



P-ISSN: 2349-8528

E-ISSN: 2321-4902

IJCS 2019; 7(4): 2081-2085

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Received: 10-05-2019

Accepted: 12-06-2019

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## Studies on genetic diversity for yield and quality traits in ridge gourd (*Luffa acutangula* (L.) Roxb.)

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### Abstract

An experiment was conducted at college of horticulture, Venkataramannagudem, Dr. YSR Horticultural University, Andhra Pradesh during Rabi season 2017-18 to find out suitable ridge gourd genotype for earliness, yield, growth and biochemical attributes under coastal Andhra Pradesh region, 42 genotypes were evaluated for characters. Analysis of variance revealed that mean sum of squares due to genotypes was highly significant for all characters. Among 42 genotypes, the genotype Rg-92 was noted for earliness for days to first male flower appearance (32.60), the genotype Yerrabalem Local for days to first female flower appearance (38.60), the genotype RV-6 for node at which first female flower appeared (6.70), the genotype IC-523892 for days to 50 per cent flowering (45.60), the genotype ERG-4 for days to first harvest (50.00), the genotype Satputia for sex ratio (3.45) and maximum days to final harvest (96.30) in Rg-91 genotype. The cultivar Arka Sujath was noted for maximum vine length at 45 DAS (2.40), vine length at 90 DAS (4.60), number of primary branches appearance at 45 DAS (3.75), cultivar Arka Sumeeth for number of primary branches appearance at 90 DAS (6.75). Maximum number of fruits per plant (14.17), fruit yield per plant (4.26), fruit yield per hectare (26.38), average fruit weight (306.21), rind thickness (5.67) in the genotype Chikkamagaluru Local, fruit diameter (6.08), flesh thickness (5.17) in the genotype Rg-112 and maximum fruit length for genotype Jaipur Long (32.52). Regarding quality parameters, maximum total soluble solids (5.55), moisture content (96.67) was recorded in genotype Arka Sumeeth, fiber content (2.70) in Kolar Local and Vitamin C (4.58) in Rg-93 and Rg-99. Thus identification of promising genotypes as a commercial crop for the area with high yield and quality fruits would help the farmers in its adoption and improving their economic status.

**Keywords:** Genotypes, ridge gourd, parameters, quality, yield

### Introduction

Ridge gourd (*Luffa acutangula* (Roxb.) L.) is a monoecious and highly cross pollinated important tropical cucurbitaceous vegetable crop cultivated throughout India. Every 100 g of the edible portion of ridge gourd contains 0.5 g of fiber, 0.5 percent of protein, 0.35 per cent of carbohydrate, 37 mg of carotene, 5.0 mg of vitamin C, 18 mg of calcium and 0.5 mg of Iron (Hazra and Som, 2005) [7]. There are number of cultivars available with wide range of variability in shape of fruits. The genus derives its name from the product loofah, which is used in bathing sponges, scrubber pads, door mats, pillows, matteressa and also for cleaning utensils. It contains a gelatinous compound called luffein and has medicinal importance. Green fruits are cooked as vegetable. Considering its medicinal use, commercial use of its by product in manufacturing household utensils, consumption of fleshy fruit as vegetable in daily food and its contribution to the welfare of people, there is a need to enhance the productivity level of this crop. Lack of high yielding variety is one of the main reasons for low yield of ridge gourd. In nut shell, to improve the yield and for developing a new variety, collection and evaluation of germplasm is a pre requisite in a specific crop improvement programme. Hence, an effort was made to identify the potential cultivar with desirable growth and yield parameters.

