

## Original Research Article

## Open Access

# Effect of Different Salinity Levels on Fruit and Yield Attributes of Brinjal Varieties Grafted on *Solanum torvum*


 Motapalukula Jyothi<sup>\*1</sup>, T. B. Tambe<sup>1</sup>, V. S. Khandare<sup>2</sup>, G. U. Shinde<sup>3</sup>
<sup>1</sup>Department of Horticulture, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani - 431402, Maharashtra, India

<sup>2</sup>Department of Horticulture Research Scheme (Veg.), Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani - 431402, Maharashtra, India

<sup>3</sup>Mechanical Engineering and Principal Investigator, NAHEP, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani - 431402, Maharashtra, India

## ABSTRACT

The current experiment was conducted at the College of Agriculture, Department of Horticulture, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani (Maharashtra) during the year 2020 and 2021. The pot experiment was laid out in Factorial Randomized Block Design (FRBD) which was replicated twice with two factors, i.e., grafts and salinity levels. In grafts, there were four varieties grafted on *Solanum torvum* i.e., Phule Arjun, Phule Harit, Krishna and Manjari Gota, by adopting cleft method and there were five salinity levels i.e., Control, 2, 3, 4 and 5 dS m<sup>-1</sup> which were imposed with the help of sodium chloride (NaCl) salt to assess the response of rootstock towards the fruit and yield attributes under salinity stress conditions. Among the different varieties grafted on *Solanum torvum* Phule Harit showed significantly superior performance for fruit (fruit weight, volume, diameter and length), yield (fruit yield/plant and hectare). In interactions, Phule Harit grafted on *Solanum torvum* was found maximum for fruit weight, volume, diameter and length, yield per plant and hectare.

**Keywords:** Brinjal, Eggplant, Grafting and Salinity levels, Fruit and yield attributes.

## INTRODUCTION

Brinjal (*Solanum melongena*), generally known as eggplant, is among the well-known and extensively cultivated vegetable in India, its primary center of origin. called as the "poor man's vegetable," it is grown throughout the year across various agro-climatic zones (Praveenkumar *et al.*, 2023) and available in several shapes (*Solanum melongena*, viz., var. *esculentum*, var. *serpentinum* and var. *depressum*), colors, and sizes (Swarup, 2016). Additionally, flavonoids isolated from eggplant have shown a great antioxidant activity and their presence in diet is associated with lower risk of heart disease, lung cancer and stroke (Sabatino *et al.*, 2018). In spite of its adaptability, eggplant is moderately sensitive to salinity, which significantly effects the crop productivity. Universally, about 800 million hectares of land are salt-affected soils, affecting more than 20% of irrigated lands (Basak *et al.*, 2022). This salinity issue is additional deepened on factors like poor irrigation management and extreme chemical fertilizer use. In response, grafting has become as an effective method to improve salinity tolerance in brinjal. Grafting brinjal onto salt-tolerant rootstock such as *Solanum torvum* can enhance antioxidant responses and minimizes ion toxicity (Na<sup>+</sup> and Cl<sup>-</sup>), so sustaining yield and fruit quality under saline environments (Mozafarian *et al.*, 2023). This eco-friendly approach is more chosen by traditional breeding approaches. However, while extensive studies have investigated salinity effects on own-root brinjal, research is still

lacking on the response of grafted brinjal under saline conditions, underscoring the need for further exploration to expand cultivation into salt-affected regions.

## MATERIALS AND METHODS

This experiment was conducted at College of Agriculture, Department of Horticulture, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani during the year 2020 and 2021. The experiment was laid out in Factorial Randomized Block Design (FRBD) with two replications and it consisted of two factors, i.e., Grafts (viz., Phule Arjun (F<sub>1</sub>), Phule Harit, Krishna (F<sub>1</sub>) and Manjari Gota on *Solanum torvum* (Turkey Berry)) by using cleft grafting method and Salinity levels (2, 3, 4 and 5 dS m<sup>-1</sup>). The observations were recorded from all randomly selected plants of each variety from each replication and the average was worked out in each replication. The data obtained during experiment were analyzed as per the standard statistical methods prescribed by Panse and Sukhatme (1985).

## RESULTS AND DISCUSSION

The pooled results presented in table 1 and 2 was clearly explaining about significance difference of different parameters and Illustrated in figure 2, 3, 4 and 5. Among the grafts, significantly the maximum weight of fruit (129.25 g), volume of fruit (146.32 ml), diameter of fruit (9.13 cm), length of fruit (11.81 cm), yield of fruit per plant (2611.09 g) and yield of fruit per ha (58.02 Mt) was noted in Phule Harit grafted on *Solanum torvum*. Whereas, significantly the lowest weight of fruit (64.86 g), volume of fruit (85.09 ml), diameter of fruit (6.82 cm), length of fruit (6.41 cm), yield of fruit per plant (1362.16 g) and yield of fruit per ha (30.27 Mt) was observed in Phule Arjun grafted on *Solanum torvum*. The highest number of fruits per plant was found in Manjari Gota grafted on *Solanum torvum* (22.66).

