

## Research Article

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# Evaluation of F<sub>1</sub> Hybrids of Ridge gourd [*Luffa acutangula*, (Roxb. L.)] for Growth, Quality and Yield



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## ABSTRACT

The present investigation entitled “Evaluation of F<sub>1</sub> hybrids of ridge gourd [*Luffa acutangula* (L.) Roxb.]” was conducted during Kharif 2021 at AICRP on Vegetable Crops, Department of Horticulture, MPKV, Rahuri, comprising 22 treatments (20 hybrids and 2 check cultivars) with 2 replications using simple RBD. The hybrid COH-1 × Karjat Local recorded the longest vine length (9.95 m) and the maximum number of primary branches per vine (8.40). This hybrid also showed the minimum days for the first male flower (33.70 days), first female flower (36.60 days), and earliest fruit harvest (44.10 days). It had the lowest sex ratio (4.78) and node at the first female flower (10.80), with minimum days for 50% of plants to produce flowers in COH-1 × Nidhi (39.50 days). Maximum fruit weight was observed in COH-1 × Arka Sujata (199.43 g) and maximum fruit length in Arka Sujata × Nidhi (46.95 cm). The hybrid Arka Sujata × Nidhi recorded the maximum fruit diameter at the center (4.53 cm), the fruit diameter at the pedicel was highest in Navin Long × Krishna-51 (1.94 cm), and the maximum fruit diameter at the stylar end was in Arka Sujata × Krishna-51 (3.67 cm). The highest number of fruits per vine was in COH-1 × Karjat Local (19.20), resulting in the highest fruit yield per plant (4.30 kg) and per hectare (24.67 t/ha). All hybrids had elongate fruit shape with 10 ridges. Hybrids COH-1 × Karjat Local, COH-1 × Banaras Local, and COH-1 × Arka Sujata were superior for most characters based on mean performance.

**Keywords:** Crop performance, Evaluation, Fruit characteristics, Fruit yield, F<sub>1</sub> hybrids

## INTRODUCTION

The family Cucurbitaceae is one of the most diverse groups of crops in the plant kingdom. It is moderately a large family consisting of 118 genera and 825 species [9]. India has about 37 genera and 100 species. Some of the genera are *Momordica* (about 45 species), *Trichosanthes* (44 species), *Cucumis* (25 species), *Cucurbita* (15 species), *Lagenaria* (6 species), *Luffa* (6 species) and *Echinocystis* (15 species). Ridge or ribbed gourd (*Luffa acutangula* Roxb., 2n=26) originated in India. It is a popular Cucurbitaceous vegetable grown as a spring and summer season crop. The fruits have 10 prominent longitudinal ridges [11]. Thus, the plant is also described as “angular loofah,” “Chinese okra,” “ridged gourd,” or “fluted loofah.” Ridge gourd is one of the least expensive vegetables to produce. The crop is cultivated in India, Indonesia, Malaysia, Myanmar, Philippines, Sri Lanka and Taiwan. It is an annual, monoecious cross-pollinating, running vine plant consisting of a long taproot system, and simple, sharply angled 5-lobed leaves, and the fruits are dark green vegetables having white pulp with black seeds embedded in spongy flesh. Fruits vary in size and may be oblong or club-shaped. Cultivated species of ridge gourd are monoecious with different sex forms viz. androecious, gynoecious, gynomonoecious, andromonoecious, and hermaphrodite plants are also reported [4]. It is rich in vitamins A, C, and Fe [24].

India is the second largest producer of vegetables with 2.8 per cent of area under vegetable production. In 2020, some 1.15 billion metric tonnes of vegetables were produced worldwide (statistics). The per capita availability is 145g as against the recommended requirement of 300g (Anon., 2021a). In India, it occupies 1,10,65,000 ha area with 19,98,82,000 metric tonnes of production whereas in Maharashtra 9,62,130ha area with 1,42,12,360 metric tonnes. The major vegetable-producing states are West Bengal, Uttar Pradesh, and Madhya Pradesh (Anon., 2020-21b). Ridge gourd fruit is often used as a disinfectant, anti-thelmintic, anti-diarrhea, anti-syphilitic, and laxative [18].