### Material and methods

The present investigation was conducted during *rabi* season 2018 [19], at the department of Vegetable Science, College of Horticulture, Dr. YSR Horticultural university, West Godavari District, Andhra Pradesh. The location falls under Agro-climatic zone-10, humid, East Coast

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Plain and Hills (Krishna-Godavari zone) with an average annual rainfall of 900 mm at an altitude of 34 m (112 feet) above mean sea level. The geo-graphical situation is  $16^{\circ} 63'12''N$  latitude and  $81^{\circ} 27'56''E$  longitude. It experiences hot humid summer and mild winter. The experimental material for the present investigation comprised of 42 germplasm of ridge gourd collected from different places in India. The experiment was laid out in Randomized Block Design (RBD) with two replications during January, 2018. Every genotype in each replication was grown with a spacing of 1.9 m between rows and 0.85 m between plants. The seeds were hand-dibbled at given spacing in the respective blocks. 15 plants of each genotype were sown and the plants were trained onto a pendal. The data was recorded from the 5 randomly labeled plants. Further, the crop was grown with other practices as per the recommendation.

## Results and Discussion

The analysis of variance of all the characters under study is presented in table 1. This analysis of variance revealed that mean sum of squares due to genotypes was highly significant for all characters. This is an indication of existence of sufficient variability among the genotypes for fruit yield and its components traits. Significant mean sum of square due to fruit yield and attributing characters revealed existence of considerable variability in material studied for improvement for various traits. These results are in conformity with earlier reports of Rao *et al.* (2000a) [14], Singh *et al.* (2002) [18], Hegade *et al.* (2009) [8], Hanumegowda *et al.* (2012) [6], Singh *et al.* (2013) [19], Choudhary *et al.* (2014) [3], Koppad *et al.* (2015) [10] and Ananthan and Krishnamoorthy (2017) [2].

**Table 1:** Analysis of variance for various characters in ridge gourd (*Luffa acutangula* (L.) Roxb.)

Sl. No.	Character	Mean sum of squares		
		Replications	Genotypes	Error
1	Days to first male flower appearance	9.53	18.33**	2.53
2	Days to first female flower appearance	0.06	24.09**	4.89
3	Node at which first female flower appeared	0.004	0.22**	0.05
4	Days to 50 per cent flowering	2.15	22.20**	4.02
5	Sex ratio	0.006	47.39**	0.17
6	Days to first harvest	0.08	27.97**	2.34
7	Days to final harvest	6.60	59.94**	12.92
8	Vine length at 45 DAS (m)	0.00	0.53**	0.04
9	Vine length at 90 DAS (m)	0.08	1.07**	0.10
10	Number of primary branches at 45 DAS	0.0001	0.43**	0.08
11	Number of primary branches at 90 DAS	0.0046	1.45**	0.21
12	Fruit length (cm)	0.71	62.13**	4.81
13	Fruit diameter (cm)	0.05	1.11**	0.08
14	Rind thickness (mm)	0.005	0.94**	0.05
15	Flesh thickness (cm)	0.06	1.05**	0.05
16	Fiber content (g 100 <sup>-1</sup> )	0.002	0.32**	0.00
17	Total soluble solids (°B)	0.01	1.25**	0.02
18	Vitamin C (mg 100 <sup>-1</sup> )	0.039	0.42**	0.00
19	Moisture content (%)	0.56	16.04**	0.35
20	Average fruit weight (g)	560.27	5218.88**	170.18
21	Number of fruits per plant	2.87	3.66**	1.32
22	Fruit yield per plant (kg)	0.005	0.85**	0.05
23	Fruit yield per hectare (q/ha)	0.19	32.74**	2.11

\*: Significant at 5 per cent level; \*\*: Significant at 1 per cent level

The mean values of different growth and yield parameters with respect to genotypes are presented in table 2a and table 2b. The genotypes significantly differed for days to first male and female flower appearance, node at which first female flower appeared, days to 50 per cent flowering, sex ratio, days to first harvest, days to final harvest, vine length at 45 DAS and 90 DAS (m), number of primary branches at 45 DAS and 90 DAS, fruit length (cm), fruit diameter (cm), rind thickness (mm), flesh thickness (cm), fiber content (g 100 g<sup>-1</sup>), total soluble solids (°B), vitamin C (mg 100 g<sup>-1</sup>), moisture content (%), average fruit weight (g), number of fruits per plant, fruit yield per plant (kg), fruit yield per hectare (q ha<sup>-1</sup>).

