

Compatibility Relationships Within and Between Ten Date Palm Cultivars (*Phoenix dactylifera* L.). I- Fruit Set and Yield

Al-Obeed, R. S. and A. O. Abdul-Rahman

Plant Production Department, College of Agriculture, King Saud Univ., Saudi Arabia.

ADDITIONAL INDEX WORDS Date palm, pollen sources, incompatibility, setting, yield.

ABSTRACT

This study was conducted to examine the effects of ten pollen sources within or between ten date palm cultivars namely: "Succary", "Barhi", "Nebut Seif", "Seleg", "Khudari", "Menafey", "Saki", "Maktoumy", "Sefry" and "Serey" on the percentages of fruit set, unfertilized flowers, fruit drop, total yield (Kg/bunch), percent of fruits with grade (A), fruit pulp and seed weight as a percent to average fruit weight. Variations in the percentages of fruit set, unfertilized flowers, fruit drop and fruits with grade (A) were found among the ten cultivars according to pollen sources. Data of fruit set percentages showed a degree of cross incompatibility with "Saki" and "Serey" as a pollen sources with "Khudari" as a seed parent. Self incompatibility was also evident in "Khudari" cultivar, however, data showed some evidence of self compatibility that may exist in "Menafy" and "Barhi" cultivars. The variations in fruit set percentages among the ten cultivars might either be due to differences in pollen viability or differences in compatibility barriers. Also, the data showed that pollination of "Succary" flowers with "Maktoumy" and "Nebut Seif" pollens produced the highest total yield per bunch in 1999 and 2000 seasons, respectively. Also, "Barhi" cultivar produced higher total yield (kg/bunch) with "Saki" and "Maktoumy" pollens in the first and second seasons, respectively. As for the percentage of seeds weight, data showed that the "Succary" pollen produced significantly higher percentage of seed weight in most cultivars in the two seasons, while the opposite is true for "Seleg" cultivar in both seasons. Results also showed that "Barhi" as a seed parent produced the lowest percentage of fruits with grade (A) with "Nebut Seif" and "Serey" as a pollen parents in the first season and with "Seleg" and "Saki" in the second season. Moreover, pollination with different pollen sources did not give a clear trend for percent pulp weight in the ten date palm cultivars.