



جامعة الإمارات العربية المتحدة
United Arab Emirates University

The College of Graduate Studies and the College of Food and Agriculture

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Master Thesis Defense

Entitled

ENHANCEMENT OF VEGETATIVE GROWTH AND NUTRIENT CONTENT OF MICROPROPAGATED DATE PALM SEEDLINGS AFTER INOCULATION WITH RHIZOGLOMUS INTRARADICES ISOLATED FROM UAE

by

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Abstract

Date palm (*Phoenix dactylifera*) is considered the main agricultural crop in many dry regions of the world including United Arab Emirates. It has been demonstrated that date palm forms a beneficial symbiotic association with arbuscular mycorrhizal (AM) fungi. AM fungi are well-known in improving plant growth, increasing nutrients uptake and assisting plant under biotic and abiotic stressful conditions. The main aim of the present study was to evaluate the efficiency of a native isolate of the AM fungus *Rhizoglopus intraradices* in improving the vegetative growth and nutrients content of two date palm varieties in UAE, namely Khalas and Khenazi. The mycorrhizal strain, *R. intraradices*, was isolated from a farm near Abu Dhabi and was propagated in the labs of UAEU. In vitro micropropagated date palm plantlets were subjected to three treatments under greenhouse condition (T1: Control. T2: Microbial Wash. T3: *R. intraradices*). The inoculated date palm varieties had revealed an increase in plant growth parameters such as shoot and root fresh weight, chlorophyll a, b content and improvement in the P and micronutrients uptake. The results showed that there is a potential of using *R. intraradices* in the sustainable production of micropropagated date palms. Future studies are needed to highlight the function and the role of the new isolate of the fungus under different treatments and environmental condition of UAE.

Keywords: *Phoenix dactylifera* L, *Rhizoglopus intraradices*, AM fungi, UAE