

Optimization of the Grafting Technique in Argan (*Argania spinosa* L. Skeels) and Carob (*Ceratonia siliqua* L.) in the Eastern Region of Morocco

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Abstract

The main objective of this study was to optimize the grafting technique in Argan (*Argania spinosa* L. Skeels) and Carob (*Ceratonia siliqua* L.) in the eastern region of Morocco. The grafting technique proved to be the most suitable for the production of argan seedlings, and the use of young rootstocks (4 weeks) and intercalary grafts improved the success rate (60% success rate) and shortened the time needed to establish the weld. The success of Argan grafting depends significantly on the choice of genotype and type of graft. The “X” genotype stands out with a success rate of 26.66% on two-year-old rootstocks. “CHOUIHYA” also offers good prospects, with a success rate of 16.66%. The “BENI-SNASSEN” and “SOUHAYL” genotypes are less successful, with “SOUHAYL” being particularly recalcitrant. For hypocotyl grafting of Argan trees on 4-week-old rootstocks, the “BENI-SNASSEN” genotype is promising in terms of success rate, but suffers from rot problems. “SOUHAYL” has a moderate success rate but a very high wilting rate, compromising its viability. “CHOUIHYA” is the least successful, with high wilt and rot rates. Grafting without leaves has an overall advantage in terms of success rate, while grafting with leaves is more vulnerable to fungal attack. To optimize grafting, it is preferable to choose leafless grafts while ensuring grafting conditions that minimize the risk of wilting, such as rigorous humidity control. Optimizing grafting in Carob has revealed that the type of rootstock and scion influences the success of apical cleft grafting. Rootstocks from young mother plants (PMJ) showed a better success rate (26.66%) than those from mature mother plants (PMA) with 13.33%. Another study showed that the use of leafy rootstocks and crown grafts improved grafting success.

Keywords

Optimization, Grafting, *Argania spinosa*, *Ceratonia siliqua*, Genotype, Cloning, Rahma Variety, Eastern Morocco