\*Corresponding Author: **Motapalukula Jyothi**

DOI: <https://doi.org/10.21276/AATCCReview.2025.13.03.243>

© 2025 by the authors. The license of AATCC Review. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Whereas, significantly the lowest number of fruits per plant was recorded in Krishna grafted on *Solanum torvum* (19.01). Grafted plants generally perform greater compared to the self-rooted ones in terms of fruit yield and quality, which might be due to the enhanced efficiency of vigorous rootstocks in water and nutrients uptake, which leads to improvement in xylem sap flow and hormonal balance. These physiological advantages lead to maximum yield (fruit number and weight), and enhanced fruit shape. Fruit length and diameter were also increased in grafted plants, may be influenced by both varietal characters, scion and rootstock compatibility levels, particularly *Solanum torvum*, which endorses vigor and growth through enhanced hormonal signaling. Desirable climatic conditions, extended cropping period, and rootstock-scion compatible interactions play a important role in increasing fruit number and yield per plant, as increase in number of flowers and fruit setting. maximum yields in grafted plants are due to improved nutrient uptake, higher CO<sub>2</sub> assimilation, and improved source-to-sink relationships. The varieties viz., Phule Harit and Manjari Gota, F1 hybrids like as Phule Arjun and Krishna, maintained a more positive balance between root and shoot development, while F1 hybrids have a tendency to exhibit extreme vegetative growth at the extent of reproductive development. These results are in confirmation with earlier findings of Aslam *et al.* (2020); Lang *et al.* (2020); Musa *et al.* (2020); Sabatino *et al.* (2020); Sudesh *et al.* (2021) and Sarswat *et al.* (2020).

Under salt concentrations, the maximum weight of fruit (100.20 g), volume of fruit (120.70 ml), diameter of fruit (7.96 cm), length of fruit (9.81 cm), number of fruits per plant (24.58), yield of fruit per plant (2469.07 g) and yield of fruit per ha (54.87 Mt) was observed in the control. The minimum weight of fruit (83.89 g), volume of fruit (98.85 ml), diameter of fruit (7.39 cm), length of fruit (8.23 cm), number of fruits per plant (16.49), yield of fruit per plant (1373.45 g) and yield of fruit per ha (30.52 Mt) was noticed in 5 dS m<sup>-1</sup>. All the fruit related parameters were decreased at higher level of salt concentration due restriction in nutrient uptake and metabolism activities (photosynthesis). Our results seem to be in accordance with those obtained by Uddin *et al.* (2016); Al-Harbi *et al.* (2017); and Al-Zubaidi (2018).

Among the treatment combinations, Phule Harit grafted on *S. torvum* with control was observed significantly the maximum weight of fruit (140.69 g), volume of fruit (162.93 ml), diameter of fruit (9.47 cm), length of fruit (12.89 cm), number of fruits per plant (25.95), yield of fruit per plant (3302.74 g) and yield of

fruit per hectare (73.40 Mt). Whereas, significantly the lowest weight of fruit (57.63 g), volume of fruit (79.01 ml), diameter of fruit (6.62 cm), length of fruit (5.74 cm), yield of fruit per plant (903.53 g) and yield of fruit per hectare (20.08 Mt) was found in Phule Arjun grafted on *Solanum torvum*. The minimum number of fruits per plant (13.25) was found in Krishna with 5 dS m<sup>-1</sup> in the pooled mean. These findings are consistent with Nirmal (2017) and Marsic *et al.* (2014), who investigated that grafted plants produced consistently more fruits per plant than ungrafted plants

Phule Harit grafted on *Solanum torvum* was proved to be maximum for weight of fruit (130.18 g, 124.13 g and 118.50 g), volume of fruit (139.55 ml, 136.08 ml and 134.69 ml), diameter of fruit (9.15 cm, 8.91 cm and 8.81 cm), length of fruit (11.67 cm, 11.39 cm and 11.03 cm), yield of fruit per plant (2603.47 g, 2411.82 g and 1920.60 g), yield of fruit per hectare (57.85 Mt, 53.60 Mt and 42.68 Mt) and Manjari Gota grafted on *Solanum torvum* was proved to be maximum for number of fruits per plant (22.44, 21.63 and 20.44, respectively) at 3.00, 4.00 and 5.00 dS m<sup>-1</sup>, respectively.

