

## Original Research Article

# Performance of Brinjal (*Solanum melongena* L.) Genotypes for Yield and Quality Traits under Southern zone of Andhra Pradesh

Sadarunnisa Syed\*, R. V. S. K. Reddy, H. Begum and T. M. Reddy

Department of vegetable Science, College of Horticulture, Anantharajupeta, Dr. YSR Horticultural University, India

\*Corresponding author

## ABSTRACT

The present study was carried out at vegetable experimental farm, Division of Vegetable Science, College of Horticulture, Anantharajupeta during *rabi*, 2011-12, to evaluate the performance of fifty genotypes of brinjal for yield, quality and resistance to bacterial wilt. The highest number of fruits per plant were recorded in genotype A<sub>42</sub> (39.07) and maximum fruit yield per plant was recorded by the genotype A<sub>19</sub> (2104.50 g). A<sub>5</sub> recorded the highest ascorbic acid content (9.11 mg/100g) and the genotype A<sub>48</sub> recorded the lowest incidence of bacterial wilt (1.33%).

### Keywords

Brinjal,  
Performance,  
Genotypes, Yield,  
Quality and  
Bacterial wilt

## Introduction

Brinjal (*Solanum melongena* L.) is an important warm season, common, popular and principal vegetable crop grown widely in tropics and sub tropics and in temperate regions during summer. Tender brinjal fruit is primarily consumed as cooked vegetable in various ways. Brinjal is low in fat and high in dietary fibre. Brinjal is a good source of nutrients such as folate, ascorbic acid, niacin, vitamin B<sub>6</sub>, pantothenic acid, vitamin K, iron, magnesium, manganese, phosphorus, potassium, and copper (USDA 2009). It is rich in total water soluble sugars, free reducing sugars, amide proteins among other nutrients besides having low fat and high dietary fibre. Brinjal is known to be a good remedy for liver complaints and toothache. White brinjal is considered good

for diabetic patients. Extracts of brinjal are known to have significant effect in reducing blood and liver cholesterol rates. The peel or skin of brinjal has significant amounts of anthocyanins with antioxidant activity and protects against cancer, ageing, inflammation and neurological diseases (Hanur, 2010). The cultivated area of brinjal in India is about 0.68 million hectares with production of 12.7 million tonnes and productivity of 18.7 tonnes per hectare. Andhra Pradesh stands seventh among the states and has an area of 0.03 million hectares with a production of 0.57 million tonnes and productivity of 18.7 tonnes per hectare (Anon., 2013). Collection and evaluation of genotypes is imperative for genetic improvement of any crop. Keeping

this in view, the present study was undertaken to evaluate and select the best performing genotypes of brinjal based on their growth, yield and resistance to bacterial wilt under Southern zone of Andhra Pradesh.

## Materials and Methods

The present investigation was undertaken at College of Horticulture, Anantharajupeta, in Kadapa District of Andhra Pradesh. The experimental material comprised of a set of 50 genotypes (43 indigenous and 7 released varieties) of brinjal (Table1) which were obtained from NBPGR Regional Station, Rajendranagar, Hyderabad.

The experimental site is located at an elevation of 162 m above mean sea level. Geographically, it lies at  $13^{\circ}59'$  latitude and  $79^{\circ}19'E$  longitude. The trial was laid out in a randomized block design with three replications during *rabi* 2011-12. Planting of each genotype was done in a single row plot of 5m length accommodating 10 plants in a row with inter and intra row spacing of 60 and 50 cm respectively, with three replications. The recommended package of practices and plant protection measures were followed to raise a successful crop. Observations were recorded on five randomly selected plants in each plot on sixteen different traits *viz.*, plant height (cm), number of branches per plant, number of flower clusters per plant, number of flowers per cluster, days to first flowering, days to 50% flowering, days to first fruit harvest, days to last fruit harvest, no. of fruits per cluster, no. of fruits per plant, average fruit weight (g), fruit length (cm), fruit width (cm), yield per plant (g), ascorbic acid (mg/100g) and percent bacterial wilt incidence. The ascorbic acid content was estimated by the procedure suggested by Ranganna (1986). Bacterial wilt incidence

was recorded by artificial inoculation and screening the nursery of fifty genotypes of brinjal under a polyhouse. The mean data for all observations were pooled and statistically analyzed following standard procedure as suggested by Panse and Sukhatme (1967).

