

**EFFECT OF DIFFERENT RESOURCES OF BORON
ON VALENCIA ORANGE TREES GROWTH AND
YIELD UNDER RECLAIMED SOILS
CONDITIONS**

By

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ABSTRACT

This study was carried out during three consecutive (2016-2019) experimental seasons on fruitful trees of Valencia orange (*Citrus sinensis* L. Osbeck). Experimental goals was: conducting an exploratory experiment via analyzed leaves of Valencia orange to examine the seasonal patterns of B contents for the two experimental Sites, named phase "I". Then, we can select the suitable application rate of some B forms with the best time for applications, named " phase II". Phase "I"(The exploratory experiment) Five homogenous trees /site were selected during fruit mature stage (at November 2016). Leaf samples monthly were gathered for 12 months during 2017 to measure the extent of changes that occur in flowers (Histological studies) and leaves. To find out the most suitable times for the foliar applications treatments through phase "II" to remedy B deficiency for the two sites under study .Phase "II": Aimed to investigate the influence of foliar spray with three Boron forms Phase "I" : Physiological parameters and Leaf elements contents were fluctuated between the highest or the lowest contents from site to another during the twelve samples which reflected on tree physiological performance , nutrient status and fruit production . The results confirmed the deficiency of boron in both sites and led to determining the most appropriate time for adding the treatments of the second part of this study. Phase" II": Generally, experimental treatments improved tree physiological performance and nutrient balance status which reflected on tree productivity and fruit quality when compared to the control for both sites. Whereas, Boric acid alone or mixed with CMS and B/MO compound treatments were professional in increasing : leaf : pigments, dry matter and sugars, Micohyza root colon % & spores , leaf : macro and micro elements and tree yield and most of fruit physical & chemical properties for both sites in compared to the control during the two studied seasons.

Key words: Valencia orange; Boron forms; Mycorrhiza; Macro-elements; Micro-elements; Pollen grain Vitality.

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