The pistillate and staminate flowers may occur in the same axil also the flowers of ridge gourd start anthesis in the evening remain open throughout the night and are ready for selfing and pollination in the early morning/forenoon [19]. Ridge gourd is typically planted during January-February for the summer season and June-July for the rainy season. In India, farmers continue to grow local strains commercially, leading to significantly low yields. Thus, there is a pressing need to focus on developing high-yield hybrids. Harnessing hybrid vigor is a recognized and valuable approach to enhance genetic improvements in yield and its contributing traits in ridge gourd. Presently many vegetable crops are now dominated by hybrid varieties [10], so it's important to understand their benefits. These advantages include consistent quality (uniformity), stronger growth (increased vigor), earlier harvests (earliness), greater yields, and resistance to specific diseases and insects (pests and pathogens). To identify genotypes that mature quickly, we can look at traits like when the first female flowers open, the node where the first female flower appears, and the number of days until fruit picking.

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Collecting and evaluating different plant varieties (germplasm) is crucial for using them in breeding programs. The large number of hybrid seeds produced from each cross makes F1 seed production in ridge gourd more cost-effective, especially when using male sterility for large-scale hybrid seed production [8]. This research investigated F1 hybrids in ridge gourds to assess their various horticultural characteristics.

## MATERIALS AND METHODS

The present investigation entitled "Evaluation of F<sub>1</sub> hybrids of ridge gourd [*Luffa acutangula* (L.) Roxb]" was conducted during the period from Kharif 2021 at AICRP on Vegetable Crops, Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri. The basic materials for the experiment were comprised of 20 hybrids viz, COH-1 × Karjat Local, COH-1 × Banaras Local, COH-1 × Arka Sujata, COH-1 × Nidhi, COH-1 × Navin Long, COH-1 × NRG-9, COH-1 × Krishna-51, Karjat Local × Banaras Local, Karjat Local × Nidhi, Karjat Local × Navin Long, Karjat Local × NRG-9, Karjat Local × Krishna-51, Banaras Local × Arka Sujata, Banaras Local × Nidhi, Arka Sujata × Nidhi, Arka Sujata × Navin Long, Arka Sujata × NRG-9, Arka Sujata × Krishna-51, Navin Long × Krishna-51, NRG-9 × Krishna-51. These hybrids were evaluated in the field with standard checks (Naga and Pusa Nasdar). The experiment was laid out in a Randomized Block Design with two replications. Each plot had a size of 5.0 × 1.5 m<sup>2</sup>, with a spacing of 1.5 m × 1.0 m between plants, and all the management practices as recommended by Mahatma Phule Krishi Vidyapeeth were adopted to raise a healthy crop. The sowing of seeds took place on June 23, 2021, and each plot consisted of five ridge gourd plants.

The collected observational data encompasses the following traits: vine length (meters), number of primary branches per vine, days to the appearance of the first male and female flowers, days to 50% flowering, node position of the first female flower, sex ratio, days to first fruit harvest, quantitative fruit traits (average fruit weight in grams, fruit length in centimeters, fruit diameter at the center, pedicel, and stylar ends in centimeters), qualitative fruit traits (shape, color, and number of ridges), number of fruits per vine, fruit yield per vine (kilograms), and fruit yield per hectare (tons per hectare).

## RESULTS AND DISCUSSION

### Growth Parameters

From a production perspective, vine length and the number of primary branches per plant are critical growth parameters. Hybrids with greater vine length and a higher number of primary branches tend to yield better. Evaluation of vine length among ridge gourd hybrids revealed substantial variability. The mean performance of ridge gourd hybrids for vine length and number of primary branches per plant is summarized in Table 1. Vine lengths of the hybrids ranged from 4.05 meters to 9.95 meters, with an overall average of 5.85 meters. The hybrid COH-1 × Karjat Local exhibited the longest vine length at 9.95 meters, which was statistically comparable to hybrids COH-1 × Navin Long (8.15 meters) and COH-1 × Arka Sujata (8.01 meters). The shortest vine length was observed in the hybrid Karjat Local × NRG-9 (4.05 meters), consistent with findings reported by [13] and [22]. Significant differences were also observed among the hybrids for the number of primary branches per vine, which ranged from 5.25 to 8.40, with an overall mean of 6.20. The hybrid COH-1 × Karjat Local recorded the highest number of primary branches per vine (8.40), followed by NRG-9 × Krishna-51 (8.17) and COH-1 × Nidhi (8.05).

Conversely, the hybrid Karjat Local × NRG-9 had the fewest primary branches per vine (5.25). These findings align with those reported by [7].