The genotype Rg-92 produced early male flowering *i.e.* 32.60 DAS and genotype Yerrabalem Local produced early female flowering *i.e.* 38.60 DAS. Female flower was produced at lower nodes (6.70) in RV-6. Significant early flowering for days to 50 per cent flowering was noticed in IC-523892 (45.60 DAS) while Annihalli Local-1 (60.70 DAS) was found to be late in this respect. Sex ratio in the present study ranged from 3.45 (Satputia) to 27.62 (Chikkamagaluru Local). The genotype ERG- 4 exhibited early fruit harvesting (50.00

DAS) followed by Yerrabalem Local (50.40 DAS). The genotype Annihalli Local-1 recorded final harvesting (114.70 DAS) followed by Swarna Uphar (114.50 DAS).

With respect to vine length at 45 DAS Arka Sujath (2.40) recorded maximum vine length at 45 DAS followed by Rg-74 and ERG-1 (2.38), and the least was observed in Bagalkot Local (0.55), followed by KGF Local (0.76). With respect to vine length at 90 DAS Arka Sujath (4.60) recorded maximum vine length at 90 DAS followed by Arka Sumeeth (4.30), and the least was observed in Bagalkot Local (1.30), followed by RV-3 (1.31). With respect to number of primary branches at 45 DAS Arka Sujath and Arka Sumeeth (3.75) recorded maximum number of primary branches followed by IC-539714 (2.80), and the least was observed in RV-3 (1.49) and number of primary branches at 90 DAS Arka Sumeeth (6.75), followed by Arka Sujath (6.35), while the genotype RV-3 recorded minimum branches appearances at 90 DAS (2.58).

Genotypes differed significantly with respect to fruit characters like fruit length, fruit diameter, rind thickness and flesh thickness. In the present study, highest fruit length was registered in Jaipur Long (32.52 cm) followed by

Chikkamagaluru Local (32.11 cm) and fruit length was least in Rg-112 (11.45 cm). With respect to fruit diameter maximum was noticed in the genotype Rg-112 (6.08 cm) followed by Chikkamagaluru Local (5.59 cm) and minimum in Rg-97 (2.98 cm). Rind thickness was recorded highest in Chikkamagaluru Local (5.67 mm) followed by Rg-80 (5.32 mm) while the genotype Annihalli Local-2 recorded minimum rind thickness (2.83 mm). Flesh thickness was recorded highest in Rg-112 (5.17 cm), followed by Dharwad Local (4.65 cm), while lowest was recorded in Rg-92 (1.93 cm).

Genotypes differed significantly with respect to biochemical characters like fiber content, total soluble solids, vitamin C and moisture content. Kolar Local was registered with high fiber content (2.70 g 100 g<sup>-1</sup>) followed by Swarna Manjeri and ERG-4 (2.69 g 100 g<sup>-1</sup>), while low content in Annihalli Local-1 (1.20 g 100 g<sup>-1</sup>). Arka Sumeet recorded maximum total soluble solids (5.55 °B) followed by Arka Sujath (5.49 °B) while the genotype RV-3 recorded minimum total soluble solids (2.62 °B). The genotype Rg-99 and Rg-93 recorded maximum Vitamin C (4.58 mg 100 g<sup>-1</sup>) followed by Rg-91 (4.57 mg 100 g<sup>-1</sup>) while the genotype Rg-74, RV-1 and RV-2 recorded minimum Vitamin C (3.20 mg 100 g<sup>-1</sup>). The genotype Arka Sumeet recorded maximum moisture content (96.67%) followed by KGF Local (96.21%) while the genotype Rg-102 recorded minimum moisture content (85.51%). Significant difference was observed among the

