

UTILIZATION OF SOME SUBSTANCES TO IMPROVE QUALITY OF DATE PALM FRUITS

By

AMAAL ALI ZAINHOUM MAHMOUD

B. Sc. (Pomology), Fac. Agric., Cairo Univ., Egypt, 2010

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SUPERVISION SHEET

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ABSTRACT

During 2012 and 2013 seasons, Zaghloul date palm fruits were sprayed three times (at growth start, just after fruit setting and at one month late) with four substances namely Amino acids enriched with micronutrients (Fe, Zn, Mn, B and Mo), Sugar alcohol enriched with micronutrients (B, Fe, Mn, Zn and N), Algae extract formulation containing (potassium oxide, phosphorus oxide, N, Zn, Fe and Mn) in concentration of 2.0 cm/l and licorice (*Glycyrrhiza Glabra* L.) in concentration of 7.0 g/l. This study consisted of pre and postharvest treatments divided into two experiments. The first experiment was in field to study the effect of spraying of various substances (amino acids, sugar alcohol, algae extract and licorice) on rate of yield and quality of Zaghloul date palm fruits. The second experiment divided into two sections (A&B) A. It was done in laboratory to study the effect of pre-harvest treatments on quality of Zaghloul dates during cold storage. B. It was done in laboratory to study the effect of pre-harvest treatments and immersing each treatment in 1% chitosan as postharvest treatments on fruit quality of Zaghloul dates during cold storage. Treated fruits were harvested at khalal stage and stored up to 3 months at 0°C and relative humidity (RH) 90-95% in order to study the effect of all treatments on fruit quality and storability of Zaghloul date palm. All treatments was very effective to improving fruit quality in terms of increasing (fruit dimensions, fruit weight, fruit volume, flesh weight, fruit firmness, total soluble solids °(Brix), total sugars and total anthocyanin %) and decreasing (seeds weight %, weight loss %), discarded %, total acidity %, total soluble tannins, microbial load) as compared with the control treatment. The best results with regard to fruit quality and storability of Zaghloul date palms were obtained with spraying licorice three times and immersion in 1% chitosan.

Key words: Zaghloul date palm- *Phoenix dactylifera* L. - Spraying- Amino acids- Algae extract- Sugar alcohol- Licorice root extraction- *Glycyrrhiza Glabra* L. - Nutrients- Chitosan- Cold storage and Quality.

DEDICATION

*I dedicate this work to whom my heartfelt thanks; to my departed Father **Ali**, my mother **Soha**, my uncle **Alaa** and my brothers **Ahmed** & **Mohammed** for their patience and for all the support they lovely offered along the period of my Post graduation.*

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