### Flowering Character

Table 1 summarizes the mean performance of ridge gourd hybrids for various flowering attributes. The days to the appearance of the first male flower ranged from 33.70 to 43.90 days, with an average of 34.98 days. The hybrid COH-1 × Karjat Local (33.70 days) was the earliest to exhibit the first male flower, followed by COH-1 × Banaras Local (36.10 days) and COH-1 × Navin Long (36.30 days). In contrast, the hybrid Arka Sujata × Krishna-51 required the most time (43.90 days) for the first male flower to appear. These findings align with the results reported by [21]. The days to the appearance of the first female flower ranged from 36.60 to 47.60 days, with a mean of 38.43 days. The hybrid COH-1 × Karjat Local exhibited the earliest appearance of the first female flower (36.60 days), which was statistically comparable to COH-1 × Banaras Local (39.20 days), Pusa Nasdar-(C2) (39.40 days), and Karjat Local × Banaras Local (39.60 days). The hybrid Arka Sujata × Krishna-51 took the longest time (47.60 days) for the first female flower to appear, in line with the findings of [12]. For the attribute of days to 50% flowering, the hybrid COH-1 × Nidhi recorded the shortest duration (39.50 days), followed by COH-1 × Karjat Local (40.10 days) and COH-1 × Banaras Local (40.70 days). Conversely, the hybrid Arka Sujata × NRG-9 required the most days (51.10) for 50% of the plants to produce female flowers, corroborating the results of [14]. The sex ratio (male to female flowers) was lowest in the hybrid COH-1 × Karjat Local (4.78), which was statistically similar to COH-1 × Banaras Local (6.70) and COH-1 × Navin Long (6.98). The sex ratio ranged from 4.78 to 6.70, with an overall mean of 8.79. These findings are consistent with those reported by [5]. The number of nodes in the first female flower varied from 10.80 to 21.75, with an overall mean of 14.87 nodes. The hybrid COH-1 × Karjat Local had the fewest nodes (10.80) to the first female flower, followed by COH-1 × Banaras Local (11.25) and COH-1 × Arka Sujata (11.60), which aligns with the results of [5].

The days required for the first fruit harvest ranged from 44.10 to 55.30 days, with a mean of 45.41 days. The hybrid COH-1 × Karjat Local (44.10 days) was the earliest to reach the first harvest, statistically comparable to COH-1 × Banaras Local (46.90 days), COH-1 × Arka Sujata (47.15 days), COH-1 × Nidhi (47.70 days), COH-1 × Navin Long (48.05 days), Karjat Local × Banaras Local (47.59 days), Karjat Local × Nidhi (46.60 days), NRG-9 × Krishna-51 (46.57 days), and Naga-(C1) (47.40 days). In contrast, the hybrid Arka Sujata × NRG-9 took the longest time (55.30 days) for the first harvest. Similar trends were observed by [3] and [7].

### Fruit Characters (quantitative)

The mean performance of ridge gourd hybrids for various fruit characteristics is detailed in Table 1. The average fruit weight ranged from 152.66 g to 199.43 g, with an overall mean of 159.91 g. The hybrid COH-1 × Arka Sujata exhibited the highest statistically significant fruit weight (199.43 g), which was on par with COH-1 × Karjat Local (192.70 g), Arka Sujata × NRG-9 (190.88 g), Pusa Nasdar-(C2) (186.63 g), Naga-(C1) (185.40 g), NRG-9 × Krishna-51 (183.39 g), Navin Long × Krishna-51 (180.19 g), Arka Sujata × Nidhi (176.72 g), Karjat Local × Banaras Local (176.31 g), and COH-1 × Banaras Local (177.25 g). The lowest fruit weight was observed in Arka Sujata × Krishna-51 (152.66 g), aligning with the findings of a previous study [20].

