

**IMPROVING FLOWERING, PRODUCTIVITY AND
FRUIT QUALITY OF PICUAL OLIVES USING
SOME GROWTH PROMOTERS AND
NATURAL EXTRACTS**

By

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B.Sc. Agric. Sc. (Horticulture), Ain Shams University, 2010

M.Sc. Agric. Sc (Pomology), Ain Shams University, 2015

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ABSTRACT

Ahmed Mohamed Hassan Mahmoud: Improving flowering, productivity and fruit quality of Picual olives using some growth promoters and natural extracts. Unpublished Ph.D. Thesis, Department of Horticulture, Faculty of Agriculture, Ain Shams University, 2019.

This study was carried out during 2017 and 2018 seasons on adult olive trees cv. Picual (8 years old) in a private orchard located at Cairo Ismailia Desert Road, (about 80 Km from Cairo), Ismailia Governorate, Egypt. Trees were grown in sandy soil, under drip irrigation system, uniform in shape and received the common horticultural practices. The Study involved three individual experiments, first experiment was designed to study the effect of spraying olive trees with algae and moringa leaves extracts at different concentrations and dates (i.e. mid of November or mid of December) where each date had a separate group of trees. Second experiment was designed to study the effect of spraying olive trees with putrescine (PUT), salicylic acid (SAL) and ascorbic acid (ASC) at different concentrations and dates (i.e. mid of November and mid of December) and each date had a separate group of trees. The third experiment was designed to study the effect of spraying olive trees with nano-boron and nano-zinc at different concentrations on vegetative growth, leaf pigments and mineral content, flowering, fruit set, yield and fruit physical and chemical properties of Picual olive trees. However, in the first experiment, results indicated that all different spraying treatments of algae and moringa extract at different spraying dates had a positive effect on vegetative growth, leaf mineral contents, fruit set, yield and fruit chemical properties in comparison with the control. As for the second experiment, results revealed that all different spraying treatments of some growth active substances at different spraying dates had a positive effect on most of parameters in comparison with the control. Concerning the third experiment, results illustrated that all different spraying treatments of nano-boron and nano-zinc had a positive effect on the same parameters

as compared with the control. Treatment of nano-boron at 20 ppm + nano-zinc at 200 ppm at three times (i.e. the first one at mid of December, the second before the flowering and the third one during full bloom) was the most effective treatments to enhance vegetative growth, leaf minerals content, flowering, fruit set, yield, fruit quality, and oil content and quality.

Key words: Olive (*Olea europaea*) – Picual – Algae extract – Moringa leaves extract – Putrescine – Salicylic acid – Ascorbic acid - Nanoboron - Nanozinc – Vegetative growth – Flowering – Leaf mineral content - Fruit set – Yield – Fruit quality – Oil properties.

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