## CONCLUSION

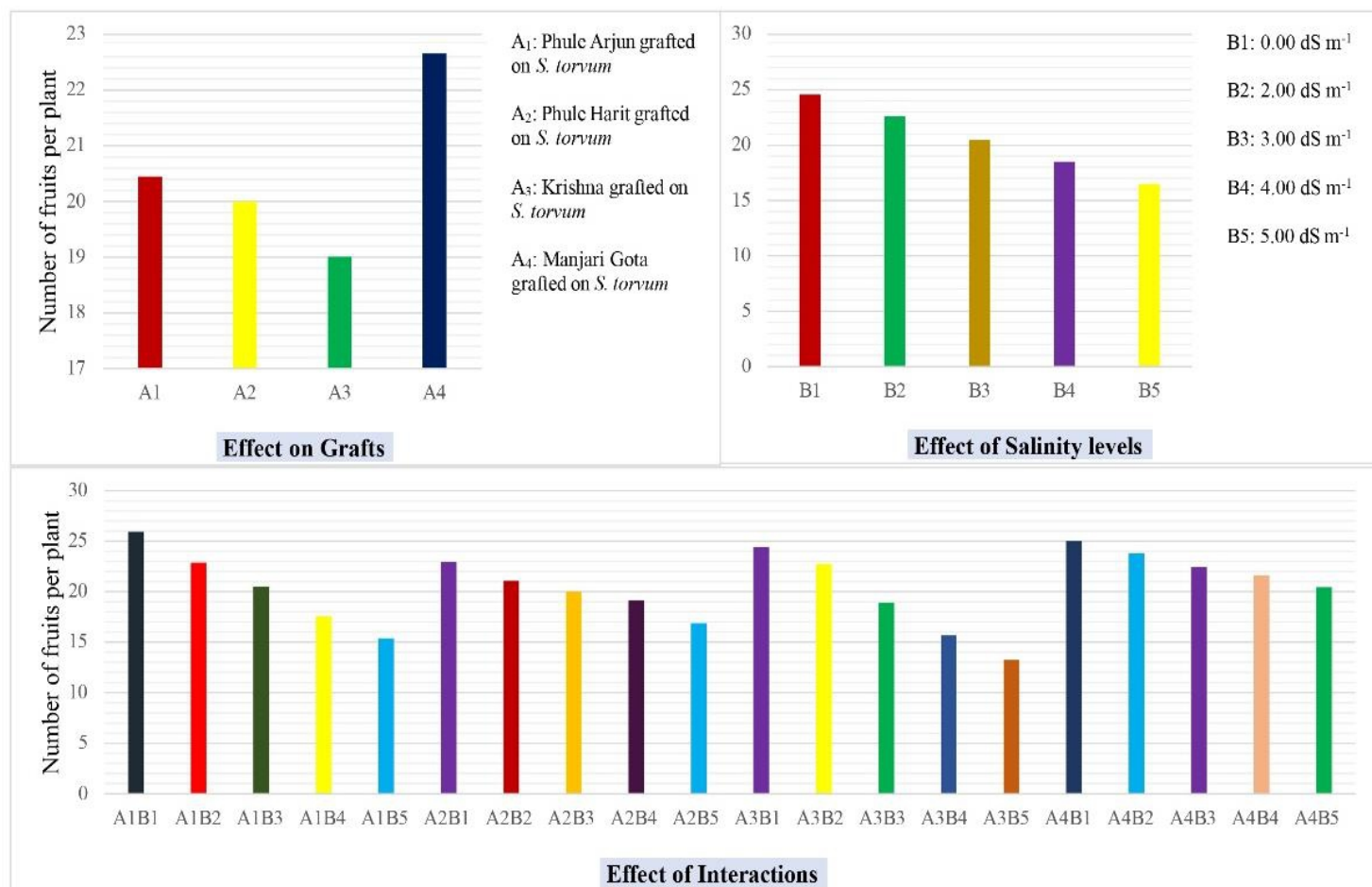
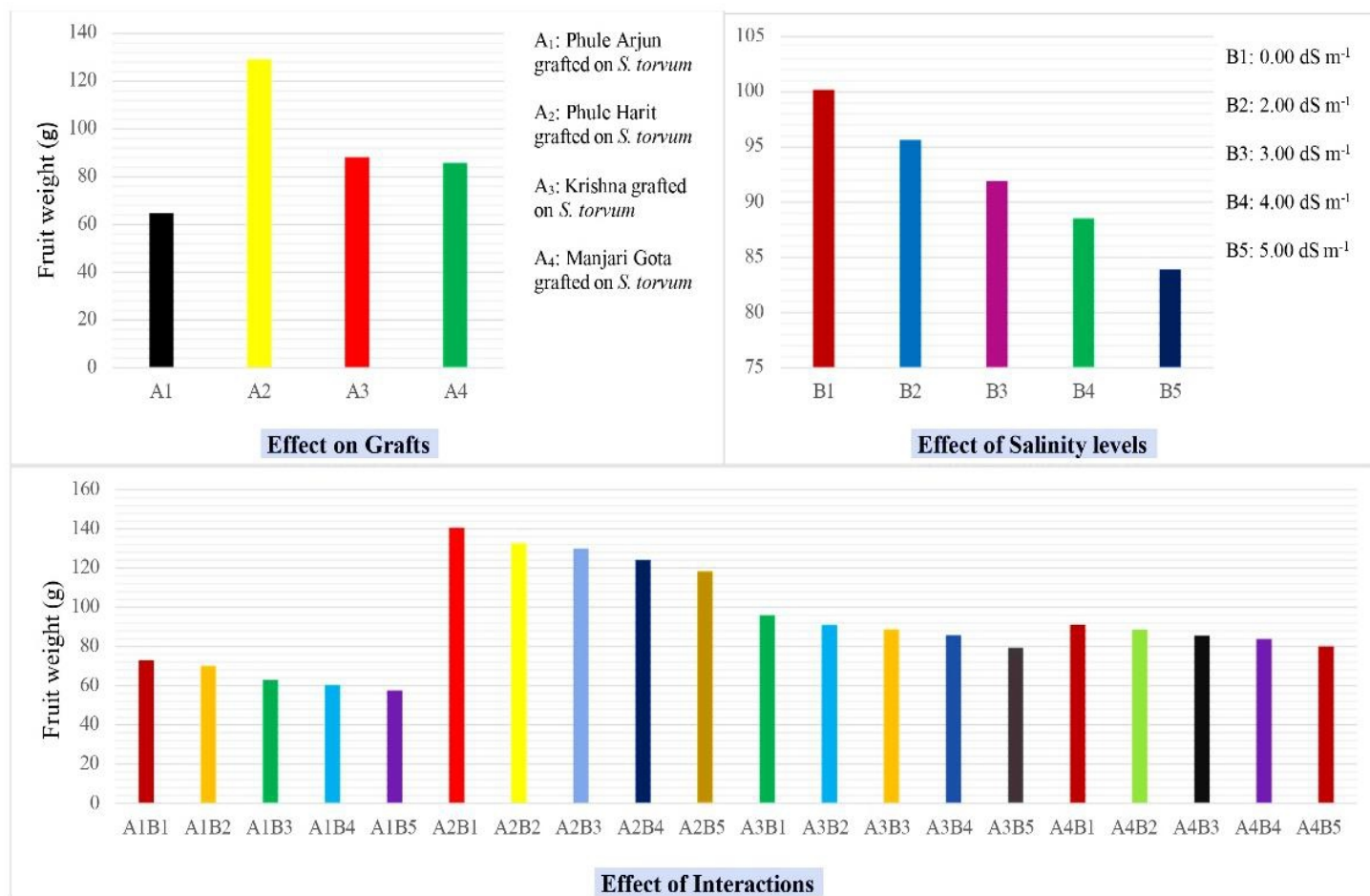
Grafting of different varieties of brinjal as scion onto *Solanum torvum* Sw. rootstock shown a positive effect. Among the grafts, results showed that Phule Harit grafted on *Solanum torvum* was shown maximum values for fruit weight, volume, diameter and length, fruit yield per plant and hectare. While, Manjari Gota grafted on *Solanum torvum* was observed significantly, the highest number of fruits. Among the different salinity levels, majority of the characters were noted significantly maximum in control treatment viz., fruit weight, volume, diameter and length, fruits, yield per plant and hectare. Phule Harit grafted on *Solanum torvum* was proved to be maximum for scion diameter, scion to stock ratio, plant height, leaves, fruit weight, volume, diameter and length, yield per plant and hectare, chlorophyll and membrane stability index, peroxidase, NDVI and minimum solasodine at 3.00, 4.00 and 5.00 dS m<sup>-1</sup>. While, rootstock diameter was reported at 4.00 and 5.00 dS m<sup>-1</sup>; primary roots, proline and EVI at 3.00 and 5.00 dS m<sup>-1</sup>; catalase activity at 3.00 dS m<sup>-1</sup>.

