INDIAN JOURNAL OF ARID HORTICULTURE
2011, Vol. 6 (1-2) : 82-83

SHORT COMMUNICATION

Evaluation of ridge gourd hybrids for growth and yield attributes

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Ridge gourd [*Luffa acutangula* (Roxb.)L.] is an important cucurbitaceous vegetable grown during kharif and summer seasons in Andhra Pradesh. The tender fruits are used as vegetable and they are good source of vitamin A, B and C and also iron. Ridge gourd, being predominantly monoecious and is cross-pollinated crop and provides ample scope for utilization of the hybrid vigor (Hedau and Sirohi, 2004). The present era is of hybrids and moreover the glut due to monocropping of tomato over larger acreage demands for crop diversification to make the profession of vegetable production is an economic one. Abusaleha and Dutta (1994) and Kadem et al. (1995) have reported that hybrids were early and gave higher yields in ridge gourd. The hybrids are fast replacing the commercial varieties because the private seed industry is emerging on the scene whose survival essentially depends on F_1 hybrids as the vegetable growers are bound to purchase the seed every year. To conclude on the performance of any genotype is often inconclusive because of inconsistent performance across environments. The breeding work carried out at different Research Stations in our country has resulted in the identification of number of hybrids. Ridge gourd hybrids received from different All India Coordinated Centers and private seed companies were evaluated to identify the suitable hybrids for Andhra Pradesh.

The experiment was carried out at Vegetable Breeding Station, Agricultural Research Institute, Rajendranagar, Hyderabad during *Kharif* 2006 and 2007 to study the performance of thirteen hybrids developed at different places in India (Table-1) along with Pusa Nasdar as Check. The experimental site is situated at 17°19' Northern Latitude, 78° 23' Eastern Longitude and 542.3 m from Mean Sea Level. Pusa Nasdar is a national variety and high yielding hence, it was taken as Check to compare the hybrids. The experiment was laid out in Randomized Block Design with three replications in a plot size of 5.0 m x 2.5 m in clay loam soils. The plants were raised in channel adopting spacing of 5.0 m x 0.5m and vines were trailed on overhead pandals. As a basal application, FYM at 25t/ha, 40 kg nitrogen, 100 kg phosphorous and 20 kg potassium were applied. Further two split applications of 40 kg nitrogen and 20 kg potassium were applied at 30 and 45 days after sowing. Need based plant protection measures were taken up during crop growth period. Observations were recorded on vine length, number of laterals per vine, number of fruits per vine, node number at which first fruit appeared, and yield parameters like average fruit weight, fruit length, fruit girth and yield/ha. The data was statistically analyzed as per standard procedures given by Panse and Sukhatme (1985).

The observations recorded on growth, yield and yield attributing characters were presented in Table-2. Among the hybrids, the longest vine length was recorded in HYRGH-3 (5.0 m) which was on par with all hybrids except Sanchitha (4.2 m), Nidhi (4.2 m), VRGH-416 (4.0 m) and Pusa Nasdar (3.8 m). There was no significant difference observed in case of number of laterals per vine among the hybrids. Whereas number of fruits per vine exhibited significant difference among the hybrids tested. Significantly more number of fruits per vine was recorded in BSS-580 (9.1) followed by Pallavi (8.6), BSS-405 (8.1) and NRGH-22 (7.8). About eight hybrids were on par with Check Pusa Nasdar in terms of fruit weight. Among the eight hybrids, Pallavi recorded maximum fruit weight (229.2g) followed by BSS-580 (205.5g). A distinct variation was observed in case of fruit length among the hybrids. Maximum fruit length was observed in Sanchita (48.1cm) followed by Pallavi (46.0cm) which were significantly superior to other hybrids. Whereas minimum fruit length was recorded in HYRGH-5 (26.4 cm) and HYRGH-2 (26.8 cm). Fruit girth was recorded maximum in BSS-405 (16.8cm) and minimum in Harsha (11.1cm). A significant variation in total yield of different hybrids was observed and it varied from 4.2 to 7.8 t/ha. Among the hybrids evaluated, Pallavi recorded highest yield (7.8 t/ha) followed by BSS-580 (7.6 t/ha) which were significantly superior to all other hybrids. It could be due to more number of fruits per vine and fruit weight. Expression of hybrid vigour in ridge gourd with respect to increase in fruit length, fruit girth, number of fruits per vine, average fruit weight and node number at first female flower appeared were reported by Karuppaiah *et al.* (2002) and Hedau and Sirohi (2004).

