



PHYSIOLOGICAL STUDIES ON FLOWERING, SETTING, PRODUCTIVITY AND FRUIT QUALITY OF BARHEE DATE PALM

By

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ABSTRACT

The present study was carried out on “Barhee” date palm during two successive experimental seasons within 2018 & 2019 years. The study aimed to improve fruit set, productivity and fruit quality by foliar application with sugar and boron under coverage and non-coverage conditions. Moreover, the aim of this research extended to study the impact of different pollen grain sources on productivity and fruit characteristics, as well as, identify the causes of fertilization failure.

According to the results of the current study, it could be advised that sugar spraying at 5.0 g/L + boron at 150.0 mg/L as well as inflorescences covering immediately after pollination increased fruit set percentage, productivity and fruit quality of “Barhee” date palm growing under Ismailia condition and suffered from female inflorescences and fertilization failure.

Furthermore, pollen grains collected from Giza and New Valley locations significantly surpassed the other males as both gave the highest fruit set %. In addition, El-Sharkia and New Valley location resulted in the greatest values of pollen grains viability. Moreover, the highest fruit weight and productivity of female “Barhee” date palm was recorded when using pollen grains from Aswan location. The highest values of fruit quality were statistically concomitant to Giza and New Valley location pollen sources. Conclusively, from the obtained results, it could be concluded that using of Giza and New Valley location pollen sources could be safely recommended, as their beneficial effects on fruit set, productivity and fruit quality of “Barhee” date palm grown under similar environmental conditions and horticulture practices adopted in present experiment. Besides, the anatomical studies which recommended that failure of fertilization in “Barhee” date palm due to many reasons such as, absence and atrophy of ovule, deformity of stigma and absence embryo sac. All of these reasons caused fertilization failure of Barhi date palm or produced undeveloped fruits.

Keywords: Barhi, Date Palm, Males, Pollination, Fruit yield and Quality.

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