

## **Brimato: Double Delight - The Magical Plant Yielding Two Vegetables**

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### **Introduction**

To meet the needs of the growing population, it is necessary to develop new high-yielding varieties. The era of growing a single vegetable in a single plant has long passed. New techniques have been developed in agriculture to grow nutritious vegetables more quickly. Grafting is one such technique, referring to attaching parts of two plants so that they can form a single unit and function as a single plant. The term "scion" refers to the upper component of the grafted plant, while "rootstock" refers to the lower portion. The practice of grafting began 4000 years ago in China and Mesopotamia. As early as 2000 years ago, people recognized grafting as a method to increase plant productivity and disease resistance. This surgical method connects distinct genotypes to combine desirable features in the scion and rootstock. Grafting is a cost-effective technique, and inter-specific grafting has shown results in enhancing plant resistance to biotic and abiotic stress, ultimately increasing yield. A new technology, alternatively called multiple grafting or dual grafting, involves joining two or more scions from the same plant to produce more vegetables from a single plant.

### **Brimato**

Recently, scientists at Icar-Indian Institute of Vegetable Research (IIVR), Varanasi, have developed a new technology called Brimato. This involves grafting brinjal (*Solanum melongena* L.) and tomato (*Solanum Lycopersicon* L.), which are important vegetable crops in India belonging to the same family (Solanaceae). Brimato was developed via inter-specific grafting, selecting a rootstock with a healthy root system and a scion with good quality and high yield. IIVR demonstrated Brimato during 2020-2021. The grafting operation was carried out when brinjal seedlings were 25 to 30 days old and tomatoes were 22 to 25 days old. The brinjal rootstock, IC 111056, has a tendency to develop two branches in around 5% of seedlings. Grafting was done by the side/splice method, with 5 to 7 mm slanting cuts (45° angle) made in both the rootstock and scion. After grafting, the seedlings were kept under

controlled atmospheric conditions, maintaining optimal temperature, humidity and light for the initial 5 to 7 days, followed by partial shade for another 5 to 7 days.



The grafted plants were transplanted in the field 15 to 18 days after the grafting operation. During the early growth stage, precautions were taken to maintain balanced growth in both brinjal and tomato scions. Any shoots arising below the grafting union were removed immediately. Fertilizers were applied at 150:60:100 Kg NPK/ha, along with 25 tonnes of FYM. Both brinjal and tomato started fruiting in 60 to 70 days after planting. The experimental findings revealed that about 36.0 fruits with 2.383 kg yields were harvested in tomato/plant, while in brinjal, 2.684 kg yields were obtained from 9.2 fruits/plant. The dual-grafted Brimato technology would be very useful for urban and suburban areas where limited spaces are

available for accommodating vegetables in vertical gardens or pot culture over the terrace and compound. Research on the commercial production of Grafted Brimato is continuing at ICAR-IIVR, Varanasi, Uttar Pradesh.

### Conclusion

Vegetable grafting is a new technology in India, and dual grafting is a novel way to grow vegetables in urban and semi-urban areas. This method allows both brinjal (eggplant) and tomato to be grown on a single plant. It can be helpful in cities with a growing population but limited space for farming. The demand for fresh vegetables in cities is increasing, and this new way of growing vegetables could meet that demand. More research is being done to make this method available to farmers, and it could be an important way to provide fresh vegetables in urban areas.

### References

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