## Results and Discussion

The analysis of variance for 16 characters studied, including bacterial wilt incidence for 50 accessions of brinjal revealed highly significant differences among the genotypes for all the characters under study depicting greater diversity in the existing material. The mean performance of fifty brinjal genotypes is given in Table 2.

The plant height ranged from 89.93 cm ( $A_{18}$ ) to 116.73 cm ( $A_{44}$ ) with a grand mean of 104.69 cm. Twenty one genotypes exhibited significant tallness compared to check Bhagyamati. The highest number of branches were recorded by  $A_{28}$  (18.53) and the lowest were recorded by  $A_{50}$  (11.00). The works of Kumar *et al.*, (2011) and Nirmala *et al.*, (2013) reported a similar range for number of primary branches per plant.

Earliness parameters like days to first flowering and days to 50% flowering were minimum in  $A_{16}$  (33.80, 40.00) followed by  $A_{19}$  (35.13, 40.67). Twenty nine genotypes recorded significantly less number of days to 50% flowering compared to the check Bhagyamati. The early flowering genotype  $A_{19}$ , recorded the highest yield (2132.88g/plant). The number of days taken for first harvest ranged from 53.33 to 78.53 with a general mean of 62.89. The genotype  $A_4$  (53.33) recorded minimum number of days to come to harvest, followed by  $A_{41}$  (53.60). Nineteen genotypes recorded significantly less number of days to first harvest compared to check Bhagyamati.

**Table.1** List of genotypes of brinjal (*Solanum melongena* L.) selected for genetic diversity studies

Acc.No.	Genotype	Source	Acc.No.	Accession	Source	Acc.No.	Accession	Source
A <sub>1</sub>	IC 285125	NBPGR, Hyderabad	A <sub>21</sub>	IC 305048	NBPGR, Hyderabad	A <sub>41</sub>	IC 345740	NBPGR, Hyderabad
A <sub>2</sub>	IC 545853	NBPGR, Hyderabad	A <sub>22</sub>	IC 136056	NBPGR, Hyderabad	A <sub>42</sub>	IC 354597	NBPGR, Hyderabad
A <sub>3</sub>	IC 111072	NBPGR, Hyderabad	A <sub>23</sub>	IC 112741	NBPGR, Hyderabad	A <sub>43</sub>	IC 137683	NBPGR, Hyderabad
A <sub>4</sub>	IC 345333	NBPGR, Hyderabad	A <sub>24</sub>	IC 383102	NBPGR, Hyderabad	A <sub>44</sub>	Arka Shirish	IIHR, Bangalore
A <sub>5</sub>	IC 135929	NBPGR, Hyderabad	A <sub>25</sub>	IC 545948	NBPGR, Hyderabad	A <sub>45</sub>	Arka Keshav	IIHR, Bangalore
A <sub>6</sub>	NIC 23771	NBPGR, Hyderabad	A <sub>26</sub>	IC 439263	NBPGR, Hyderabad	A <sub>46</sub>	Bhagyamati	VRI, Hyderabad
A <sub>7</sub>	IC281072	NBPGR, Hyderabad	A <sub>27</sub>	IC 090084	NBPGR, Hyderabad	A <sub>47</sub>	Gulabi	VRI, Hyderabad
A <sub>8</sub>	IC90785	NBPGR, Hyderabad	A <sub>28</sub>	IC 446756	NBPGR, Hyderabad	A <sub>48</sub>	Surya	KAU, Thrissur
A <sub>9</sub>	IC021621	NBPGR, Hyderabad	A <sub>29</sub>	IC 090783	NBPGR, Hyderabad	A <sub>49</sub>	Arka Neelkanth	IIHR, Bangalore
A <sub>10</sub>	IC 104086	NBPGR, Hyderabad	A <sub>30</sub>	IC 090915	NBPGR, Hyderabad	A <sub>50</sub>	Arka Nidhi	IIHR, Bangalore
A <sub>11</sub>	IC 090942	NBPGR, Hyderabad	A <sub>31</sub>	IC 112322	NBPGR, Hyderabad			
A <sub>12</sub>	IC 272927	NBPGR, Hyderabad	A <sub>32</sub>	IC112991	NBPGR, Hyderabad			
A <sub>13</sub>	IC 281112	NBPGR, Hyderabad	A <sub>33</sub>	IC111439	NBPGR, Hyderabad			
A <sub>14</sub>	IC 281104	NBPGR, Hyderabad	A <sub>34</sub>	IC110667	NBPGR, Hyderabad			
A <sub>15</sub>	IC 99701	NBPGR, Hyderabad	A <sub>35</sub>	IC281092	NBPGR, Hyderabad			
A <sub>16</sub>	IC 345747	NBPGR, Hyderabad	A <sub>36</sub>	IC545890	NBPGR, Hyderabad			
A <sub>17</sub>	IC 90925	NBPGR, Hyderabad	A <sub>37</sub>	IC104101	NBPGR, Hyderabad			
A <sub>18</sub>	IC 136280	NBPGR, Hyderabad	A <sub>38</sub>	IC090084	NBPGR, Hyderabad			
A <sub>19</sub>	IC 345309	NBPGR, Hyderabad	A <sub>39</sub>	IC136056	NBPGR, Hyderabad			
A <sub>20</sub>	IC 127024	NBPGR, Hyderabad	A <sub>40</sub>	IC 345333	NBPGR, Hyderabad			