genotypes with respect to yield parameters. The highest average fruit weight was found in Chikkamagaluru Local (306.21 g) which was followed by Dharwad Local (293.48 g) and minimum fruit weight was recorded in Satputia (36.85 g). Maximum number of fruits per plant were found in Chikkamagaluru Local (14.17) followed by Dharwad Local (13.92), whereas, minimum number of fruits per plant were registered in Rg-91 (9.05). Chikkamagaluru Local significantly produced higher fruit yield per plant (4.26 kg) followed by Dharwad Local (3.40 kg) and genotype Satputia (0.44 kg) had lower fruit yield per plant. Chikkamagaluru Local significantly produced higher fruit yield per hectare (26.38 q ha<sup>-1</sup>) followed by Dharwad Local (21.05 q ha<sup>-1</sup>) while the genotype Satputia recorded minimum fruit yield per hectare (2.72 q ha<sup>-1</sup>) followed by Rg-97 (4.98 q ha<sup>-1</sup>).

In the present study, a high range of variability was observed for all the characters. It was maximum for average fruit weight (36.85 to 306.81 g) and minimum for fiber content (1.20 to 2.70 g 100 g<sup>-1</sup>). The characters showing wide range of variation provide an ample scope for selecting desired types. These results are in accordance with those reported by earlier workers like Chowdhury and Sarma (2002)<sup>[4]</sup>, Prasad *et al.* (2004)<sup>[12]</sup>, Ananthan *et al.* (2005)<sup>[1]</sup>, Yadav *et al.* (2007)<sup>[20]</sup>, Kumar *et al.* (2007)<sup>[20]</sup>, Hanumegowda *et al.* (2012)<sup>[6]</sup>, Sharma and Sengupta (2013)<sup>[17]</sup>, Radharani *et al.* (2015)<sup>[13]</sup>, Deepthi *et al.* (2016)<sup>[5]</sup>, Resmi and Sreelathakumary (2016)<sup>[16]</sup>, Rathore *et al.* (2017)<sup>[15]</sup> and Karthik *et al.* (2017)<sup>[9]</sup>.

**Table 2a:** Mean performance of various characters in ridge gourd (*Luffa acutangula* (L.) Roxb.) Genotypes

Genotype	DFMF	DFFF	NFFA	DF	SR	DFH	DF	VL45D	VL90D	B45D	B90D
Rg-74	38.40	45.70	6.90	53.10	21.50	55.90	98.30	2.38	3.13	2.40	5.00
Rg-80	35.70	43.20	7.20	50.20	24.01	55.00	104.90	0.85	1.85	2.00	3.80
Rg-84	37.30	44.80	7.50	53.50	27.45	57.80	98.40	1.54	2.47	2.40	4.30
Rg-91	36.60	41.60	7.50	51.20	25.57	53.80	96.30	1.21	2.28	2.30	4.20
Rg-92	32.60	41.60	7.60	48.60	24.32	53.00	101.50	1.40	2.46	2.20	4.10
Rg-93	40.70	51.20	7.40	57.70	25.36	62.60	110.80	2.00	3.10	2.60	4.80
Rg-95	36.40	48.20	7.10	56.20	24.65	58.80	109.20	0.92	1.90	1.90	3.90
Rg-97	39.10	49.80	7.30	56.70	23.20	59.50	105.00	0.97	2.05	1.90	3.50
Rg-99	38.70	50.10	7.70	56.30	21.37	61.80	111.80	1.19	2.06	2.30	4.20
Rg-102	36.60	48.50	7.10	54.50	25.25	59.50	110.00	0.72	1.56	2.10	4.00
Rg-112	45.50	52.00	7.80	58.50	19.54	60.60	102.20	1.57	2.69	2.70	4.80
Rg-120	36.50	48.40	7.20	54.30	25.44	58.50	98.60	0.69	1.54	2.00	3.40
RV-1	37.00	50.40	7.55	50.82	23.03	54.08	100.41	1.04	1.34	1.85	2.88
RV-2	38.00	47.85	7.15	51.06	19.60	52.88	98.06	1.41	1.52	1.75	3.32
RV-3	35.03	45.00	7.10	54.12	19.00	54.60	96.50	1.03	1.31	1.49	2.58
RV-4	34.85	45.50	7.05	51.53	20.55	54.60	97.35	1.05	1.53	1.60	2.77
RV-5	35.60	49.15	7.20	54.60	22.97	54.43	101.41	1.29	1.65	1.76	3.22
RV-6	38.70	53.40	6.70	59.70	27.51	60.80	107.60	1.05	1.80	2.10	4.10
ERG-1	35.40	47.20	7.60	55.50	17.16	60.80	106.80	2.38	3.10	2.40	4.90
ERG-4	33.40	40.50	7.80	47.60	22.48	50.00	97.60	2.10	2.99	2.60	5.20
IC-523892	34.30	39.50	7.60	45.60	24.91	50.90	97.80	1.42	2.27	2.50	4.50
IC-539714	40.50	50.60	7.60	58.50	26.81	61.80	107.80	1.06	1.93	2.80	3.80
Yerrabalem Local	33.60	38.60	7.30	47.40	25.11	50.40	100.10	0.85	1.72	2.00	3.80
Chitrada	35.60	49.60	8.20	56.10	18.68	61.40	111.30	1.77	2.65	2.30	4.80

