

## COMPARISON OF GROWTH AND MORPHOLOGIC CHARACTERISTICS OF IN VITRO MICROPROPAGATED AND IN VIVO SEED-RAISED PISTACHIO PLANTS UNDER FIELD CONDITION

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### **Abstract:**

Pistachio is a very important horticultural crop in Iran because of its nutritious value as well as economic revenue for the country. Bearing in mind the problems such as decreasing the quality and quantity of irrigation water and subsequently increasing salinity in pistachio orchards in many pistachio plantation areas, it is necessary to improve our rootstocks and commercial cultivars to tolerate these conditions and to be able to use the brackish water and saline soils. To achieve this, tissue culture and in particular micropropagation can help us in cloning and mass propagation of desirable rootstocks and cultivars more efficiently and shortening the time required. However, before large scale application a field evaluation of growth and development of micropropagated pistachio plants would be very useful. This project was conducted to study growth and morphological characteristics of micropropagated-plants compared with conventionally seed-raised pistachio seedlings under field conditions. Proliferation was done in DKW medium containing BAP 2mg/L and B5 vitamin solution. Rooting was done in modified MS medium with half of macro and micro nutrient concentration with IBA 2.5 mg/L and NAA 0.1 mg/L. The pistachio plants of both types were produced and transplanted into the field under similar conditions. After initial establishment, monitoring and recording of vegetative growth parameters (height and diameter) were carried out regularly based on complete randomized design with 5 replications. The results showed that micropropagated pistachio plants had statistically significant greater heights compared with seed-raised plants in Rafsanjan condition (Pistachio Station No.2, Iran's Pistachio Research Institute) but the differences for the diameter were not statistically significant. No particular morphological differences or distinguished variations were observed between seedling and tissue culture plants.