A. No.: Accession No.

**Table.2** Analysis of variance for yield, yield components and per cent bacterial wilt incidence in 50 genotypes of brinjal

S. No	Character	Mean sum of squares		
		Replications (df =2)	Treatments (df=49)	Error (df = 98)
1	Plant height (cm)	40.10	156.70**	29.87
2	No. of branches	2.98	10.70**	3.54
3	Days to first flowering	1.95	99.93**	2.98
4	Days to 50% flowering	0.26	99.45**	1.63
5	No. of flower clusters per plant	0.25	35.82**	1.22
6	No. of flowers per cluster	0.09	2.01**	0.19
7	No. of fruits per cluster	0.001	0.88**	0.03
8	No. of fruits per plant	1.24	120.65**	0.95
9	Days to first harvest	0.27	112.22**	3.23
10	Days to last harvest	8.81	271.86**	2.21
11	Fruit length (cm)	2.25	52.39**	0.58
12	Fruit width (cm)	0.35	11.65**	0.16
13	Average fruit weight (g)	0.94	852.23**	1.45
14	Ascorbic acid (mg/100g)	0.05	1.31**	0.46
15	Fruit yield per plant	2071.68	292507.66**	4173.12
16	Per cent bacterial wilt incidence	23.14	1538.56**	28.48

\*\* Significant at 1 per cent level.