## ACKNOWLEDGEMENT

The authors were greatly acknowledged to the College of Agriculture, Department of Horticulture, VNMKV, Parbhani for providing all necessary facilities to conduct research.



Figure 1: Fruit morphology of brinjal varieties (Phule Arjun, Phule Harit, Krishna and Manjari Gota) grafted on *Solanum torvum* under salinity stress

Figure 2: Effect of grafts, salinity levels and their interactions on fruit weight (g) of brinjal varieties grafted on *Solanum torvum*Figure 3: Effect of grafts, salinity levels and their interactions on number of fruits per plant of brinjal varieties grafted on *Solanum torvum*



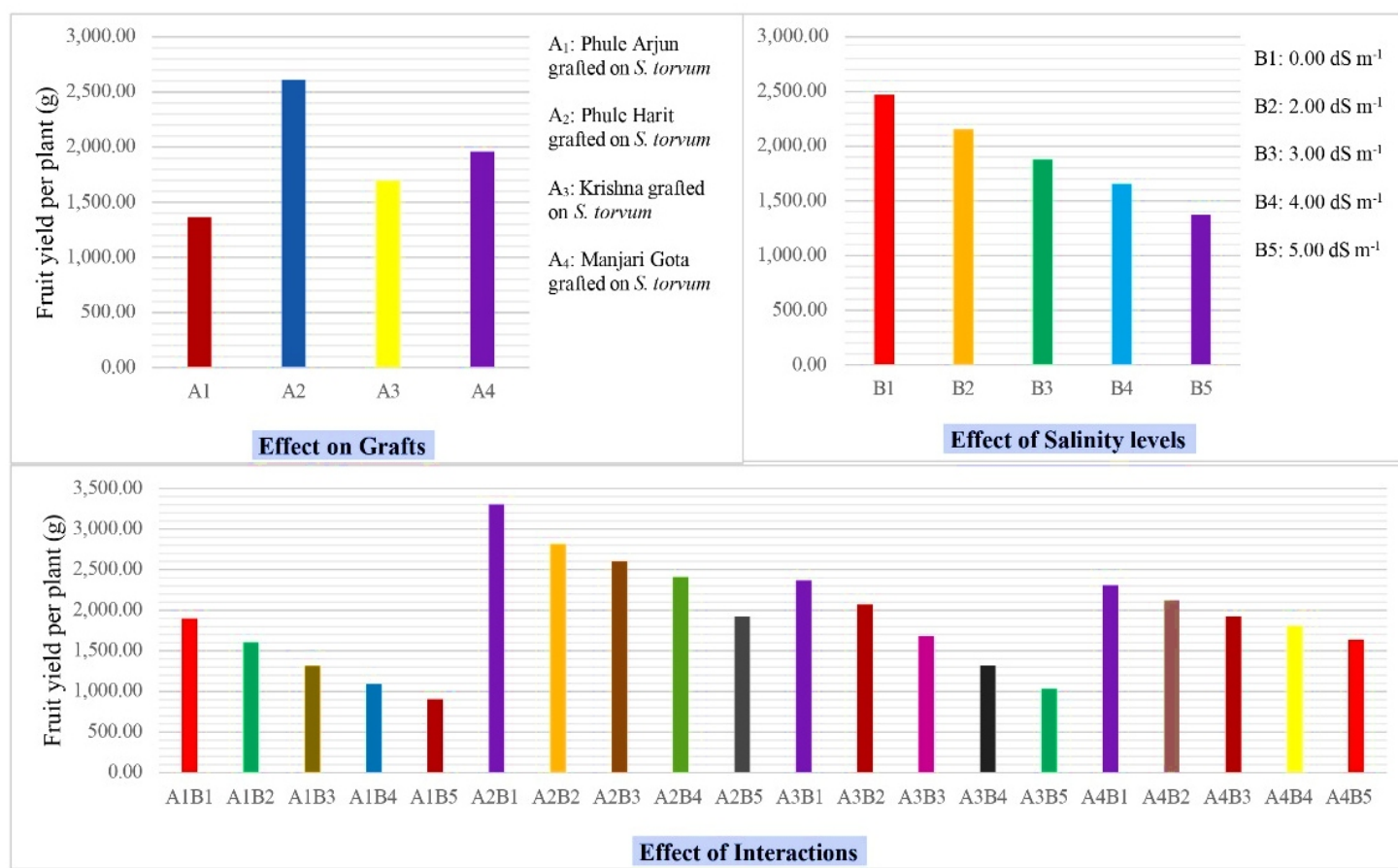
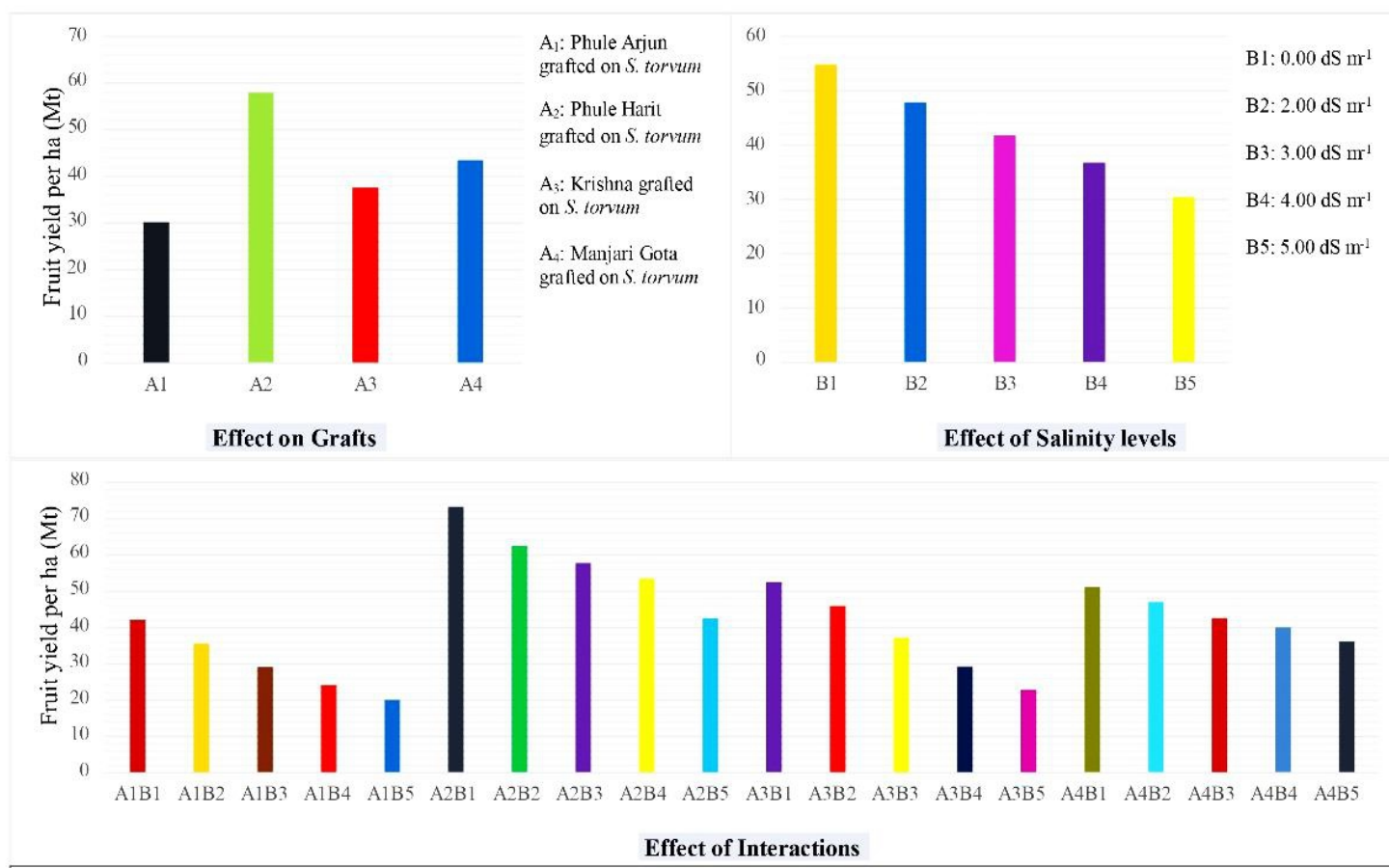
Figure 4: Effect of grafts, salinity levels and their interactions on fruit yield (g/plant) of brinjal varieties grafted on *Solanum torvum*Figure 5: Effect of grafts, salinity levels and their interactions on fruit yield (Mt/ha) of brinjal varieties grafted on *Solanum torvum*