Regarding fruit length, the ridge gourd hybrids ranged from 31.31 cm to 46.95 cm, with a mean of 36.45 cm. The hybrid Arka Sujata × Nidhi recorded the maximum fruit length (46.95 cm), followed by Banaras Local × Arka Sujata (46.60 cm), Banaras Local × Nidhi (44.60 cm), and COH-1 × Arka Sujata (44.00 cm). The shortest fruit length was noted in Arka Sujata × Krishna-51 (31.31 cm), consistent with earlier research [17]. The diameter of ridge gourd fruit at the center varied from 2.8 cm to 4.53 cm, with an average of 3.65 cm. Arka Sujata × Nidhi had the highest fruit diameter at the center (4.53 cm), comparable to COH-1 × Banaras Local (4.44 cm). The smallest diameter was observed in Karjat Local × Krishna-51 (2.59 cm), similar to previous findings [23]. The fruit diameter at the pedicel ranged from 1.52 cm to 1.94 cm, averaging 1.61 cm. The hybrid COH-1 × NRG-9 exhibited the minimum pedicel diameter (1.52 cm), while Navin Long × Krishna-51 showed the maximum (1.94 cm), followed closely by Pusa Nasdar-(C2) (1.90 cm). These results are consistent with those reported in earlier studies [6]. Lastly, the diameter of ridge gourd fruit at the styler end ranged from 2.30 cm to 3.67 cm, with an average of 2.58 cm. The minimum diameter was recorded in Naga (C1) (2.30 cm), while the maximum was observed in Arka Sujata × Krishna-51 (3.67 cm), which was comparable to Banaras Local × Nidhi (3.13 cm) and Arka Sujata × NRG-9 (3.11 cm). These observations align with previous research [6].

#### Yield Parameters

The mean performance of ridge gourd hybrids for yield and yield-related attributes is detailed in Table 2. The number of fruits per vine varied from 8.55 to 19.20, with an average of 11.38. The hybrid COH-1 × Karjat Local produced the highest number of fruits per vine (19.20), which was statistically comparable to COH-1 × Banaras Local (16.20), followed by COH-1 × Nidhi (15.50), COH-1 × Navin Long (15.20), Naga (C1) (14.90), and COH-1 × Arka Sujata (14.85). The hybrid Karjat Local × Navin Long exhibited the lowest number of fruits per vine (8.55). These findings are consistent with the results reported by [13] and [22]. The average fruit yield per vine ranged from 1.31 kg to 3.70 kg, with a mean yield of 2.03 kg. The hybrid COH-1 × Karjat Local achieved the highest fruit yield per vine (3.70 kg), which was statistically similar to COH-1 × Banaras Local (3.55 kg), followed by COH-1 × Arka Sujata (2.97 kg), Naga (C1) (2.76 kg), and NRG-9 × Krishna-51 (2.68 kg). The lowest yield per plant was recorded in the hybrid Karjat Local × NRG-9 (1.31 kg), corroborating the findings of [7]. The average fruit yield of ridge gourd across hybrids ranged from 8.71 t/ha to 24.67 t/ha, with an overall mean of 13.55 t/ha. The hybrid COH-1 × Karjat Local demonstrated superior performance with a yield of 24.67 t/ha, statistically similar to COH-1 × Banaras Local (23.65 t/ha), followed by COH-1 × Arka Sujata (19.77 t/ha) and Naga (C1) (18.41 t/ha). The lowest fruit yield was observed in the hybrid Karjat Local × NRG-9 (8.71 t/ha), aligning with the observations reported by [13].

#### Qualitative Fruit Characters

The performance of ridge gourd hybrids for fruit quality attributes presented in Table 2. As regards fruit shape in ridge gourd, the result found that all the hybrids observed elongate in shape. These results coincide with the results recorded by [16]. The color of different hybrids classified as light green, green, and dark green. In case of fruit color in ridge gourd, the hybrids COH-1 × Karjat Local, COH-1 × Nidhi, COH-1 × Krishna-51, Karjat Local × Banaras Local, Banaras Local ×

Arka Sujata, Banaras Local × Nidhi, Arka Sujata × Nidhi, Arka Sujata × Navin Long, Arka Sujata × NRG-9, NRG-9 × Krishna-51 and Pusa Nasdar-(C<sub>2</sub>), were observed in light green, while the hybrids COH-1 × Banaras Local, COH-1 × Navin Long, COH-1 × NRG-9, Karjat Local × Nidhi, Karjat Local × Navin Long, Karjat Local × NRG-9, Karjat Local × Krishna-51, Arka Sujata × Krishna-51, Navin Long × Krishna-51 and Naga-(C<sub>1</sub>) and observed in green color. The hybrid COH-1 × Arka Sujata was observed in dark green color. The result with respect to the number of ridges indicates that all the hybrids and check varieties observed 10 ridges on the fruit surface. Similar result was also reported by [15].