**Table.3** Mean Performance of germplasm lines for yield components, yield and disease resistance in brinjal

Acc No.	Genotype	Plant height (cm)	No. of branches	Days to first flowering	Days to 50% flowering	No. of flower clusters per plant	No. of flowers per cluster	Days to first harvest	Days to last harvest	Fruit yield per plant (g)	Per cent bacterial wilt incidence (Cumulative)
A <sub>1</sub>	IC 285125	112.67	17.07	37.00	44.00	23.20	3.47	58.87	155.80	1471.08	89.33
A <sub>2</sub>	IC 545853	97.73	15.00	38.00	43.00	20.13	1.44	60.20	145.93	1583.61	88.00
A <sub>3</sub>	IC 111072	112.27	17.00	41.80	47.33	13.07	3.40	66.93	140.13	1665.62	89.33
A <sub>4</sub>	IC 345333	108.93	16.47	39.00	41.00	13.27	3.60	53.33	152.47	795.83	86.67
A <sub>5</sub>	IC 135929	113.07	17.67	39.13	45.33	21.60	1.67	63.93	148.73	1560.44	73.33
A <sub>6</sub>	NIC 23771	112.67	12.73	43.40	47.33	15.00	2.67	64.20	139.07	1000.89	70.67
A <sub>7</sub>	IC281072	96.80	16.40	44.07	49.00	29.20	2.73	61.27	160.87	895.19	80.00
A <sub>8</sub>	IC90785	101.27	13.00	44.00	48.00	20.07	3.27	64.33	153.33	1411.23	82.67
A <sub>9</sub>	IC021621	98.40	13.93	40.40	47.33	16.20	3.33	60.07	140.00	843.60	77.33
A <sub>10</sub>	IC 104086	110.80	16.67	35.93	42.33	18.53	2.13	59.07	148.93	1497.32	78.67
A <sub>11</sub>	IC 090942	96.00	16.20	38.93	46.67	16.93	2.27	55.67	136.20	1233.16	76.00
A <sub>12</sub>	IC 272927	105.87	16.07	37.07	43.00	23.53	1.07	58.67	144.93	1511.93	76.00
A <sub>13</sub>	IC 281112	97.80	16.27	36.93	42.00	21.53	2.27	56.60	154.80	1043.73	84.00
A <sub>14</sub>	IC 281104	95.80	17.40	39.07	43.33	19.47	3.93	54.47	133.53	1024.47	90.67
A <sub>15</sub>	IC 99701	97.40	18.40	35.27	41.00	13.87	1.60	59.87	134.87	1490.53	84.00
A <sub>16</sub>	IC 345747	110.53	17.67	33.80	40.00	15.60	3.27	56.80	131.93	1223.48	78.67
A <sub>17</sub>	IC 90925	108.20	17.60	37.93	45.00	16.93	3.73	56.27	145.33	1467.64	84.00
A <sub>18</sub>	IC 136280	89.93	16.47	35.93	41.67	24.47	3.60	55.00	143.80	1850.89	78.67
A <sub>19</sub>	IC 345309	116.47	17.07	35.13	40.67	24.13	2.73	56.73	145.00	2132.88	82.67
A <sub>20</sub>	IC 127024	96.73	15.67	47.47	51.33	21.60	3.80	64.93	155.13	1790.03	76.00
A <sub>21</sub>	IC 305048	95.00	14.93	44.87	50.33	23.60	2.53	66.00	153.87	1627.58	80.00
A <sub>22</sub>	IC 136056	110.73	15.73	46.13	51.00	15.73	2.20	64.40	153.60	1394.04	85.33
A <sub>23</sub>	IC 112741	105.73	17.20	54.80	61.33	21.00	4.93	78.53	169.20	1016.80	89.33
A <sub>24</sub>	IC 383102	115.53	15.47	47.93	53.67	20.07	3.40	64.80	155.13	1438.41	88.00
A <sub>25</sub>	IC 545948	96.27	14.87	54.13	60.33	19.87	3.00	73.73	163.93	949.58	80.00
A <sub>26</sub>	IC 439263	110.27	14.20	50.93	56.67	16.73	3.67	67.60	156.47	1790.97	72.00

(Contd..)

