

SCREENING OF BRINJAL (*SOLANUM MELONGENA* L.) VARIETIES FOR BACTERIAL WILT RESISTANCE AND HIGHER YIELD IN ANDAMAN & NICOBAR ISLANDS

The brinjal (*Solanum melongena* L.) is probably a native to India and has been in cultivation for a long time. It is a strong annual garden shrub, grown for its large fruits in almost all parts of India. Nutritionally, brinjal can be compared with that of tomato. Brinjal fruits are good sources of riboflavin and said to be good for diabetic patients (Subramanian, 1986). The fruits of brinjal are excellent remedy for those suffering from liver troubles (Chadha, 1989). It is a very popular vegetable among farmers in Andaman & Nicobar Islands. Agro-climatic conditions, in addition to genetic factors, influence the performance of brinjal varieties. The bacterial wilt is a serious problem in these islands. Therefore, an

experiment was undertaken to evaluate some varieties / lines resistant to bacterial wilt which are suitable for Andaman & Nicobar Islands.

The investigation was carried out at the Central Agricultural Research Institute, Gara-charma Farm, Port Blair during October, 1996 to May, 1997. There were 19 brinjal varieties / lines with three replications and the experiment was laid out in RBD. The NPK were applied @ 120:80:60 kg ha⁻¹ at the time of transplanting. Rows were spaced at 60 cm apart and plants within row were at 45 cm. All cultural operations were done according to need of the crop. The experiment was planted

Table 1. Performance of brinjal varieties on growth and yield attributing characters

Varieties	Plant height (cm)	No. of branches/plant	Days to 50% flowering	No. of fruits / plant	Wt of fruit/plant (g)	Yield (t ha ⁻¹)
CHES-309	53.88	9.55	99.00	7.66	481	14.88
CHES-243	84.10	14.77	98.66	9.33	508	18.38
Purple Round	47.55	5.99	104.66	5.66	185	5.67
Arka Keshav	35.33	3.99	113.00	3.66	123	3.97
POC-1	66.99	9.66	106.33	4.66	170	6.69
BB-60-C	67.88	12.88	94.33	16.00	861	31.83
Green Oval Cluster (check)	63.44	11.88	103.00	23.33	653	24.04
BB-13-1	77.38	18.44	105.33	10.33	888	27.74
Arka Nidhi (check)	62.99	7.88	108.00	22.33	703	25.99
BB-44	9.22	1.77	0.00	0.00	0	0.00
BB-64	50.99	9.22	97.66	10.00	537	19.29
Composite-2	42.00	6.22	95.66	4.66	346	10.46
SM-6-6	53.00	10.33	93.00	13.00	680	11.75
95-4 Round	74.55	11.32	93.66	9.66	563	20.49
HOE-444	70.10	11.10	100.00	10.66	533	21.95
95-4 Oblong	39.77	7.77	97.66	12.00	831	15.47
BB-46	68.77	9.88	91.66	19.00	1036	38.28
CHES-249	44.22	7.22	94.66	7.00	597	23.34
JC-7	61.55	7.88	103.66	9.33	422	15.46
CD (0.05)	19.16	4.52	10.87	4.84	387	0.420

Check varieties: Green Oval Cluster (susceptible) and Arka Nidhi (resistant)

in bacterial wilt sick plot. The observations were recorded on plant height, number of branches/plant, days taken for 50 per cent flowering, number of fruits/plant, yield/plant, yield/ha and monthly survival percentage. There was significant difference in height of the plant amongst varieties and the maximum average height was recorded in variety CHES-243 followed by BB 13-1, 95-4 Round, HOE-444, and BB-46. The minimum height was

recorded in variety BB-44. The maximum number of branches/plant was recorded in variety BB-13-1 followed by CHES-243 and minimum in BB-44. Variety Arka Keshav has taken more days for 50% flowering after transplanting followed by Arka Nidhi, POC-1, BB-13-1, Purple Round, JC-7, Green Oval Cluster and minimum by BB-46. Maximum number of fruit/plant was recorded in variety Green Oval Cluster followed by Arka Nidhi

and the minimum fruits/plant was recorded in variety Arka Keshav. In case of weight of fruit/plant, the maximum yield (1036 g/plant) was recorded in variety BB-46 followed by varieties BB-13-1, BB-60 C, 95-4 Oblong, Arka Nidhi, SM-6-6, Green Oval Cluster and the minimum weight of fruit/plant was recorded in variety Arka Keshav (Table 1). As far as the yield is concerned, the highest yield

of fruit was recorded by the variety BB-46 followed by BB 60-C, BB-13-1, Arka Nidhi and the minimum yield was recorded in variety Arka Keshav. The varieties were evaluated for bacterial wilt or survival percentage at monthly interval up to 150 days of transplanting. The highest survival percentage was recorded in variety Arka Keshav (91.60%) followed by variety BB 60-C (90.0%), 95-4

Table 2. Survival percentage of brinjal varieties in A & N Islands against bacterial wilt disease

Varieties	Survival % 30 DAP	Survival % 60 DAP	Survival % 90 DAP	Survival % 120 DAP	Survival % 150 DAP
CHES-309	87.5	87.5	87.5	87.5	87.5
CHES-243	75.0	75.0	67.8	67.8	67.8
PurpleRound	61.0	61.0	55.8	55.8	55.8
Arka Keshav	91.6	91.6	91.6	91.6	91.6
POC-1	61.0	61.0	58.3	58.3	58.3
BB-60-C	90.9	90.9	90.9	90.9	90.9
G.O.C.	71.4	50.0	50.0	50.0	50.0
BB-13-1	81.5	71.0	71.0	71.0	71.0
Arka Nidhi	91.6	80.7	80.7	80.7	80.7
BB-44	34.3	14.1	10.0	0.0	0.0
BB-64	80.0	80.0	80.0	80.0	80.0
Composite-2	22.5	12.0	12.0	12.0	12.0
SM-6-6	57.6	23.0	15.3	15.3	15.3
95-4 Round	100	100.0	88.4	88.4	88.4
HOE-444	80.7	80.7	80.7	80.7	80.7
95-4 Oblong	51.0	50.0	29.6	29.6	29.6
BB-46	80.7	76.9	69.1	69.1	69.1
CHES-249	76.6	66.6	66.6	66.6	66.6
JC-7	66.6	66.6	61.1	61.1	61.1

Round (88.46%), CHES-309 (87.50%) and minimum survival was recorded in variety BB-44 (0.00%) after 150 days of transplanting, as the plants of this variety died before 50 per cent flowering and no yield was recorded (Table 2). A number of varieties/lines have been screened for wilt resistance by various workers and the results are comparable to those reported in the present study (Dutta, 1988, Nandi, 1992 and Yadav, 1996). Hence,

based on the results, it may be concluded that out of the 19 genotypes of brinjal, the BB-46 and BB-60 C were proved to be the most suitable varieties for Andaman and Nicobar Islands.

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