

**EFFECT OF POLLEN GRAINS CONCENTRATION ON
BUNCH WEIGHT AND FRUIT QUALITY OF
HALAWY AND HAYANY DATE
PALM CULTIVARS**

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ABSTRACT: This experiment was executed throughout two successive seasons of 2006 and 2007 on two date palm cultivars; Halawy and Hayany grown at the Experimental Orchard of Assiut University, Faculty of Agriculture. Eight palms of 17 years old from each cultivar were chosen to study the effect of either fresh or stored pollen grains at three concentrations (5, 10 and 20 %) on bunch weight and fruit quality of these two date palm cultivars. The traditional pollination (control) was executed by inserting five male strands, either from stored or fresh strands, into each female spathe. The experimental design was a completely randomized block.

Generally, Initial fruit set (IFS) under different treatments took the same trend during the two studied seasons. The concentration of 5% pollens in the pollination mixture recorded the lowest IFS%, fruit retention (%) (FR) and bunch weight (BW). As the concentration of pollen grains increased more than 5%, the IFS%, FR% and BW were significantly increased towards maximum value in the control or traditional pollination (TP). Generally, the results of fruit and flesh weight took an opposite trend of fruit set or bunch weight in both cultivars and seasons. The least value of fruit and flesh weight was produced from the traditional pollination method, while the highest value was produced from the pollination using pollens at 5% concentration. Data also revealed that there were no significant differences between stored or fresh pollen on most of the studied traits in both cultivars and seasons. Generally, T.S.S. % took the same trend during the two studied seasons of both cultivars. The

highest T.S.S.% was recorded by using pollen grains at 5% concentration and then, the percentages of T.S.S. was gradually decreased with increasing the pollen concentration. The results of total sugars took the same trend of the T.S.S.% where the lowest value was obtained from the traditional pollination method. Total and reducing sugars (%) reached the highest value by using 5% pollen concentration.

Key words: Pollination, *Phoenix dactylifera*, dioecious, pollencarrier, initial fruit set.