Acc No.	Genotype	Plant height (cm)	No. of branches	Days to first flowering	Days to 50% flowering	No. of flower clusters per plant	No. of flowers per cluster	Days to first harvest	Days to last harvest	Fruit yield per plant (g)	Per cent bacterial wilt incidence (Cumulative)
A <sub>27</sub>	IC 090084	106.00	18.20	47.13	50.67	20.47	2.40	61.13	141.20	1551.88	86.67
A <sub>28</sub>	IC 446756	105.53	18.53	41.87	47.33	20.07	2.27	59.07	148.93	1288.35	80.00
A <sub>29</sub>	IC 090783	113.47	16.67	41.33	48.33	18.73	4.07	69.07	142.73	1751.69	85.33
A <sub>30</sub>	IC 090915	102.87	15.67	37.27	45.67	20.47	1.89	60.27	160.00	1508.12	86.67
A <sub>31</sub>	IC 112322	107.20	14.87	48.20	53.00	25.93	2.53	71.93	157.33	1362.65	86.67
A <sub>32</sub>	IC112991	98.73	14.33	46.13	51.67	22.87	2.47	67.47	163.67	1788.19	85.33
A <sub>33</sub>	IC111439	110.40	12.53	53.00	59.00	18.40	3.00	72.80	162.47	1630.48	90.67
A <sub>34</sub>	IC110667	99.53	17.80	53.87	59.67	19.60	2.67	72.20	151.93	1661.69	80.00
A <sub>35</sub>	IC281092	108.00	17.07	42.60	48.33	26.53	3.33	57.93	137.87	1292.60	88.00
A <sub>36</sub>	IC545890	109.00	16.13	37.73	43.67	20.93	3.73	56.87	146.60	1163.87	86.67
A <sub>37</sub>	IC104101	108.27	16.73	36.80	40.67	18.67	1.80	54.07	142.67	1121.18	88.00
A <sub>38</sub>	IC090084	103.73	16.47	46.00	52.33	24.40	3.40	67.93	154.80	1246.63	86.67
A <sub>39</sub>	IC136056	115.87	15.87	51.87	57.67	19.07	3.27	75.00	150.27	1109.98	85.33
A <sub>40</sub>	IC 345333	113.00	14.13	37.80	43.67	14.13	2.53	64.00	147.27	1155.53	89.33
A <sub>41</sub>	IC 345740	102.80	14.33	35.73	41.33	20.73	2.27	53.60	133.93	1280.83	84.00
A <sub>42</sub>	IC 354597	103.60	15.33	42.87	48.67	24.00	2.60	61.47	141.07	1213.17	84.00
A <sub>43</sub>	IC 137683	103.20	16.87	53.27	58.67	21.40	2.27	70.07	139.47	1762.35	82.67
A <sub>44</sub>	Arka Shirish	116.73	11.33	40.33	45.33	16.73	4.60	67.33	149.00	1566.54	90.67
A <sub>45</sub>	Arka Keshav	95.40	13.13	41.33	46.33	18.80	4.00	66.87	157.13	2104.50	2.67
A <sub>46</sub>	Bhagyamati	97.00	14.53	44.60	50.33	19.87	3.67	63.00	165.87	1899.38	80.00
A <sub>47</sub>	Gulabi	104.07	13.20	46.93	51.67	19.80	2.60	68.60	166.13	1338.95	84.00
A <sub>48</sub>	Surya	95.40	13.67	39.60	46.67	20.47	2.20	62.40	157.80	1508.72	1.33
A <sub>49</sub>	Arka Neelkanth	110.33	11.33	41.93	48.00	19.47	3.33	61.07	160.13	1567.97	4.00
A <sub>50</sub>	Arka Nidhi	91.40	11.00	37.13	42.67	20.13	2.80	58.13	156.93	1515.11	2.67
S.Ed.		4.46	1.54	1.41	1.04	0.90	0.36	1.47	1.21	52.75	4.36
C.D@5%		8.84	3.04	2.79	2.06	1.79	0.71	2.91	2.41	104.52	8.63
C.D (1%)		11.71	4.03	3.70	2.73	2.37	0.95	3.85	3.19	138.43	11.44
C.V		5.22	12.11	4.07	2.65	5.54	15.18	2.86	2.99	4.54	6.94
Mean		104.69	15.54	42.49	48.08	19.94	2.91	62.89	149.96	1422.02	76.85