COH-1 × Karjat Local



COH-1 × Banaras Local



COH-1 × Arka Sujata



COH-1 × Nidhi

Figure: Some promising hybrids of ridge gourd

#### CONCLUSIONS

The analysis of variance showed that significant differences existed among the hybrids for most of the characters, showing possibilities of the potential of high yielding and its attributes. The results from the present investigation concluded that the ridge gourd hybrids viz., COH-1 × Karjat Local, COH-1 × Banaras Local, and COH-1 × Arka Sujata were identified as the superior hybrids in terms of growth, yield, and quality. However, since these results are based on season experiments therefore further trials for testing adaptability and stability may substantiate the results and can be used for commercial exploitation. This experimental setup allowed us to comprehensively assess the performance and characteristics of these F<sub>1</sub> hybrids, contributing valuable insights to the cultivation and breeding of ridge gourd varieties.

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**FUTURE SCOPE**

Validation of the findings warrants the repetition of the investigation. Such additional testing will reinforce the findings and facilitate their potential commercial application. This comprehensive assessment of F<sub>1</sub> hybrid performance and characteristics provides valuable insights, contributing significantly to the cultivation and breeding of ridge gourd varieties.

**CONFLICT OF INTEREST**

The authors have declared that no competing interests exist.

*Table 1: Performance of ridge gourdhbrids for growth, yield and other phenotypic traits during kharif season*

Hybrids	LV (m)	NPPV	DFMF	DFF	DTF	SR	NFF	DFH	AFW (g)	LF (cm)
COH-1 × Karjat Local	9.95	8.40	33.70	36.60	40.10	4.78	10.80	44.10	192.70	38.49
COH-1 × Banaras Local	7.87	7.34	36.10	39.20	40.70	6.70	11.25	46.90	177.25	43.70
COH-1 × Arka Sujata	8.01	7.60	37.60	40.30	42.80	7.57	11.60	47.15	199.43	44.10
COH-1 × Nidhi	7.75	8.05	36.40	39.90	39.50	7.35	12.30	47.70	166.67	42.70
COH-1 × Navin Long	8.15	7.88	36.30	40.80	41.40	6.98	12.65	48.05	165.33	35.80
COH-1 × NRG-9	5.86	6.30	37.50	42.30	43.80	10.78	16.75	48.80	175.74	34.70
COH-1 × Krishna-51	5.96	6.55	37.80	41.80	45.80	8.01	17.86	50.30	172.83	38.80
Karjat Local × Banaras Local	6.35	6.40	36.60	39.60	41.90	8.79	13.55	47.59	176.31	37.00
Karjat Local × Nidhi	6.10	6.25	37.10	42.10	47.10	8.93	14.75	46.60	174.85	40.50
Karjat Local × Navin Long	4.75	5.60	41.50	43.20	46.50	14.80	21.35	51.85	167.56	36.73
Karjat Local × NRG-9	4.05	5.25	42.60	45.80	46.90	16.70	21.75	53.59	172.23	37.60
Karjat Local × Krishna-51	4.65	6.20	41.40	43.70	46.30	15.10	21.30	50.35	172.52	36.30
Banaras Local × Arka Sujata	6.35	7.40	37.80	42.30	45.20	8.35	20.96	49.25	175.21	46.60
Banaras Local × Nidhi	4.85	5.90	38.60	43.30	46.28	8.23	19.04	50.10	171.61	44.60
Arka Sujata × Nidhi	5.40	6.50	38.50	43.10	47.40	8.80	17.96	52.15	176.72	46.95
Arka Sujata × Navin Long	6.20	5.90	37.90	42.45	46.70	7.20	15.54	50.80	173.93	39.60
Arka Sujata × NRG-9	6.10	6.60	42.30	47.20	51.10	14.75	21.15	55.30	190.88	37.63
Arka Sujata × Krishna-51	4.60	6.20	43.90	47.60	49.70	13.40	21.50	54.80	152.66	31.31
Navin Long × Krishna-51	6.43	7.84	36.90	42.60	47.10	8.56	12.90	49.77	180.19	38.80
NRG-9 × Krishna-51	6.98	8.17	37.20	39.60	41.30	7.38	11.95	46.57	183.39	43.20
Naga (Check - 1)	7.54	6.75	37.90	40.30	43.70	7.99	13.63	47.40	185.40	40.40
Pusa Nasdar (Check - 2)	6.88	7.15	38.70	39.40	45.50	7.50	16.71	48.40	186.63	38.05
General Mean	5.85	6.20	34.99	38.43	40.80	8.80	14.87	45.41	159.91	36.45
S.E. ±	0.67	0.60	1.36	1.28	1.27	0.89	0.89	1.38	8.32	3.15
C. D. at 5 %	1.96	1.76	3.99	3.77	3.74	2.40	2.62	4.06	23.30	9.26
C. V. (%)	14.28	15.31	10.10	11.14	10.42	2.32	13.74	10.34	14.86	13.83

