

Evaluation of Morphological Characteristics of Pollen Grains and Inflorescence in Several Male Date Palm Trees Cultivars

A. Shah Hosseini and A.R. Shahsavar^{*B}

Evaluation of morphological characteristics of pollen grains plays an important role in identifying the different male trees cultivars. In this research morphological characteristics of the pollen grains of male date palm trees of eight cultivars including 'Shahani', 'Kabkab', 'Zahidi', 'Beraem', 'Faryab', 'Sheikhali', 'Fard' and 'Jarvis' were studied using the scanning electron microscope. Results indicated that pollen grains shape of male date palm trees in all cultivars were monad, elliptical, fusiform and have a longitudinal groove. Outer surface ornamentations of the pollen grains (exine) were reticulate, irregular and with different sizes. Also the pollen grains have different dimensions (length and width), weight, number of pores and percentage of germination. So that the highest length of pollen grains in 'Fard' cultivar (24.52 μm), the highest width of pollen grains in 'Zahidi' (13.24 μm) and 'Faryab' (13.20 μm) cultivars, the highest amount of weight of pollen grains in 'Jarvis' (22.10 g) and 'Faryab' (21.25 g) cultivars, the highest number of pores in the outer surface of pollen grains (18 pores per μm^2) and the highest percentage of germination (78.30 %) in 'Fard' cultivar was observed. The characteristics of spathe (inflorescence cover) and inflorescence, 'Zahidi' cultivar had the highest length of the spathe (77.67 cm), 'Jarvis' cultivar had the highest diameter of the spathe (19 cm), 'Jarvis' (1619.67 g) and 'Zahidi' (1535.67 g) cultivars had the highest spathe weight, 'Sheikhali' cultivar had the highest number of strand in the spathe (183.67), 'Kabkab' cultivar had the highest length of strand in the spathe (21.05 cm), 'Jarvis' cultivar had the highest number of flower in each strand (72.53) and whole spathe (10534.66). Also spathe color was observed brownish in each eight male date palm trees cultivar.

Keywords: Monad, Percentage of germination, Spathe, Scanning electron microscope, Reticulate.

1. Ph.D. Student and Associate Professor, Department of Horticultural Science, School of Agriculture, Shiraz University, Shiraz, Iran, respectively.

^{*}Corresponding author, Email: (shahsava@shirazu.ac.ir).