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Effect of age of root stock, grafting time and varieties on the success of soft wood grafting in mango

■ JAGANNATH MANDAL, BIPUL KUMAR MANDAL¹, R.R. SINGH² AND U.S. JAISWAL²

Associated Authors:

¹Krishi Vigyan Kendra,
AURANGABAD (BIHAR) INDIA
²Department of Horticulture, Bihar
Agricultural College, Sabour,
BHAGALPUR (BIHAR) INDIA

Author for correspondence :

JAGANNATH MANDAL
Department of Horticulture, Bihar
Agricultural College, Sabour,
BHAGALPUR (BIHAR) INDIA

Abstract : In order to standardize the effect of grafting time and age of root stock of mango varieties for soft wood grafting to improve its success rate, the experiment was carried out at the Horticultural garden of Bihar Agricultural College, Sabour, Bihar during 2008- 2009. Among the different cultivar tested, Zardalu and one month old root stock grafted in the middle of July '08 took only 13.54 and 12.36 days, respectively for sprout initiation. However, the maximum success per cent of 59.79 and 79.83 were registered in Dudhia Maldah after 30 days of grafting time and two month old root stock grafting in the middle of Aug '08'. Similarly, maximum survival per cent of 56.04 in Doodhia Maldah after 60 days and 73.50 in two month old root stock, grafted in middle of Aug '08' were recorded. Apart from this maximum linear and radial growth after 90 days were noticed in Mallika and Mahmood Bahar, respectively. Two month old root stock when grafted in middle of Aug '08' and one month old root stock performed in middle July '08' attained maximum linear and radial growth. While variety Chousa and two month old root stock grafted in middle Aug '08' obtained maximum number of leaves 10.06 and 10.93, respectively.

Key words : Mango, Cultivars, Root stocks, Grafting

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Mango is the third largest cultivated fruit in the world in terms of both area and production and it also occupies a prominent place amongst the fruit crops grown in India. The agro-climatic condition of Bihar is very congenial for mango orcharding and there is tremendous scope for increase the area under mango cultivation. One of the major requirements for achieving the increased production of mango crops would be the rapid multiplication and distribution of superior clones. In recent times, many detached methods of grafting has been successfully used as an efficient economic and rapid method of propagation of mango (Choudhry, 1984; Bhan *et al.*, 1969; Gaur, 1984; Roy and Hoda, 1996). However, the success of grafting depends on different factors such as influence of environmental parameters, age of root stock, grafting time and method of grafting (Hartman and Kertar, 1972). Hence, it is highly essential to standardize the effect of grafting time and age of root stock of important mango varieties for soft wood grafting process

in order to improve its success rate.

RESEARCH METHODS

The present investigation was carried out at the Horticultural garden of Bihar Agricultural College, Sabour during the year 2008-2009 in order to study the effect of different age and grafting time on success of soft wood grafting in ten important cultivars of mango. The experiment was laid in split plot design with three replications. There were 20 grafts in each replication. Stones were sown in the field at the distance of 40cm x 50cm on 18th June 2008 and the seedling was ready for grafting on particular date as per programme from 18th July to 18th Feb. 2009 for the performance of the different age. The scion shoots for grafting were selected from the current season and six month old terminal shoots of different mango varieties *viz.*, Amrapali, Prabhaskar, Gulabkhas, Mahmood Bahar, Dudhia Maldah, Zardalu, Chousa, Bombai and Krishnabhog. Grafting was done in