Genotype	DFMF	DFFF	NFFA	DF	SR	DFH	DF	VL45D	VL90D	B45D	B90D
Chikkamagaluru Local	37.60	49.50	7.20	56.70	27.62	61.60	113.90	1.73	2.64	2.50	4.90
Dharwad Local	33.60	45.80	7.20	53.10	17.15	58.10	97.90	1.86	2.70	2.50	5.00
Hosur Local	35.00	48.00	7.40	54.30	22.40	58.70	103.70	2.02	2.88	2.40	5.20
Bagalkot Local	37.60	49.60	7.80	56.30	26.40	62.00	108.00	0.55	1.30	2.00	3.70
Bangarpet Local	35.70	49.70	7.13	56.60	22.12	62.40	111.80	1.31	2.22	2.00	3.80
KGF Local	35.40	46.00	7.80	54.60	26.11	59.30	105.50	0.76	1.49	1.90	3.60
Kolar Local	33.90	46.40	7.80	53.70	18.57	57.20	105.30	2.18	3.00	2.70	4.60
Annihalli Local-1	45.00	53.00	7.80	60.70	15.12	65.00	114.70	1.12	2.04	1.80	3.30
Annihalli Local-2	33.60	45.50	7.80	52.60	14.31	57.70	98.10	1.35	2.24	2.00	4.00
CO-1	42.30	51.50	7.80	58.60	13.56	61.40	105.40	2.05	2.97	2.60	4.70
Swarna Uphar	38.80	48.40	7.60	56.50	17.74	65.40	114.50	2.15	2.84	2.60	4.90

Swarna Manjeri	42.80	46.90	7.60	55.00	14.56	58.70	100.40	1.79	2.78	2.70	5.00
Satputia	37.90	46.35	7.80	51.20	3.45	56.10	102.50	1.55	2.65	2.75	4.85
Arka Sujath	39.00	48.25	8.10	53.55	25.32	59.85	106.05	2.40	4.60	3.75	6.35
Arka Prasan	34.50	44.90	7.90	51.90	24.02	57.20	107.10	1.59	2.46	2.40	4.40
Arka Vikram	33.50	45.30	7.20	53.60	17.81	58.20	100.30	1.78	2.79	2.40	4.40
Arka Sumeet	38.11	46.10	7.50	54.10	26.18	56.70	107.40	2.05	4.30	3.75	6.75
Jaipur Long (Check)	38.00	48.70	7.80	55.80	20.27	59.40	109.50	1.14	2.07	2.20	4.10
Mean	37.10	47.19	7.48	54.09	21.62	58.05	104.32	1.45	2.35	2.30	4.27
C.V	4.29	4.68	3.16	3.70	1.95	2.63	3.44	15.01	13.86	12.32	10.94
F ratio	7.23	4.91	3.98	5.52	265.10	11.92	4.63	11.07	10.08	5.40	6.67
S.E.	1.12	1.56	0.16	1.41	0.29	1.08	2.54	0.15	0.230	0.20	0.33
C.D.5%	3.21	4.47	0.47	4.0	0.85	3.09	7.260	0.44	0.659	0.574	0.94

