

# POLLEN ULTRASTRUCTURE OF SEEDLING DATE PALM (*PHOENIX DACTYLIFERA* L.)\*

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## ABSTRACT

Pollen from 61 seedling date palm males grown in the Central Region were examined and photographed using a scanning electron microscope (SEM). Pollen grains from all males were monad, elliptical-peroblate with one deep germinal furrow across the surface. In all types of pollen grains, the exine pattern was reticulate with irregular and semicircular shaped pores. Significant differences were found in pollen size and shape in most cases. A comparison between pores frequency, size and exine porosity of pollen grains proved to differentiate date palm males under study. Therefore, these parameters could be used as a taxonomic tool for the identification of date palm males.

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**Key words:** Pollen ultrastructure, exine pattern, pore frequency, exine porosity.

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## INTRODUCTION

Most attempts to distinguish date palm males are mainly based on morphological characteristics. Pollen structure proved to

offer a reliable way for distinguishing some species of tree fruits. Thus, Thakur and Thakur (1970) reported that pollen grain size was not useful but pollen morphology afforded a new tool for the identification of stone fruit species. Fogle (1977a, b) indicated that differences in size and exine surface of pollen grains were useful for distinguishing peaches, nectarines, apples, sweet cherry and European plums. Maas (1977) examined pollen from small fruit tree species and found that pollen form, size, exine characteristics and pore structure were of taxonomic value. Westwood and Challice (1978) classified 18 pear species by observing pollen grains exine topography, perforation type, perforation size and frequency and exine features.

Little information is available in this respect on pollen grains of date palm. Parthasarathy (1970) found differences in pollen exine among five palm species. Tisserat and De Mason (1982) identified cultivars and clones in *Phoenix* based on grain length and width, occurrence of waxy materials and perforation frequency, shape and

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