

Effects of Grafting Time and Type on Graft Success in Chestnuts

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Aim of the study: Turkey is a country with very rich biodiversity resources. Particularly, forests have an important place for plant species and composition. One of these valuable assets is the Anatolian chestnut (*Castanea sativa* Mill), which is the only chestnut species that is naturally found in Turkey. Since chestnuts were under considerable risk due to fungal and cancer diseases, the propagation of this significant tree species through generative or vegetative means is of a great importance. This study aimed to determine the most appropriate grafting time and type in two chestnut varieties in the western Black Sea Region, specifically in the Duzce Province.

Material and Methods: In this regard, two different varieties (Mariguale and Erfelek) and three different grafting types (budding, tongue and cleft) were studied in two different environments (greenhouse and open field) across five different months (December, January, February, March and April). The factorial design and variance analysis (ANOVA) was used for the experiment.

Results: Results showed that grafting success in the greenhouse has been twice as much as that of in the open field. Among the grafting types, tongue grafting was the most successful across all months except for July. However, only in July, the bud grafting was found to be the most successful technique. The highest success was achieved in February and then July. From varieties, the Mariguale was more successful than the Erfelek. In addition, 86% success was obtained from the Mariguale variety grafted by the tongue method in the greenhouse In February. In addition, 83% graft success was achieved by the Mariguale variety in July. Based on findings, tongue and bud grafting, as the most appropriate grafting types and February and July, as the most favorable times could be recommended for further grafting experiments in Duzce Province. During winter and spring periods, graft success was found to be greater in the greenhouse environment.

Keywords: Graft, chestnut, *Castanea sativa* Mill., Erfelek, Mariguale.