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# Evaluation of different genotypes on physical parameters of okra [*Abelmoschus esculentus* (L.) Moench.] under Lucknow region

**Rajesh Kumar, RS Verma, SS Verma, Dharmpal Singh, Akash Shukla and Som Prakash**

**Abstract**
A field experiment was conducted during 2017 at Horticulture Research Farm-II, BBAU, Lucknow, Studies on the "Evaluation of different genotypes on physical parameters of okra [*Abelmoschus esculentus* (L.) Moench.] under Lucknow region", revealed that fruit weight, fruit length, fruit diameter, no. of fruit per branches, fruit yield per plant were maximized. In the present study, 16 genotypes of okra were evaluated for four characters.

**Keywords:** Okra, physical parameters

## Introduction
Okra [*Abelmoschus esculentus* (L.) Moench.] are important vegetables crops in India. It is most popular vegetable around the world respect of area, production and availability. Bhindi is cultivated throughout the tropical and warm temperature regions of the world for its fibrous fruits or pods containing round, white seeds. It has occupied a prominent position among vegetables. Okra is known by many local names in different parts of the world. It is called lady's finger in England, Gumbo in U.S.A. and Bhindi in India. Okra is a polyploidy, belonging to the family Malvaceae with 2n =130 or 144 chromosomes. According to Vavilov (1951), it was probably domesticated in the Ethiopian region. Okra is an often-cross pollinated crop, occurrence of out crossing to an extent of 4 -19 % pollination. Okra is a flowering plant in the family Malvaceae. Okra is cultivated comprehensively in the tropical, subtropical and warm areas of the world like India, Africa. Edible fresh and mature fruits contain 88% moisture and large number of chemical components including Vitamin-A 88 IU, Vitamin-B 63 IU and Vitamin-C 13 mg/100 gm. Unripe okra fruits contain 3100 calorie energy, 1.8gm Protein, 90 mg Calcium and 1.0mg iron. Seeds of okra had the oil content 17.3%. It has Ayurvedic medicinal properties. Its leaves are used for preparing a medicament to reduce inflammation. It is an excellent source of Iodine for control of goiter (Chadha, 2001). It is also very useful against genito-urinary disorders, spermatorrhoea and chronic dysentery (Nandkarni, 1927) [4]. Fresh okra fruit are used as vegetable while the roots and stems are used for preparing "gur" or the brown sugar. Okra seeds are used for oil extraction. In India, okra is one of the most Okra plays a significant role in human nutrition by providing carbohydrates, protein, fat, minerals and vitamins that are generally deficient in basic foods. Okra is a vegetable valued for many of its properties. The fruits are used in making soup, salad and for flavouring when dried and powdered. The tender fruits contain minerals especially calcium, magnesium, iron and phosphorus, protein, vitamin A and C including riboflavin as well as high mucilage**.** Mature okra seeds are good sources of protein and oil and it has been known to be very important in nutritional quality. Its ripe fruit and stems contain crude fibre, which is used in the paper industry. Important vegetable crop grown for its tender green fruits during summer and rainy seasons.

## Material and methods
The experimental material for the present study consisted of sixteen genotypes of okra obtained from Indian institute of vegetable research, Varanasi (U.P.) the experiment was conducted using Randomized Block Design (RBD) with three replications at Horticulture Research Farm II of Department of Horticulture, Babasaheb Bhimrao Ambedkar University,

(A Central University), Vidya-Vihar, Rae Bareli Road, Lucknow-226025 (U.P.) were taken for the investigation during Kharif season of 2017-18. Observation were recorded for fruit weight, fruit length, fruit diameter, no. of fruit per branches, fruit yield per plant. The data so obtained were analysed statically.

**Result and discussion**

The genotype Kashi Satdhari was found significantly superior which was followed by Prabhani Kranti as compare to rest of the genotypes. Whereas, genotype EC-169347 was recorded fruit weight. Similar result was also reported by several other investigator like Prakash *et al.* (2001). Singh *et al.* (2003a) [11] and Sachan (2006) [10].

The genotype VRO-5 was found significantly superior which was followed by Kashi Satdhari as compare to rest of the genotypes. Whereas, genotype EC-169419 was recorded fruit length. Similar result was also reported by several other investigator like Prakash *et al.* (2001). Nwangburuka *et al.* (2012) [8].

The genotype Kashi Satdhari was found significantly superior which was followed by Prabhani Kranti as compare to rest of the genotypes. Whereas, genotype 1754 was recorded fruit diameter. Similar result was also reported by several other investigator like Singh *et al.* (2003) [11] and Nageswari *et al.* (2012) [9].