S\*Bold values indicate maximum and minimum mean performance

DFMF- Days to first male flower appearance, DFFF- Days to first female flower appearance, NFF-Node at Which first female flower appeared, DFF- Days to 50 per cent flowering, SR- Sex ratio, DFH- Days to first harvest, DF- Days to final

harvest, VL45D- Vine length at 45 DAS, VL90D- Vine length at 90 DAS, B45D- Number of primary branches appearance at 45 DAS, B90D- Number of primary branches appearance at 90 DAS.

**Table 2b:** Mean performance of various characters in ridge gourd (*Luffa acutangula* (L.) Roxb.) Genotypes

Genotype	FL	FD	RT	FT	FC	TSS	VIT C	MC	AFW	FPP	FYPP	FYPH
Rg-74	26.35	4.48	4.58	2.87	1.71	3.50	3.20	92.86	193.43	9.32	1.80	11.20
Rg-80	19.95	5.34	5.32	3.70	2.10	3.29	4.32	95.64	183.25	11.35	2.08	12.88
Rg-84	25.27	3.54	3.56	2.57	1.52	3.58	4.37	92.70	179.40	11.55	2.44	15.14
Rg-91	25.23	3.85	3.99	2.60	1.81	3.73	4.57	89.06	209.91	9.05	1.90	11.79
Rg-92	25.06	3.64	5.17	1.93	2.15	4.76	4.46	90.78	114.89	9.55	2.04	12.63
Rg-93	21.33	3.42	3.55	2.73	1.88	4.64	4.58	95.13	105.95	12.35	1.30	8.05
Rg-95	21.93	3.56	3.62	2.71	1.67	4.47	4.42	95.90	132.44	12.64	1.68	10.40
Rg-97	26.42	2.98	2.92	2.59	1.91	5.37	4.54	92.67	73.92	10.85	0.80	4.98
Rg-99	20.92	3.70	3.81	2.66	1.74	4.65	4.58	90.93	143.55	11.85	1.71	10.58
Rg-102	28.35	4.55	5.25	3.29	1.62	4.54	4.34	85.51	126.29	10.17	1.28	7.95
Rg-112	11.45	6.08	5.19	5.17	2.30	3.49	3.53	93.88	88.38	10.67	0.94	5.85
Rg-120	25.07	3.74	4.64	2.82	2.41	4.93	4.34	91.01	169.51	9.92	1.67	10.37
RV-1	16.05	4.56	4.40	3.46	1.76	3.58	3.20	87.08	165.56	10.27	1.70	10.53
RV-2	14.58	4.96	4.39	3.92	1.60	3.50	3.20	87.86	177.12	10.06	1.78	11.02
RV-3	16.70	4.24	4.47	3.91	1.35	2.62	3.37	87.23	192.45	9.77	1.88	11.64
RV-4	17.13	4.39	4.56	2.96	1.92	2.65	3.33	88.60	185.41	10.52	1.95	12.07
RV-5	18.23	4.34	4.26	4.06	1.88	3.37	3.38	89.56	190.28	9.92	1.88	11.67
RV-6	16.96	5.52	4.57	4.46	1.89	3.49	3.80	93.08	150.42	11.17	2.13	13.19
ERG-1	16.91	4.84	3.59	3.34	2.21	3.73	3.93	93.78	132.88	11.67	1.55	9.62
ERG-4	16.67	5.56	4.60	4.58	2.69	4.45	3.83	90.44	187.25	13.42	1.17	7.24
IC-523892	13.07	5.32	5.30	3.85	2.48	4.67	3.35	90.72	233.11	13.42	2.49	15.42
IC-539714	11.93	5.22	4.62	2.83	2.58	3.51	3.45	95.18	226.06	13.10	1.28	7.95
Yerrabalem Local	15.08	4.37	5.15	3.66	1.78	4.96	3.25	91.61	213.78	12.13	2.25	13.96