Table 1: Effect of different salinity levels on fruit parameters of brinjal varieties grafted on *Solanum torvum*

| Factors         | Treatment Details                             | Fruit weight (g) (Pooled mean) | Fruit volume (ml) (Pooled mean) | Fruit diameter (cm) (Pooled mean) | Fruit length (cm) (Pooled mean) |
|-----------------|---|--------------------------------|---------------------------------|-----------------------------------|---------------------------------|
| A <sub>1</sub>  | Phule Arjun grafted on <i>Solanum torvum</i>  | 64.86                          | 85.09                           | 6.82                              | 6.41                            |
| A <sub>2</sub>  | Phule Harit grafted on <i>Solanum torvum</i>  | 129.25                         | 146.32                          | 9.13                              | 11.81                           |
| A <sub>3</sub>  | Krishna grafted on <i>Solanum torvum</i>      | 88.19                          | 104.19                          | 7.50                              | 8.93                            |
| A <sub>4</sub>  | Manjari Gota grafted on <i>Solanum torvum</i> | 85.87                          | 100.14                          | 7.12                              | 8.47                            |
| SE (m) ±        |   | 0.376                          | 0.368                           | 0.010                             | 0.019                           |
| C.D at 5 %      |   | 1.120                          | 1.097                           | 0.031                             | 0.056                           |
| B <sub>1</sub>  | 0 dS m <sup>-1</sup>                          | 100.20                         | 120.70                          | 7.96                              | 9.81                            |
| B <sub>2</sub>  | 2.00 dS m <sup>-1</sup>                       | 95.66                          | 116.83                          | 7.79                              | 9.41                            |
| B <sub>3</sub>  | 3.00 dS m <sup>-1</sup>                       | 91.90                          | 107.19                          | 7.63                              | 8.65                            |
| B <sub>4</sub>  | 4.00 dS m <sup>-1</sup>                       | 88.55                          | 101.12                          | 7.45                              | 8.42                            |
| B <sub>5</sub>  | 5.00 dS m <sup>-1</sup>                       | 83.89                          | 98.85                           | 7.39                              | 8.23                            |
| SE (m) ±        |   | 0.420                          | 0.411                           | 0.012                             | 0.021                           |
| C.D at 5 %      |   | 1.253                          | 1.226                           | 0.034                             | 0.063                           |
| T <sub>1</sub>  | A <sub>1</sub> B <sub>1</sub>                 | 73.13                          | 91.63                           | 7.11                              | 7.11                            |
| T <sub>2</sub>  | A <sub>1</sub> B <sub>2</sub>                 | 70.19                          | 90.88                           | 6.90                              | 6.92                            |
| T <sub>3</sub>  | A <sub>1</sub> B <sub>3</sub>                 | 62.93                          | 83.31                           | 6.80                              | 6.39                            |
| T <sub>4</sub>  | A <sub>1</sub> B <sub>4</sub>                 | 60.44                          | 80.63                           | 6.68                              | 5.89                            |
| T <sub>5</sub>  | A <sub>1</sub> B <sub>5</sub>                 | 57.63                          | 79.01                           | 6.62                              | 5.74                            |
| T <sub>6</sub>  | A <sub>2</sub> B <sub>1</sub>                 | 140.69                         | 162.93                          | 9.47                              | 12.89                           |
| T <sub>7</sub>  | A <sub>2</sub> B <sub>2</sub>                 | 132.75                         | 158.38                          | 9.31                              | 12.08                           |
| T <sub>8</sub>  | A <sub>2</sub> B <sub>3</sub>                 | 130.18                         | 139.55                          | 9.15                              | 11.67                           |
| T <sub>9</sub>  | A <sub>2</sub> B <sub>4</sub>                 | 124.13                         | 136.08                          | 8.91                              | 11.39                           |
| T <sub>10</sub> | A <sub>2</sub> B <sub>5</sub>                 | 118.50                         | 134.69                          | 8.81                              | 11.03                           |
| T <sub>11</sub> | A <sub>3</sub> B <sub>1</sub>                 | 95.88                          | 117.25                          | 7.48                              | 10.14                           |
| T <sub>12</sub> | A <sub>3</sub> B <sub>2</sub>                 | 91.01                          | 111.07                          | 7.62                              | 9.82                            |
| T <sub>13</sub> | A <sub>3</sub> B <sub>3</sub>                 | 88.82                          | 108.50                          | 7.41                              | 8.31                            |
| T <sub>14</sub> | A <sub>3</sub> B <sub>4</sub>                 | 85.82                          | 93.33                           | 7.31                              | 8.22                            |
| T <sub>15</sub> | A <sub>3</sub> B <sub>5</sub>                 | 79.44                          | 90.82                           | 7.29                              | 8.16                            |
| T <sub>16</sub> | A <sub>4</sub> B <sub>1</sub>                 | 91.13                          | 111.00                          | 7.39                              | 9.12                            |
| T <sub>17</sub> | A <sub>4</sub> B <sub>2</sub>                 | 88.69                          | 107.00                          | 7.32                              | 8.84                            |
| T <sub>18</sub> | A <sub>4</sub> B <sub>3</sub>                 | 85.69                          | 97.39                           | 7.14                              | 8.25                            |
| T <sub>19</sub> | A <sub>4</sub> B <sub>4</sub>                 | 83.82                          | 94.44                           | 6.91                              | 8.17                            |
| T <sub>20</sub> | A <sub>4</sub> B <sub>5</sub>                 | 80.01                          | 90.88                           | 6.85                              | 8.00                            |
| SE (m) ±        |   | 0.840                          | 0.822                           | 0.023                             | 0.042                           |
| C.D at 5 %      |   | 2.505                          | 2.452                           | 0.069                             | 0.126                           |

