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# **Brimato - New Recombinant Grafted Innovation**

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Vegetable grafting is very old concept in some Asian countries like Japan and Korea but it is a relatively new technology in India which is being seen as an alternative technique to combat biotic and abiotic stresses in vegetable cultivation. New recombinant plants are another sphere of interest of growers. Pomato (Tomato on Potato) has been successfully grown and being popularized for indoor cultivation under protected structures. Similarly, Brimato (Brinjal on Potato) has been a successful recombination. Increasing population and industrialization of agricultural land has forced the growers to grow more from small or limited area. New technologies such as vertical farming, hydroponic, aeroponic, vegetable grafting are being promoted or encouraged. Brimato will provide an opportunity to growers to get two crops from a single plant.

## **INTRODUCTION**

BRIMATO, known as egg and chips plant is a ground breaking recombinant plant developed through grafting approach by using potato as rootstock and brinjal as scion, which produce brinjal on upper portion and potato tuber in roots. This plant endures the properties of both the plant, which makes this plant popularized as dual cropping and space saving plant. It can tolerate or resist against biotic and abiotic stresses like soil borne diseases, nematodes, high and low temperature same as potato and brinjal. It can be grown indoor and outdoor likewise. It is a non-GMO plant which is developed through simple grafting technique. The reason for the successful graft union of brinjal and potato is that both the crops shares close genetic relationship as it shares same basic chromosome number and belong to the same family. Brimato plant is the compatible combination of two crop plants brinjal and potato used as scion and rootstock respectively, which assured the double yield benefits from a single

plant and can be considered as useful technology for utilizing the vertical space for future prospects as horizontal land expansion for agriculture is the most difficult objective to fulfill in the future. It is a combination of brinjal grafted on potato plant. Currently breeding and genetic engineering has been seen as most prominent technologies to resolve the problems regarding qualitative and quantitative traits of the plant. But vegetable grafting is one of the most innovative idea, can be used as ecofriendly and safe process.

### **BENEFITS OF THE PLANT**

Brimato plant is not developed through genetic engineering technique, it's a non- GMO plant, which is an environment friendly plant and relies on a grafting approach. It's a dual cropping, space saving and versatile plant, ideal for growing in a kitchen garden and small balcony and for seasonal vegetable growers. In a recent time, the breeding approaches and genetic engineering is commercially utilized in plants for many aspects, but these approaches are time consuming. Whereas, grafting emerges as

useful technology for utilizing the healthy crops with maximum returns per unit area form a single plant.

This technology could have momentous impacts in developing countries like India, where each



***Brimato or Eggs and Chips Plant Developed by Thompson and Morgan Company***

vegetable grower with small land holding can also maximize productivity and income returns by saving time, utilizing space in a better way and by reducing the input cost in terms of labour and other practices. In addition to that provides resistance from soil-borne pathogens, bacterial, fungal diseases and



**Grafted Plant**



**Flowering Stage**



**Fruiting Stage**

convenient, easy to apply approach for solving the problems related to biotic and abiotic stress aspects. It helps the plant to carry disease resistance and tolerance to environmental stresses. Rootstock with vigorous roots system selection and scion with better fruit quality is the best combination for obtaining

from nematodes, attract more diverse pollinator groups, can also provide the robust stem support to delicate plant. Potato is one of the crops which is exploited as rootstock throughout the world, especially for encounter the soil-borne diseases. This technology can be utilized as a tool in order to

upsurge the sustainable horticulture industrial income and area.

#### **RELEVANCE OF BRIMATO IN INDIAN CONTEXT**

Population in India is increasing at alarming rate which will create food crisis in coming years. Demographic pressure has forced the country to industrialization and urbanization due to which arable land is decreasing. Technologies like Pomato and Brimato will be useful as 'Space- saving plants' yielding more crops per unit area. Moreover such ideotype plants can be grown indoor / balcony or in pots, thus will provide more crops and returns. This can be a technological intervention to reduce dependence on limited agricultural land of the country.

#### **WORK DONE AT CSKHPKV PALAMPUR**

A simple grafting technique can develop dual crop plant called as 'Brimato' or Egg and Chips plant. The sowing of potato rootstock and nursery of brinjal can

be done approximately one month prior to grafting, and after that brinjal scion grafted on potato rootstock either by tongue or cleft grafting, use the scion and rootstock of same diameter, so it can ensure the maximum possibilities of successful compatibility of cambium cell layers in graft union. Potato tubers are harvested when it gains the marketable stage and the brinjal plant is allowed to grow further as it bears fruit for long period of time. Brimato plant yield brinjal fruit 400-500 gm/ plant and potato tubers 300-400 gm/ plant respectively.

#### **CONCLUSION**

Brimato is one of those plants which can create number of opportunities for making the best use of the space and land as it is known as dual cropping plant. Vegetable growers who have small land holding they can utilize it in a best way to increase return per unit area. Thus, in future this grafting miracle plant may bring fortunate and profitable changes in the present scenario of vegetable production.