



جامعة الإمارات العربية المتحدة
United Arab Emirates University

The College of Graduate Studies and the College of Food and Agriculture Cordially Invite
You to a

Master Thesis Defense

Entitled

*FUNCTIONALITY ASSESSMENT OF THE NEWLY DISCOVERED ARBUSCULAR MYCORRHIZAL
(AM) FUNGUS FROM UAE, DOMINIKIA EMIRATIA*

by

Laila Ahmed Al Dhaheri

Faculty Advisor

Dr. Mohamed N. Al-Yahya'ei, Department of Arid Land Agriculture

College of Food and Agriculture

Date & Venue

2:00 PM

Sunday, 21 April 2019

Room 132, Building F3

Abstract

Arbuscular mycorrhizal (AM) fungal species form symbiotic association with most of terrestrial plants. This association helps plants to improve their water and nutrition uptake. In return, plants provide suitable habitat to the fungi. Around 300 AM fungal species were described so far from different parts of the world. Lately, *Dominikia emiratia* from UAE joined the list of known AM fungal species. It was found in Sweyhan, Abu Dhabi, associated with several plants in two different types of farming systems, namely organic and conventional. The discovery of the new species opens the door for further applied and basic research. This Thesis is aiming at evaluating the beneficial functionality of the fungus when associated with two demanded date palm varieties, *khalas* and *khunaizi*. under greenhouse condition for 8 months. The results suggested that inoculation with *D. emiratia* significantly increased the biomass and leaf surface area of the two date palm varieties. In addition, inoculated *khalas* plants have shown higher chlorophyll and Phosphorous contents. Different fungal structures have been observed and recorded on the inoculated plant roots. The current work represents the first effort to evaluate the functionality of *D. emiratia*. It is a step towards the sustainable future of cultivating date palm. Furthermore, it opens new doors for further research to investigate about the utilization the new fungal species in promoting the growth of other plant species.

Keywords: *Dominikia emiratia*, Arbuscular Mycorrhizal Fungi, Date Palm, Chlorophyll, Phosphorous