**Table.4** Mean Performance of germplasm lines for fruit and quality characters

Acc No.	Genotype	No. of fruits per cluster	No. of fruits per plant	Fruit length (cm)	Fruit width (cm)	Average fruit weight (g)	Ascorbic acid (mg/100g)
A <sub>1</sub>	IC 285125	1.55	28.71	11.17	4.82	51.25	6.89
A <sub>2</sub>	IC 545853	1.18	19.77	21.02	6.17	80.09	5.55
A <sub>3</sub>	IC 111072	2.25	18.13	13.71	12.97	91.85	6.00
A <sub>4</sub>	IC 345333	2.78	28.84	7.91	4.91	27.65	6.67
A <sub>5</sub>	IC 135929	1.00	19.71	13.60	6.51	79.21	9.11
A <sub>6</sub>	NIC 23771	1.72	15.93	20.77	5.67	62.81	5.33
A <sub>7</sub>	IC281072	1.33	36.41	14.07	3.26	24.61	5.33
A <sub>8</sub>	IC90785	1.33	17.81	20.88	4.82	79.24	4.89
A <sub>9</sub>	IC021621	1.15	12.68	10.98	7.77	66.57	6.22
A <sub>10</sub>	IC 104086	1.00	17.55	16.01	7.58	85.37	6.22
A <sub>11</sub>	IC 090942	1.80	16.00	14.94	7.32	77.12	5.78
A <sub>12</sub>	IC 272927	1.07	19.91	10.15	8.66	76.03	7.56
A <sub>13</sub>	IC 281112	2.00	36.55	14.51	3.40	28.56	4.67
A <sub>14</sub>	IC 281104	1.42	20.33	9.74	5.36	50.33	5.55
A <sub>15</sub>	IC 99701	1.87	20.07	21.12	4.28	74.28	6.67
A <sub>16</sub>	IC 345747	1.22	13.93	15.84	3.64	87.81	5.33
A <sub>17</sub>	IC 90925	2.29	19.77	15.51	7.30	74.19	5.33
A <sub>18</sub>	IC 136280	1.42	26.32	14.16	4.75	70.32	4.67
A <sub>19</sub>	IC 345309	1.55	33.07	10.08	8.52	64.53	6.00
A <sub>20</sub>	IC 127024	2.31	36.71	14.03	5.53	48.77	7.33
A <sub>21</sub>	IC 305048	1.55	28.41	9.07	4.79	57.28	5.56
A <sub>22</sub>	IC 136056	2.13	28.48	10.75	6.32	48.93	4.67
A <sub>23</sub>	IC 112741	1.54	21.32	15.55	3.90	47.68	4.67
A <sub>24</sub>	IC 383102	1.82	26.32	10.23	6.70	54.61	7.33
A <sub>25</sub>	IC 545948	2.33	28.75	5.78	6.71	33.03	3.33
A <sub>26</sub>	IC 439263	1.58	26.32	14.30	5.60	68.04	7.33
A <sub>27</sub>	IC 090084	1.42	25.73	11.99	5.02	60.29	4.00
A <sub>28</sub>	IC 446756	1.39	22.07	11.75	4.60	58.41	5.33
A <sub>29</sub>	IC 090783	1.71	22.07	10.20	9.89	79.36	8.00
A <sub>30</sub>	IC 090915	1.18	31.16	9.85	3.81	48.40	7.78
A <sub>31</sub>	IC 112322	1.14	24.09	6.30	6.37	56.53	6.45
A <sub>32</sub>	IC112991	2.29	26.07	12.75	5.23	68.60	7.33
A <sub>33</sub>	IC111439	2.18	33.84	13.23	4.43	48.17	5.33
A <sub>34</sub>	IC110667	1.13	22.00	10.82	7.94	75.55	5.33
A <sub>35</sub>	IC281092	1.45	26.00	10.20	5.65	49.71	3.33
A <sub>36</sub>	IC545890	1.67	21.53	9.09	6.82	54.07	4.89
A <sub>37</sub>	IC104101	1.82	25.80	12.05	4.54	43.45	8.45
A <sub>38</sub>	IC090084	1.55	30.71	7.75	5.90	40.60	6.45
A <sub>39</sub>	IC136056	1.85	27.93	10.27	5.53	39.75	6.67
A <sub>40</sub>	IC 345333	1.77	32.93	7.99	7.99	35.08	5.33
A <sub>41</sub>	IC 345740	2.20	32.25	15.31	4.37	39.75	7.33
A <sub>42</sub>	IC 354597	1.75	39.07	6.83	5.31	31.05	8.00
A <sub>43</sub>	IC 137683	2.42	23.52	17.67	6.31	74.92	7.33



(Contd..)

Acc No.	Genotype	No. of fruits per cluster	No. of fruits per plant	Fruit length (cm)	Fruit width (cm)	Average fruit weight (g)	Ascorbic acid (mg/100g)
A <sub>44</sub>	Arka Shirish	1.97	23.88	17.39	2.61	65.60	5.56
A <sub>45</sub>	Arka Keshav	2.66	23.80	20.50	2.58	75.17	6.00
A <sub>46</sub>	Bhagyamati	2.48	35.77	7.46	3.99	54.93	6.00
A <sub>47</sub>	Gulabi	2.42	29.87	12.64	2.78	55.93	6.67
A <sub>48</sub>	Surya	2.00	30.16	8.23	4.55	55.67	8.45
A <sub>49</sub>	Arka Neelkanth	2.87	27.93	16.99	3.33	60.27	6.22
A <sub>50</sub>	Arka Nidhi	2.56	25.77	20.50	4.28	58.72	6.44
S.Ed.		0.14	0.80	0.62	0.33	0.98	0.55
C.D (5%)		0.29	1.58	1.24	0.65	1.95	1.09
C.D (1%)		0.38	2.09	1.64	0.86	2.58	1.45
C.V		9.78	3.80	5.93	7.10	2.05	11.02
Mean		1.81	25.64	12.87	5.62	58.80	6.13

The genotype A<sub>23</sub> took the highest number of days for last harvest (169.20) followed by A<sub>47</sub> (166.13). The genotype A<sub>16</sub> (131.93) recorded lowest number of days to last harvest, followed by A<sub>14</sub> (133.53). The genotype A<sub>23</sub> recorded significantly more number of days for last harvest compared to Bhagyamati. These observations were in line with the findings of Ramesh *et al.*, (2005) who opined that earlier flowering genotypes could be used in further crop improvement programmes to promote staggered harvesting over a long duration to avoid market glut and to exploit higher prices during certain parts of the year.