Table 2: Effect of different salinity levels on yield parameters of brinjal varieties grafted on *Solanum torvum*

| Factors         | Treatment Details                             | Number of fruits per plant (Pooled mean) | Fruit yield per plant (g) (Pooled mean) | Fruit yield per ha (Mt) (Pooled mean) |
|-----------------|---|--|---|---------------------------------------|
| A <sub>1</sub>  | Phule Arjun grafted on <i>Solanum torvum</i>  | 20.45                                    | 1,362.16                                | 30.27                                 |
| A <sub>2</sub>  | Phule Harit grafted on <i>Solanum torvum</i>  | 20.00                                    | 2,611.09                                | 58.02                                 |
| A <sub>3</sub>  | Krishna grafted on <i>Solanum torvum</i>      | 19.01                                    | 1,694.70                                | 37.66                                 |
| A <sub>4</sub>  | Manjari Gota grafted on <i>Solanum torvum</i> | 22.66                                    | 1,959.39                                | 43.54                                 |
| SE (m) ±        |   | 0.227                                    | 14.242                                  | 0.316                                 |
| C.D at 5 %      |   | 0.678                                    | 42.467                                  | 0.943                                 |
| B <sub>1</sub>  | 0 dS m <sup>-1</sup>                          | 24.58                                    | 2,469.07                                | 54.87                                 |
| B <sub>2</sub>  | 2.00 dS m <sup>-1</sup>                       | 22.62                                    | 2,153.66                                | 47.86                                 |
| B <sub>3</sub>  | 3.00 dS m <sup>-1</sup>                       | 20.47                                    | 1,880.32                                | 41.78                                 |
| B <sub>4</sub>  | 4.00 dS m <sup>-1</sup>                       | 18.50                                    | 1,657.66                                | 36.84                                 |
| B <sub>5</sub>  | 5.00 dS m <sup>-1</sup>                       | 16.49                                    | 1,373.45                                | 30.52                                 |
| SE (m) ±        |   | 0.254                                    | 15.923                                  | 0.354                                 |
| C.D at 5 %      |   | 0.758                                    | 47.480                                  | 1.055                                 |
| T <sub>1</sub>  | A <sub>1</sub> B <sub>1</sub>                 | 25.95                                    | 1,897.67                                | 42.17                                 |
| T <sub>2</sub>  | A <sub>1</sub> B <sub>2</sub>                 | 22.87                                    | 1,604.58                                | 35.66                                 |
| T <sub>3</sub>  | A <sub>1</sub> B <sub>3</sub>                 | 20.51                                    | 1,315.69                                | 29.24                                 |
| T <sub>4</sub>  | A <sub>1</sub> B <sub>4</sub>                 | 17.57                                    | 1,089.32                                | 24.21                                 |
| T <sub>5</sub>  | A <sub>1</sub> B <sub>5</sub>                 | 15.38                                    | 903.53                                  | 20.08                                 |
| T <sub>6</sub>  | A <sub>2</sub> B <sub>1</sub>                 | 22.94                                    | 3,302.74                                | 73.40                                 |
| T <sub>7</sub>  | A <sub>2</sub> B <sub>2</sub>                 | 21.07                                    | 2,816.85                                | 62.60                                 |
| T <sub>8</sub>  | A <sub>2</sub> B <sub>3</sub>                 | 20.01                                    | 2,603.47                                | 57.85                                 |
| T <sub>9</sub>  | A <sub>2</sub> B <sub>4</sub>                 | 19.13                                    | 2,411.82                                | 53.60                                 |
| T <sub>10</sub> | A <sub>2</sub> B <sub>5</sub>                 | 16.88                                    | 1,920.60                                | 42.68                                 |
| T <sub>11</sub> | A <sub>3</sub> B <sub>1</sub>                 | 24.44                                    | 2,368.07                                | 52.62                                 |
| T <sub>12</sub> | A <sub>3</sub> B <sub>2</sub>                 | 22.75                                    | 2,069.94                                | 46.00                                 |
| T <sub>13</sub> | A <sub>3</sub> B <sub>3</sub>                 | 18.92                                    | 1,679.56                                | 37.33                                 |
| T <sub>14</sub> | A <sub>3</sub> B <sub>4</sub>                 | 15.69                                    | 1,321.60                                | 29.37                                 |
| T <sub>15</sub> | A <sub>3</sub> B <sub>5</sub>                 | 13.25                                    | 1,034.33                                | 22.99                                 |
| T <sub>16</sub> | A <sub>4</sub> B <sub>1</sub>                 | 25.00                                    | 2,307.82                                | 51.29                                 |
| T <sub>17</sub> | A <sub>4</sub> B <sub>2</sub>                 | 23.79                                    | 2,123.30                                | 47.19                                 |
| T <sub>18</sub> | A <sub>4</sub> B <sub>3</sub>                 | 22.44                                    | 1,922.57                                | 42.73                                 |
| T <sub>19</sub> | A <sub>4</sub> B <sub>4</sub>                 | 21.63                                    | 1,807.92                                | 40.18                                 |
| T <sub>20</sub> | A <sub>4</sub> B <sub>5</sub>                 | 20.44                                    | 1,635.33                                | 36.34                                 |
| SE (m) ±        |   | 0.509                                    | 31.846                                  | 0.707                                 |
| C.D at 5 %      |   | 1.517                                    | 94.960                                  | 2.109                                 |

