.6%). At National level, it ranked second among 13 entries in zone II and III by recording a mean yield of 2710 kg/ha (16.4 to 33.6% over checks). The kernel yield was also higher than the checks by 22.4 to 40.1 per cent. In the farmers holding (OFT/FLD/ART), it registered 2053 kg/ha (mean for 25 trials) which was 11.5 to 14.4 percent higher than VRL.2, Co.2 and VRL.3 It has 70.3 per cent shelling, 82.4 per cent sound matured kernel 49.5 per cent oil and 38.5 g hundred kernel weight. It is moderately resistant to late leaf spot and rust diseases. It possesses fresh seed dormancy for 21 days.

KEY WORDS : Groundnut, New Variety, Fresh Seed Dormancy, Spanish Bunch

Groundnut (*Arachis hypogaea* L.) is one of the major oilseed crops grown in the Western zone of Tamil Nadu in 2.1 lakh ha with an annual production of 2.1 lakh tonnes. The three main seasons are June -July (*Kharif*), December - January (*rabi*) and April-July. The currently recommended spanish bunch varieties (Co.2 VRL.2, VRL.3, TMV.2, JL.24) are either non dormant or with a minimum fresh seed dormancy of 7-10 days

only. In order to develop a spanish bunch groundnut variety with normal duration, high yield and fresh seed dormancy, a collaborative research project between the Tamil Nadu Agricultural University (TNAU) and the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) was initiated and breeding materials were exchanged. BSR.1 (ICGV.86143) is the outcome of this collaborative research project.

Table 1. Mean performance of ICGV.86143 in different trials (1987 to 1993)

Name of Trial	Year	No. of trials	Varieties			
			Mean pod yield (kg/ha)			
			ICGV.86143	VRI.2	VRI.3	Co. 2
TRIALS AT RESEARCH STATIONS :						
Bhavanisagar station trials	1987-1993	8	1464-2695 2141	1720-2125 1945	1750-2135 1928	1096-2428 1674
<i>Kharif</i>	1987-1993					
Range						
Mean						
% over check			10.1	11.0	27.9	
<i>Rabi/Summer</i>	1988-1993	5	2957-4031 3548	2333-3333 2892	2333-3167 2750	1683-2370 2129
Range						
Mean						
% over check						
Over the seasons mean yield	1987-1993	13	2845	2419	2339	1902
% over check						
Multilocation trials	1991-92	5	2101-4051 2865	2012-3290 2638	1007-2194 1601	1979-2370 2181
Range						
Mean						
% over check						
			ICGV.86143	GG.2 (NC)	ICGS. 11 (ZC)	J.11 (LC)
AICORPO trials	1992-93	16	1870-2535 2199	1087-2056 1538	752-1571 1253	1631-1829 1763
Zone II (Summer zone)						
Range						
Mean						
% over check			43.0	75.5	24.7	
			ICGV.86143	ICGS.11 (NC)	JL.24 (ZC)	Local checks
Zone III (<i>Rabi/summer zone</i>)	1992-93	11	1345-4051 2440	619-3921 1625	567-4267 1743	969-2611 2092
Range						
Mean						
% over check						
Zone IV (Non Traditional areas)	1992-93	2	3490-6436 4963	3012-6945 4978	3659-7524 5591	2713-6251 4481
Range						
Mean						
% over check						
			ICGV.86143	National check	Zonal check	Local check
National level overall mean	1992-93	16	2710	2018	2132	2329
Pod yield						
% over check						
Kernel yield						
% over check			40.1	27.3	22.4	
TRIALS AT FARMERS' HOLDING :						
On-farm trial	1991-92	5	2300-3060 2607	2000-2700 2230	2000-2500 2122	1800-2600 2150
Range						
Mean						
% over check						
Front line demonstrations	1992-93	4	2813-3125 2963	2688-3200 2847	2625-3000 2788	2375-2875 2625
Range						
Mean						
% over check						
Overall mean for OFT/FLD			2765	2504	2418	2286
% over check				10.4	14.4	21.0
Adaptive Research Trials	1992-93 and 1993-94	16	644-3175 1653	812-2600 1470		800-2460 1468
Range						
Mean						
% over check						
Overall mean for	1991-92 to '94	25	2053(25)	1842(25)	2418*(9)	1804(17)

* VRI.3 tested only in OFT and FLD and corresponding mean yield was compared with ICGV.86143. Figures in the parentheses indicates the number of locations tested and compared. NC : National check, ZC : Zonal check, LC : Local check

Table 2. Ancillary characters of ICGV.86143 (BSR-1)

