

## **Tissue culture technique: is it a safe method to micropropagate elite date palm (*Phoenix dactylifera* L.) cultivars?**

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**Abdelrahman S. A. Al-Wasel**

Department. of Horticulture and Forestry, King Saud University  
Al-Qassim, Saudi Arabia, , P. O. Box 1482. email< awasel@yahoo.com>

### **ABSTRACT**

*Date palm is one of the most important cultivated fruit crops especially in Arabian and other countries in the world. The success of propagation of date palm by tissue culture technique has a great role in the expansion of date palm orchards and the exchange of elite cultivars among countries. Most of the commercial laboratories focus on micropropagation of date palm and no evaluation strategies have been implicated to assess the uniformity of their tissue-cultured trees.*

*In the last few years, variations have been noticed among in vitro produced trees of different date palm cultivars. Delay in fruiting, fruit set failure and abnormal female spikelets development were observed in Barhee cultivar. Supernumerary carpels (4-6 carpels) in a single flower of both Barhee and Khalas cultivars are among the abnormal phenomena. In addition, slow growing, dwarf trees in Barhee, Khalas, Sukary, and Ajuwa cultivars, and variegated leaves in Khalas and Ajuwa have been observed. All these phenomena would greatly affect the utilization of tissue culture technique in the micropropagation of date palm and hamper the expansion of date palm orchards. Further investigations are still underway to assess these abnormalities whether they are due to genetic changes occurring during the micropropagation course or that they are epigenetic changes caused by some medium components and trees will behave normally after some time.*