The number of flower clusters per plant and the number of flowers per cluster showed a significant variation. The number of flower clusters per plant varied from 13.07 in genotype A<sub>3</sub> to 29.20 in genotype A<sub>7</sub>, whereas the number of flowers per cluster varied from 1.07 (A<sub>12</sub>) to 4.93 (A<sub>23</sub>).

Fruit yield is a complex trait which relies on component characters like number of fruits per plant and fruit weight. The number of fruits per plant ranged from 12.68 to 39.07

with a general mean of 25.64. The highest number of fruits were produced by the genotype A<sub>42</sub> (39.07) followed by A<sub>20</sub> (36.71). Similar findings were reported by Nirmala *et al.*, (2013) and Reshmika *et al.*, (2016). The fruit weight (91.85g) and fruit width (12.97cm) were highest in the genotype A<sub>3</sub>. While the lowest fruit weight was recorded by genotype A<sub>7</sub> (24.61 g) and twenty six genotypes recorded more fruit weight than the check Bhagyamati.

There was a significant difference in the ascorbic acid content of the different genotypes. The fruits produced by the genotype A<sub>5</sub> recorded the highest ascorbic acid content (9.11 mg/100g) followed by A<sub>37</sub> and A<sub>48</sub> (8.45 mg/100g) while the lowest ascorbic acid content was recorded by the genotypes A<sub>3</sub> and A<sub>25</sub> (3.33mg/100g). Per cent bacterial wilt incidence ranged from 1.33 to 90.67 per cent with a general mean of 76.85 per cent. The lowest incidence of bacterial wilt was recorded in the genotype A<sub>48</sub> (1.33 per cent) followed by A<sub>45</sub> (2.67 per cent), while the highest incidence of bacterial wilt (90.67 per cent) was recorded by A<sub>14</sub>, A<sub>33</sub>, A<sub>44</sub>.



In this study it was found that the accession A<sub>19</sub> (IC345309) was found to be a better performer for fruit yield per plant followed by A<sub>45</sub> (Arka Keshav). The better performance for fruit width and fruit weight was recorded by accession A<sub>3</sub> (IC111072), fruit number by A<sub>42</sub> (IC354597) and ascorbic acid content by A<sub>5</sub> (IC135929). The accession A<sub>16</sub> (IC345747) had low mean performance for days to first flower, days to 50% flower and days to first harvest. Low mean performance for bacterial wilt incidence was recorded by the accession A<sub>48</sub> (Surya).

### References

- Nirmala, N., Praneetha, S and Manivannan, N. 2013. Per se performance of cluster bearing, glossy purple Brinjal (*Solanum melongena* L.) hybrids for economic traits. *Electronic Journal of Plant Breeding*, 4(2): 1188-1192.
- Panse V G and Sukhatme P V 1967 Statistical methods for Agricultural Workers 2<sup>nd</sup> Edn ICAR, New Delhi pp 361.
- Ramesh Babu, B and Patil, R.V. 2005. Evaluation and variability studies of brinjal genotypes. *Madras Agric. J.* 92 (7-9): 578-584.
- Ranganna. 1986. Manual of Analysis of Fruit and Vegetable Products. Tata McGraw Hill Publisher, New Delhi. pp. 89-90.
- Reshmika P. K., Gasti V. D., Shashikanth Evoor., Jayappa, J., Ravindra Mulge, Basavaraj, L.B. 2016. Performance of Brinjal (*Solanum melongena* L.) Genotypes under GLBC Condition. *Environment & Ecology* 34 (2): 519—525.
- Satesh Kumar, J.P., Sharma and Sandeep Chopra. 2011. Studies on variability, heritability and genetic advance for morphological and yield traits in brinjal (*Solanum melongena* L.). *Mysore J. Agric. Sci.*, 45(1): 63-66.