From the study it can be concluded that the hybrid Pallavi and BSS-580 may be suggested for commercial cultivation in Souther Telangana zone of Andhra Pradesh. Now-a-days consumers preferred to select short length fruits rather than long fruits because they are easy to handle in carrying, packing and storage hence, HYRGH-5 and HYRGH-2 may also be suggested for cultivation.

Table 1: Preliminary information on hybrids/variety of ridge gourd under study

Sl. No.	Name of the hybrid	Source
1	NRGH-22	Nirmal Seeds Pvt Ltd.
2	Sanchita	Pandey Seeds Pvt Ltd.
3	Harsha	Century Seeds Pvt Ltd.
4	Nidhi	Century Seeds Pvt Ltd.
5	BSS-405	Bejo Sheethal Seeds Pvt Ltd.
6	BSS-580	Bejo Sheethal Seeds Pvt Ltd.
7	VRGH-416	Vivaswan Agritech Pvt Ltd.
8	HYRGH-2	ANGRAU, Hyderabad
9	HYRGH-3	ANGRAU, Hyderabad
10	HYRGH-5	ANGRAU, Hyderabad
11	Garima	Tokita Seeds Pvt Ltd.
12	NRGH-370	Nirmal Seeds Pvt Ltd.
13	Pallavi	Sungro Seeds
14	Pusa Nasdar (National Variety as Check)	IARI, New Delhi

Table 2: Performance of ridge gourd hybrids/variety for growth and yield

Hybrid/ Variety	Vine length (cm)	No. of laterals/ vine	Node No. at 1st fruit harvested	No. of fruits/ vine	Ave. fruit wt.(g)	Fruit length (cm)	Fruit girth (cm)	Fruit yield t/ha
NRGH-22	4.5	3.8	13.0	7.8	192.8	42.5	15.9	6.0
Sanchita	4.2	3.9	11.0	6.1	176.0	48.1	15.0	4.2
Harsha	4.3	2.5	11.0	6.2	199.1	32.9	11.1	5.0
Nidhi	4.2	3.4	13.0	6.8	192.1	39.3	14.6	5.4
BSS-405	4.7	3.6	14.5	8.1	189.9	39.7	16.8	6.0
BSS-580	4.5	3.5	11.0	9.1	205.5	37.4	13.4	7.6
VRGH-416	4.0	3.9	13.0	7.3	190.6	32.0	13.4	5.6
HYRGH-2	4.3	4.0	16.0	7.3	191.7	26.8	15.4	5.6
HYRGH-3	5.0	4.1	14.5	6.6	167.9	28.1	14.9	4.4
HYRGH-5	4.8	4.1	15.5	7.6	178.0	26.4	13.3	5.6
Garima	4.5	3.2	11.5	7.6	178.2	37.8	12.4	5.2
NRGH-370	4.8	3.4	16.5	7.3	174.2	34.1	14.6	5.2
Pallavi	4.8	3.7	15.0	8.6	229.2	46.0	13.4	7.8
Pusa Nasdar (C)	3.8	3.1	11.5	5.5	235.8	32.6	11.7	5.2
SEm±	0.2	0.4	1.2	0.5	17.5	1.8	1.0	0.4
C.D at 5%	0.7	NS	3.7	1.6	50.87	5.4	3.0	1.3
CV (%)	6.7	12.4	12.9	10.2	12.8	7.0	9.8	11.1

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