



Introduction



1. INTRODUCTION

Citrus is one of the most important world fruit crops. However, citrus in Egypt is ranked as the first fruit crops, Balady mandarin is considered as one of the most popular fruits among the citrus fruit group; it's acreage tends annually to increase due to the high demand for both local and fruiting area and foreign markets reached 92060 Feddans produced about 730901 tons of fruits according to the survey of Ministry of Agriculture, in 2006.

Mandarin fruit production represents about 25% of the total production of citrus fruits in Egypt.

Micronutrient problems are of increasing importance in sandy soil which are inherently low in its fertility. Such soils have a low exchange capacity and retain only small amounts of applied exchangeable plant nutrients against the leaching action of irrigation and other mechanisms (koo, 1984)

The role of boron in plant metabolism includes many physiological aspects, such as nucleic acid metabolism, protein, hormone, and carbohydrate biosynthesis as well as translocation, photosynthesis, cell division, cell wall synthesis and membrane function (Gupta et al., 1985 and Blevins and Lakaszweski, 1998). In addition, boron is known to play a key role in the extension of plant cell walls through its association with cell-wall pectins and specifically in the formation rhamnogalacturonan- B dimers (Hu and Brown, 1994, Kaneko et al., 1997 and Banik and Sen, 1997). Boron is also required for retention of fruitless, possibly by influencing sink strength of

the developing embryo through auxin-mediated event (Nyomora et al., 2000).

The various positive effects and benefits of applying active dry yeast as biofertilizer were attributed to its own different nutrients, greater amounts of vitamins B₁, B₂ and B₆ and the natural plant hormone, namely, cytokinin. In addition, application of active dry yeast was very effective in releasing carbon dioxide and stimulating photosynthesis (Subba Rao 1984). Moreover, yeast contains tryptophan, which is considered the precursor of IAA, so it has a promotive effect on fruit size (Moor, 1979). Besides, yeast also contains cytokinins, which delay the aging of leaves by the way of retardation the degradation of chlorophylls and enhancing the synthesis of protein RNA (Natio et al., 1981).

The aims of this investigation are to study the effect of foliar sprays of active dry yeast or micronutrients alone or in combinations on leaf nutrients content, yield and fruit quality (fruit physical and chemical properties) of Balady mandarin trees grown in sandy soil and were irrigated with drip irrigation system.