**Note:** LV = Length of vine, NPPV = Number of primary branches per vine, DFMF = Days required for appearance of first male flower, DFF = Days required for appearance of first female flower, DTF = Days to 50 % flowering, SR = Sex ratio, NFF = Node at which first female flower appeared, DFH = Days required for first harvest of fruit, AFW = Average fruit weight, LF = Length of fruit,

*Table 2: Performance of ridge gourdhbrids for growth, yield and other phenotypic traits during kharif season*

Hybrids	FDC (cm)	FDP (cm)	FDS (cm)	NFV	YFV (kg)	FY (t/ha)	Shape	Color	No. of ridges
COH-1 × Karjat Local	3.53	1.69	2.75	19.20	3.70	24.67	Elongate	Light green	10
COH-1 × Banaras Local	4.44	1.77	3.07	16.20	3.55	23.65	Elongate	Green	10
COH-1 × Arka Sujata	3.65	1.58	2.84	14.85	2.97	19.77	Elongate	Dark Green	10
COH-1 × Nidhi	3.58	1.71	2.93	15.50	2.61	17.37	Elongate	Light green	10
COH-1 × Navin Long	3.70	1.61	2.45	15.20	2.59	17.24	Elongate	Green	10
COH-1 × NRG-9	3.50	1.52	2.82	10.80	1.91	12.73	Elongate	Green	10
COH-1 × Krishna-51	3.90	1.68	2.50	11.40	2.02	13.52	Elongate	Light green	10
Karjat Local × Banaras Local	3.74	1.77	2.77	12.60	2.29	15.24	Elongate	Light green	10
Karjat Local × Nidhi	3.50	1.85	3.06	12.40	2.15	14.30	Elongate	Green	10
Karjat Local × Navin Long	3.75	1.85	2.64	8.55	1.41	9.40	Elongate	Green	10
Karjat Local × NRG-9	3.65	1.76	2.33	7.40	1.31	8.71	Elongate	Green	10
Karjat Local × Krishna-51	2.80	1.85	2.53	8.70	1.49	9.99	Elongate	Green	10
Banaras Local × Arka Sujata	4.25	1.89	3.06	12.80	2.22	14.81	Elongate	Light green	10
Banaras Local × Nidhi	3.86	1.80	3.13	10.10	1.77	11.78	Elongate	Light green	10
Arka Sujata × Nidhi	4.53	1.89	2.77	11.30	1.89	12.65	Elongate	Light green	10
Arka Sujata × Navin Long	3.95	1.86	3.02	13.20	2.13	14.20	Elongate	Light green	10
Arka Sujata × NRG-9	4.25	1.74	3.11	8.90	1.71	11.39	Elongate	Light green	10
Arka Sujata × Krishna-51	3.75	1.85	3.67	9.35	1.39	9.28	Elongate	Green	10
Navin Long × Krishna-51	4.15	1.94	2.83	13.80	2.33	15.53	Elongate	Green	10
NRG-9 × Krishna-51	3.90	1.71	2.55	14.50	2.68	17.85	Elongate	Light green	10
Naga (Check - 1)	4.10	1.70	2.30	14.90	2.76	18.41	Elongate	Green	10
Pusa Nasdar (Check - 2)	3.95	1.90	3.02	12.20	2.27	15.18	Elongate	Light Green	10

General Mean	3.65	1.61	2.58	11.38	2.03	13.55	-	-	-
S.E. $\pm$	0.04	0.10	0.19	1.021	0.21	1.75	-	-	-
C. D. at 5 %	0.10	0.28	0.58	3.00	0.62	4.38	-	-	-
C. V. (%)	10.54	10.70	11.00	15.58	18.10	15.71	-	-	-

**Note:** FDC = Fruit diameter at centre, FDP = Fruit diameter at pedicel, FDS = Fruit diameter at styler end, NFV = Number of fruits per vine, YFV = Yield of fruits per vine, FY = Fruit yield

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