

Effect of Grafting Methods and Dates on the Graft Take Rate of Persian Walnut in Open Field Condition of Rukum (East), Nepal

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Abstract

A field-based experiment was carried out in Rukum (East), Nepal, from February to June 2020, to assess the effect of different methods and dates of grafting on the graft take rate of Persian walnut (*Juglans regia* L.) in field condition. The experiment comprised ten treatments with combination of two factors. The two factors included the grafting dates including: 13th, 19th, and 26th of February, 4th and 11th of March and grafting methods including: outdoor grafting and bench grafting (tongue grafting in both). The experiment was laid out in a Randomized Complete Block Design with three replications. The findings revealed that bench grafting resulted in significantly better outputs than outdoor method for length of scion (at 30 and 60 days after grafting) and graft take rates. Bench grafting showed 44% graft take followed by outdoor grafting (38% graft take). Plants grafted on 13th and 19th of February showed statistically better results for growth performance over the other dates. Plants grafted on 19th of February showed 67% graft take with 53% saleable plants, but statistically similar to the plants grafted on 13th and 26th of February. The earliest bud burst was observed in plants grafted on 13th and 19th of February in 31 and 33 days, respectively. Bench grafting on 19th February showed significantly higher length of scion (16.4 cm) at 60 days after grafting. However, non-significant results were seen for other parameters due to the interaction. Therefore, bench grafting on 13th, 19th and 26th of February led to the best graft take in Persian Walnut.

Keywords: Bench grafting, Bud burst, Hartley variety, Outdoor grafting, Persian Walnut