## References

1. Al-Harbi A, Hejazi A, Al-Omran A (2017) Responses of grafted tomato (*Solanum lycopersicum* L.) to abiotic stresses in Saudi Arabia. *Saudi J Biol Sci* 24(6): 1274–1280.
2. Al-Zubaidi AHA (2018) Effects of salinity stress on growth and yield of two varieties of eggplant under greenhouse conditions. *Res Crops* 19(3): 436–440.
3. Aslam W, Noor RS, Hussain F, Ameen M, Ullah S, Chen H (2020) Evaluating morphological growth, yield, and postharvest fruit quality of cucumber (*Cucumis sativus* L.) grafted on Cucurbitaceous rootstocks. *Agriculture* 10(4): 101.
4. Basak N, Rai AK, Barman A, Mandal S, Sundha P, Bedwal S, Kumar S, Yadav RK, Sharma PC (2022) Salt-affected soils: Global perspectives. In: *Soil Health and Environmental Sustainability: Application of Geospatial Technology*. Springer, Cham, pp. 107–129.
5. Lang KM, Nair A, Moore KJ (2020) The impact of eight hybrid tomato rootstocks on 'bhn 589' scion yield, fruit quality, and plant growth traits in a mid-west high tunnel production system. *HortScience* 55(6): 936–944.
6. Marsic NK, Mikulic-Petkovsek M, Stampar F (2014) Grafting influences phenolic profile and carpometric traits of fruits of greenhouse-grown eggplant (*Solanum melongena* L.). *J Agric Food Chem* 62: 10504–10514.
7. Mozafarian M, Hawrylak-Nowak B, Kappel N (2023) Effect of different rootstocks on the salt stress tolerance and fruit quality of grafted eggplants (*Solanum melongena* L.). *Plants* 12(20): 3631.
8. Musa I, Rafii MY, Ahmad K, Ramlee SI, Md Hatta MA, Oladosu Y, Muhammad I, Chukwu SC, Sulaiman NNM, Ayanda AF, Halidu J (2020) Effects of grafting on morphophysiological and yield characteristic of eggplant (*Solanum melongena* L.) grafted onto wild relative rootstocks. *Plants* 9(11): 1583.
9. Nirmal OA (2017) Comparative performance of different shade intensities on growth of vegetable seedlings under Konkan agro climatic conditions. MSc Thesis, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli (Unpublished).
10. Panse VG, Sukhatme PV (1985) *Statistical methods for agriculture workers*. ICAR, New Delhi.
11. Praveenkumar NR, Anjanappa M, Shilpashree N, Manjunathagowda DC (2023) Interaction of scions and rootstocks against bacterial wilt, and grafting effects on plant growth and yield of brinjal (*Solanum melongena* L.). *Plant Physiol Rep* 28(2): 338–344.
12. Sabatino L, Iapichino G, D'Anna F, Palazzolo E, Mennella G, Rotino GL (2018) Hybrids and allied species as potential rootstocks for eggplant: Effect of grafting on vigour, yield and overall fruit quality traits. *Sci Hortic* 228: 81–90.
13. Sarswat S, Kumar P, Sharma P, Thakur V (2020) Standardization of robotic grafting in bell pepper (*Capsicum annuum* L. var. Grossum Sendt.). *Int J Curr Microbiol App Sci* 9(3): 1410–1418.
14. Sudesh KS, Anjanappa M, Manjunathagowda DC, Shilpashree N, Bharathkumar A, Praveenkumar NR (2021) Grafting in brinjal (*Solanum melongena* L.): A sustainable way of increasing the yield. *Vegetos* 34(1): 263–269.
15. Swarup V (2016) *Vegetable science and technology in India*. 2nd ed. Kalyani Publishers, pp. 347–350.
16. Uddin AJ, Mutaherea S, Mehrajb H, Momenac K, Nahiyanc ASM (2016) Screening of brinjal lines to high salinity levels. *J Bios Agri Res* 7(2): 630–637.