

Evaluation of Promising Germplasm of Brinjal (*Solanum melongena* L.)

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Brinjal (*Solanum melongena* L.) also called eggplant, being native of India is one of the most common and principal vegetable crop grown throughout the year in the country. Genetic improvement of yield is a basic requirement of any crop breeding programme. The success of breeding programme depends on the magnitude and type of genetic variation in respect of yield, its component and other traits of economic importance. Therefore, to assess the extent of genetic variation and to identify most promising genetic stock for improvement the present investigation was carried out.

Brinjal germplasm comprising 54 lines was grown in randomised block design with two replications. The plot size was 2.4 m² with inter-and intra-row spacing of 60 x 50 cm. Recommended package practices were adopted to raise healthy crop. The observations were recorded on five competitive plants for yield/plant (q/ha), fruit weight (g), fruit length (cm), fruit breadth

(cm), days to first flowering, plant spread (cm) and plant height (cm) and data were analysed statistically following Panse and Sukhatme (1984).

The general mean SEM, CV for different traits is presented in Table 1. The days to first flowering range from 48.20 to 68.30 with an average of 55.87. The lines CH-494 and CH-684 were found earliest in flowering. The average plant height was recorded 69.25 cm. Among top performing lines maximum and minimum value was observed in genotype CH-684 (81.6 cm) and CH-554 (52.95 cm), respectively. Plant spread varied from 64.99 - 93.66 cm. Minimum and maximum plant spread was recorded in line CH-494 and CH-684, respectively. Maximum fruit weight 268.50 g was recorded in genotype CH-586. However, minimum fruit weight 43.75 g was noticed in IC-144083. The average value for this economic trait was 163.14 g. Average value for fruit length (cm) and breadth (cm) were 11.12 cm and 6.42 cm, respectively.

Table 1. Mean performance of top fifteen high yield promising germplasm

Acc.No.	Days to first flower	Plant height (cm)	Plant spread (cm)	Fruit weight (g)	Fruit length (cm)	Fruit breadth (cm)	Yield (q/ha)
1. CH-450	64.00	67.45	74.83	218.75	09.27	6.95	659.10
2. CH-575	52.40	73.80	87.91	206.25	09.52	8.47	643.55
3. CH-586	49.70	68.65	78.91	268.50	12.20	8.50	633.35
4. IC-144083	61.70	72.30	76.49	043.75	14.80	2.52	628.16
5. CH-769	54.70	61.30	74.05	212.50	09.27	8.32	594.75
6. CH-214	57.30	69.80	72.66	156.25	08.37	7.15	583.36
7. CH-721	64.60	56.60	77.40	168.75	10.90	6.80	582.25
8. CH-168	48.70	58.16	69.40	187.50	09.95	7.12	565.07
9. CH-554	55.00	52.95	80.21	150.00	06.22	6.22	563.95
10. CH-784	60.10	68.60	68.16	168.75	20.30	4.22	541.55
11. CH-494	48.20	57.45	64.99	118.75	10.25	5.40	522.90
12. CH-712	66.50	79.45	83.10	237.50	10.62	7.90	519.80
13. CH-684	68.30	81.65	93.66	125.00	13.80	5.27	517.90
14. CH-463	55.00	69.80	78.74	181.25	17.05	5.22	513.56
15. CH-828	51.70	72.10	83.32	162.50	10.52	6.27	511.45
General mean	55.87	69.25	72.59	163.14	11.12	6.42	438.97
F test	**	**	**	**	**	**	**
Sem ±	04.87	05.97	06.78	19.18	0.75	00.48	076.28
CV%	12.33	12.20	13.21	16.63	9.62	10.62	024.57
CD at 5%	13.74	16.85	19.12	54.11	2.13	01.36	215.12
CD at 1%	18.28	22.41	25.43	71.96	2.84	01.81	286.12

Fruit length ranged from 6.22 cm to 17.05 cm. Contrary to this fruit breadth ranged from 4.22 - 8.50 cm, exhibiting good scope for improvement in both the traits. Average yield of 438.97 q/ha among the genotypes were observed. It ranged from 511.45-659.10 q/ha among the top 15 promising lines. Highest yield was recorded in genotype CH-450 (659.10 q/ha) followed by CH-575 (643.55 q/ha), CH-586 (633.35 q/ha) and IC-144083 (628.16 q/ha). Therefore, it is evident that a considerable range of variability has been observed for all the traits under evaluation. The low estimates SEM and CV also suggested the presence of genetic variability with low

interference on non-genetic factors. Mishra and Mishra (1990), Nandi (1992) and Dutta (1988) also reported variation in germplasm of brinjal.

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