Character	Varieties			
	ICGV.86143	VRI.2	VRI.3	Co. 2
Height of main axis (cm)				
Range	28 - 31	38 - 53	37 - 43	31 - 35
Mean	29.4	45.4	39.9	32.8
Primary branches (No.)				
Range	4 - 7	4 - 6	4 - 7	3 - 5
Mean	6.0	4.9	5.6	3.8
Initial flowering (days)				
Range	23 - 26	23 - 25	23 - 24	23 - 25
Mean	25.0	24.5	23.7	24.3
50% flowering (days)				
Range	27 - 29	27 - 29	27 - 28	27 - 29
Mean	28.3	28.5	27.7	27.8
Maturity duration (days)				
Range	90 - 112	90 - 110	90 - 110	90 - 110
Mean	101	102	98	101
Mature pods/plant (No.)				
Range	15 - 25	13 - 22	14 - 24	12 - 22
Mean	22	19	19	17
Shelling (%)				
Range	68 - 75	67 - 73	69 - 72	64 - 75
Mean	70.3	69.1	71.0	69.2
Sound matured kernel (%)				
Range	66 - 90	67 - 85	79 - 91	70 - 89
Mean	82.4	78.6	86.3	83.7
100 kernel weight (gm)				
Range	30 - 47	34 - 49	33 - 38	32 - 48
Mean	38.5	44.1	35.4	40.6
Fresh seed dormancy Germination % on 20 DAS	Nil	90	91	90
Pests reaction under field condition				
Leaf miner (% of damage)	3.0	4.0	3.0	-
Thrips (No./leaf)	0.07	0.08	0.06	-
Hoppers (No./leaf)	0.03	0.04	0.08	-
Disease reaction				
a) Under field condition (over seasons)				
Rust (1-9 scale)	2.2	3.2	3.2	3.3
Late leaf spot (1-9 scale)	3.2	5.1	5.2	5.1
Bud necrosis (%)	-	1.9	1.9	1.8
b) Artificial condition Rust (1-9 scale)	3.0	5.5	4.8	5.6
Late leaf spot (1-9 scale)	3.5	6.6	6.5	5.8

MATERIALS AND METHODS

Under the TNAU and ICRISAT collaborative research project, ICGV 86143 was received in 1986. This line was further subjected to mass selection for desired pod characteristics and the

improved ICGV. 86143 was evaluated at the Agricultural Research Station, Bhavanisagar from 1987 to 1993. This is the cross derivative of ICGS 44 x (Robut 33-1 x NCAc 2821). This selection was also tested in multilocation trials (MLT) (1991-92), On farm trials (OFT) (1991-92), front

line demonstrations (FLD) (1992-93) and adaptive research trials (ART) (1992-93 and 1993-94). Under All India Co-ordinated Research Project on Oilseeds (AICORPO), this was tested as ICBS 86143 in the Initial varietal trial (AICORPO, 1992-93).

RESULTS AND DISCUSSION

At the Agricultural Research Station, Bhavanisagar ICGV, 86143 recorded a mean pod yield of 2141 kg/ha (11% over VRI.2) and 3548 kg/ha (22.7% over VRI.2) in *Kharif* and *rabi* summer season respectively. Over the seasons, this variety registered a mean pod yield of 2845 kg/ha (mean for 13 trials 1987-1993) which was higher than the checks VRI.2 (17.6%), VRI.3 (21.6%) and Co.2 (49.6%) (Table 1).

In the MLT conducted at the western zone of Tamil Nadu, ICGV 86143 yielded 2865 kg/ha, which was higher than the cultivars Co.2 (31.4%), VRI.2 (8.6%) and JL.24 (64.8%) (mean for 5 trials).

Under the AICORPO trials, ICGV 86143 performed better than the various checks and ranked second among 13 entries in zone II (summer zone) and zone III (*rabi*/summer zone) with an overall mean pod yield of 2710 kg/ha (mean for 16 trials) with 16.4 per cent increase over the national check. The kernel yield was also higher than the checks by 22.4 to 40.1 per cent (Table 1).

In the 25 trials conducted at the farmers holdings through OFT (5 Nos.), (4 Nos.) and ART (16 Nos.) in the western zone of Tamil Nadu, ICGV.86143 recorded a mean pod yield of 2053 kg/ha (mean for 25 trials in 1992-93 - 1993-94) which was also higher than VRI.2 (11.5%), VRI.3 (14.4%) and Co.2 (13.7%) (Table 1).

ICGV.86143 has maturity duration of 101 days. The leaves are small and dark green, even at

maturity. The pods are bold with shallow constriction and reticulation. It possesses moderate resistance to late leaf spot and rust diseases and tolerant reaction to bud necrosis. This selection has 70.3 per cent shelling and 82.4 per cent sound matured kernel which was higher than VRI.2. The hundred kernel weight is 38.5 g. as against 44.1 g. in VRI.2 and 35.4 g. in VRI.3. It contains 49.5 percent oil and possesses fresh seed dormancy upto 21 days (Table 2). Dry haulms weight is 5141 kg/ha.

Distinguishing features of BSR 1

Habit	: Bunch
Leaves	: Small and dark green
Peg	: Purple
Pod	: Bold, two seeded, shallow constriction and reticulation.
Kernel	: Bold, rose testa.

ICGV.86143 (BSR.1) is recommended for general cultivation in *kharif* (June - July), *rabi*/summer (December - January) and April - July seasons of western zone of Tamil Nadu State.

This culture was approved by Tamil Nadu State Variety Release Committee, for release as BSR.1 for the general cultivation in western Zone of Tamil Nadu State.

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