The number of fruits per branches of different genotypes of okra. It was recorded of the crop stages under study. The genotype Kashi Satdhari was found significantly superior and which was followed by Prabhani Kranti as compared to rest of the genotypes. Whereas, the minimum number of fruits per branches was recorded in genotype IIVR-11. Similar result was also reported by several other investigator like Hazra and Basu (2000) [6].

The number of fruits per plant of different genotypes of okra. It was recorded at 45, 60 and 75 days of crop stages after sowing. The genotype Kashi Satdhari was found significantly superior and which was followed by Prabhani Kranti as compared to rest of the genotypes. Whereas, the minimum number of fruits per plant was recorded in genotype IC-140920. Similar result was also reported by several other investigator like Reddy *et al.* (2013) [13] and Chaudhary *et al.* (2006) [5].

The genotype Kashi Satdhari was found significantly superior which was followed by HRB-55 as compare to rest of the genotypes. Whereas, genotype Pusa Sawani was recorded fruit yield per plant. Similar result was also reported by several other investigator like Patro and Ravi Sankar (2006), Kumar *et al.* (2011) [7] and Somashekhar and Salimath (2011) [12].

**Table 1:** Evaluation of different genotypes on physical parameters of okra [*Abelmoschus esculentus* (L.*)* Moench.] under Lucknow region.

| Treatment | Fruits weight (g) | Fruits length (cm) | Fruits diameter (cm) | number of fruits per branches | Number of fruits per plant | | | Fruits yield per plant |
|---|---|---|---|---|---|---|---|---|
| | | | | | 45 DAS | 60 DAS | 75 DAS | |
| $T_1$ IC-140920 | 16.890 | 11.480 | 1.580 | 4.850 | 3.957 | 4.593 | 8.803 | 67.573 |
| $T_2$158-10-1 | 16.913 | 9.793 | 1.486 | 4.733 | 4.173 | 5.607 | 9.287 | 68.877 |
| $T_3$ IC-12891 | 17.167 | 10.910 | 1.459 | 5.003 | 4.040 | 5.557 | 9.623 | 66.880 |
| $T_4$ VRO-5 | 15.903 | 13.337 | 1.438 | 4.820 | 4.173 | 6.437 | 8.993 | 67.873 |
| $T_5$ Summer IIVR-11 | 15.467 | 11.837 | 1.330 | 4.650 | 3.950 | 6.707 | 9.550 | 65.883 |
| $T_6$ Pusa Makhmali | 14.717 | 11.093 | 1.493 | 4.790 | 3.893 | 5.847 | 9.873 | 66.133 |
| $T_7$1754 | 15.893 | 11.260 | 1.384 | 4.863 | 4.120 | 6.557 | 9.323 | 66.203 |
| $T_8$ Arka Anamika | 18.200 | 11.633 | 1.579 | 4.783 | 4.023 | 6.183 | 8.977 | 65.867 |
| $T_9$ Pusa Sawani | 14.820 | 9.837 | 1.489 | 4.770 | 4.290 | 6.403 | 9.430 | 64.947 |
| $T_{10}$ EC-169419 | 15.037 | 8.603 | 1.586 | 4.733 | 4.203 | 5.947 | 9.447 | 66.893 |
| $T_{11}$ EC-169347 | 13.770 | 9.970 | 1.392 | 4.793 | 4.153 | 6.430 | 9.457 | 65.750 |
| $T_{12}$ HRB-55 | 15.157 | 11.023 | 1.521 | 4.857 | 4.430 | 6.563 | 9.430 | 70.940 |
| $T_{13}$157-10-1 | 15.913 | 11.743 | 1.473 | 4.703 | 4.043 | 5.833 | 10.010 | 66.933 |
| $T_{14}$ Kashi Satdhari | 18.183 | 11.873 | 1.675 | 6.790 | 4.687 | 8.027 | 10.993 | 72.967 |
| $T_{15}$ Prabhani Kranti | 17.260 | 11.817 | 1.649 | 6.607 | 4.357 | 7.033 | 10.800 | 70.710 |
| $T_{16}$ VRO-6 | 16.777 | 10.720 | 1.444 | 5.263 | 4.213 | 6.110 | 9.560 | 65.983 |
| SEm. (±) | 0.660 | 0.759 | 0.048 | 0.418 | 0.206 | 1.471 | 0.302 | 0.551 |
| C.D. (P=0.05) | 0.227 | 0.262 | 0.016 | 0.144 | 0.071 | 0.507 | 0.104 | 0.190 |

**Conclusion**

It is concluded that among the 16 genotypes of okra studied in the present investigation, Kashi Satdhari is the best performing genotype in respect of physical parameters followed Prabhani Kranti, HRB-55 and Pusa Sawani. Therefore, it is recommended to okra grown of subtropical region of to grow this Kashi Satdhari for better quality and yield.

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