Genotype	FL	FD	RT	FT	FC	TSS	VIT C	MC	AFW	FPP	FYPP	FYPH
Chitrada	21.33	3.98	4.56	3.03	1.50	4.51	3.71	90.37	165.23	12.17	2.00	12.41
Chikkamagaluru Local	32.11	5.59	5.67	4.03	2.31	4.74	3.49	88.16	306.21	14.17	4.26	26.38
Dharwad Local	24.99	5.22	4.01	4.65	2.59	5.22	3.35	92.22	293.48	13.92	3.40	21.05
Hosur Local	24.08	4.45	4.88	3.55	1.88	3.45	4.31	95.24	241.32	13.60	3.22	19.96
Bagalkot Local	17.30	5.22	4.56	4.06	1.60	2.85	3.81	91.42	187.21	10.17	1.90	11.79
Bangarpet Local	22.69	5.14	4.73	3.71	1.90	4.97	3.72	94.30	161.67	12.17	1.96	12.13
KGF Local	24.05	3.99	3.77	2.25	2.40	4.52	4.14	96.21	162.86	10.42	1.70	10.52
Kolar Local	24.09	3.47	3.03	3.24	2.70	4.78	4.40	94.42	107.74	9.92	2.24	13.90
Annihalli Local-1	28.31	4.81	4.14	3.06	1.20	5.37	4.05	94.86	98.10	9.67	1.39	8.61
Annihalli Local-2	17.00	4.21	2.83	2.11	1.40	4.45	3.95	91.96	161.01	10.42	1.68	10.40
CO-1	27.69	4.78	3.53	3.30	1.78	3.63	3.37	90.89	165.97	10.67	1.77	10.96
Swarna Uphar	24.38	4.16	5.02	2.83	2.19	4.44	4.16	94.60	182.17	11.92	2.04	12.63
Swarna Manjeri	23.54	4.66	4.78	3.75	2.69	4.12	4.23	90.06	152.25	11.92	1.81	11.24
Satputia	19.40	3.71	4.40	2.30	2.27	4.55	4.02	94.00	36.85	11.92	0.44	2.72
Arka Sujath	31.93	3.33	3.62	2.81	2.53	5.49	4.01	94.80	169.85	12.67	2.15	13.34
Arka Prasan	26.75	4.52	3.98	3.68	1.89	3.57	4.54	94.91	170.19	11.92	2.22	13.78
Arka Vikram	27.55	3.95	4.70	3.32	2.31	3.62	4.41	93.54	160.62	12.17	1.95	12.10
Arka Sumeet	29.25	3.21	3.69	3.43	2.50	5.55	3.73	96.67	161.55	11.92	1.92	11.92
Jaipur Long (Check)	32.52	4.33	4.69	2.77	1.67	5.24	3.95	95.51	149.19	10.17	1.52	9.41
Mean	22.13	4.40	4.33	3.30	2.00	4.20	3.92	92.27	166.87	11.34	1.88	11.70
C.V	9.90	6.68	5.23	7.36	2.33	3.76	1.23	0.60	7.81	10.14	12.41	12.41
F ratio	12.91	12.88	18.32	17.72	147.81	50.32	182.77	45.7	31.13	2.76	15.51	15.51
S.E.	1.55	0.20	0.16	0.17	0.03	0.11	0.03	0.41	9.22	0.81	0.16	1.02
C.D.5%	4.43	0.59	0.45	0.49	0.09	0.31	0.09	1.19	26.34	2.32	0.47	2.93

FL: Fruit length (cm), FD: Fruit diameter (cm), RT: Rind thickness (mm), FT: Flesh thickness (cm), FC: Fiber content (g/100 g), TSS: Total soluble solids(°B), VIT C: Vitamin C (mg/100 g), MC: Moisture content (%), AFW: Average fruit weight (g), FPP: Number of fruits per plant, FYPP: Fruit yield per plant (kg), FYPH: Fruit yield per hectare (q/ha).

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