

USING DATE PALM SUCKERS AS MATERIAL FOR VEGETATIVE PROPAGATION BY GROWTH REGULATORS INJECTION

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ABSTRACT

Date palm (*Phoenix dactylifera* L.) trees are essential components of farming systems in dry and semi arid regions and can be produced equally well in small farm units or in large scale commercial plantation units. Palm tree is an excellent candidate for cultivation in Egyptian agricultural projects in new reclamation regions, such as Toshkay and Shark El-Ouainat. Date palm multiplication by transplanting offshoots still remains the best and most common method. Thus, this experiment was carried out to enhance suckers rooting ability and leaf growth of some date palm cultivars by plant growth regulators injection and replanting under greenhouse condition. Suckers of date palm cultivars Sewy, Hayani and Zaghloul, with weights of 2 to < 4 kg and 4-8 kg, were planted on two dates, (mid of March and September) in each season (2007 and 2008) at the nursery of the Horticulture Research Institute, Agricultural Research Center, Giza, Egypt. All suckers received 9 auxin injection treatments (3 ml) before planting, The treatments were as follows: 1) distilled water (control treatment), 2) 1000 ppm NAA, 3) 1500 ppm NAA, 4) 2000 ppm NAA, 5) 2500 ppm NAA, 6) 3000 ppm NAA, 7) 1000 ppm IBA, 8) 2000 ppm IBA and 9) 3000 ppm IBA. The obtained results showed that cultivar Hayani has significantly higher roots number/sucker than cultivars Zaghloul and Sewy. The opposite was true concerning root length. Planting in mid March was better than in mid September for all parameters recorded on suckers. Using auxin injection in the suckers proved significantly better survival percentages and means of roots number, length, diameter and length of developed leaves. Moreover, suckers injected with IBA at 3000 ppm or NAA 3000 ppm and planted in mid March recorded the best survival percentages, means of roots number, length and length of developed leaves for date palm cultivars Hayani, Sewy and Zaghloul.

Key words: *cultivars, date palm, growth regulators, Hayani, IBA, injection, NAA, Phoenix dactylifera, suckers, survival percentage, Sewy, rooting, Zaghloul.*

1. INTRODUCTION

Date palm, (*Phoenix dactylifera* L.) is one of the oldest fruit trees in the world and is mentioned in the Holy Qur'an and Bible. Date palm trees are essential components of farming systems in dry and semi arid regions, and can be produced equally well in small farm units and in large scale commercial plantation units. Palm tree is an excellent candidate for cultivation in Egyptian agriculture projects in new reclamation regions, *i.e.* Toshkay and Shark El-Ouainat. Date palm is propagated commercially by offshoots which are mainly produced in limited numbers during the early life of the tree, depending on the variety and prior fertilizer treatment, irrigation and earthing up around the trunks (Bougeoudoura, 1983).

Aerial offshoots (suckers) are usually discarded and rarely used for propagation. However, they should be removed early when they are small in size, possibly to avoid causing a weak point in the mother stem (Al-Obeed, 2005). Rooting capacity has been correlated with some endogenous substances such as carbohydrate content (Reuveni and Adato, 1974) and rooting inhibitors which are found in a number of species. It is suggested that these are a principal reason for rooting failure in certain difficult to rooting cuttings. Offshoots of certain high quality commercial cultivars have been always difficult to root and their survival ability is low (Al-Ghamdi, 1988 and Al-Mana *et al.*, 1996).

El-Hamady *et al.*, (1992) found that small