

PLANT PRODUCTION

Compatibility Relationships in Some Date Palm Cultivars (*Phoenix dactylifera* L.)

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Abstract. Crosses and reciprocal crosses were carried out between females and males of four date palm cultivars namely, Nebut Seif, Seleg, Succary and Barhi. The degrees of compatibility and incompatibility were determined. Pollen viability ranged from 86-100% by using acetocarmine method, while it ranged from 43-79% by germination method. Nebut Seif female produced lower fruit set percentage with self pollination, while Seleg, Succary and Barhi females gave different values of fruit set percentages when self pollinated. Four female palms under study produced the highest fruit setting when pollinated with Barhi pollens. These indicate the existence of partially self incompatibility and high degree of compatibility with Barhi males. Nebut Seif and Succary female cvs., have more unfertilized flowers in all pollination treatments in the first season than that in the other female palms. The maximum fruit drop occurred in June and still constant till the harvesting. Data showed that the percentages of ripening fruits, bunch weight and seed weight varied in the four date palm cultivars considerably according to the type of pollen used. Seed germination percentages increased markedly in Nebut Seif, Seleg and Barhi female cvs. when pollinated with Seleg pollens. Furthermore, the effect of self- and cross- pollination within or between four cultivars on physical and chemical properties of fruits were discussed.