

**SALT TOLERANCE IN SOME OLIVE CULTIVARS AS AFFECTED BY SPRAYING
 WITH SOME GROWTH REGULATORS**

**I- EFFECT ON GROWTH, LEAF CHLOROPHYLL A & B AND SOME LEAF
 PHYSIOLOGICAL PROPERTIES.**

BY

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ABSTRACT

The effect of some growth regulators on growth, leaf chlorophyll a & b content and some physiological properties of three olive cultivars transplants, irrigated with saline solution at 6000 ppm with SAR6 and two chloride level (Cl:SO₄) ratio were irrigated. PP₁₃₃ at 500 ppm, BA at 20 ppm and CCC at 1000 ppm were used in this study to give more explanation about the protect against salt injury during 2002 & 2003 seasons. The results which could be deducted of this study are Coronailki cv. was the superior one with all the investigated growth measurements, dry weight of plant organs, leaf chlorophyll (A & B) content and L.O.P. & L.R.T. while Aghuzi cv. was the inferior as well as Manzanillo was in between. In addition, salt concentration at SAR 6 or high Cl:SO₄ ratio in saline solution significantly decreased all the investigated growth measurements, plants organs dry weights, leaf chlorophyll A & B contents as compared with control transplants (tap water).

Moreover, growth regulators (PP₁₃₃, BA and CCC) solely foliar spray treatment caused a significant increase of growth measurements (stem & total plant length, no. of leaves & no. of laterals/plant, leaf area & assimilation area/plant), plant organs dry weights and leaf physiological properties (L.S.G., L.R.T. and transpiration rate). On the contrary, leaf osmotic pressure (L.O.P.) and hard leaf character (H.L.C.) took the other way around during the study.

INTRODUCTION

Agricultural expansion needs a great amount of suitable irrigation water which already is not sufficient to meet all the expected demands. For that the possibility of using saline water for irrigation specially underground water is of great value; but till now it is still very limited, because this water contain a considerable amount of harmful salts. The applicability of saline water for irrigation is first of all dependent upon the concentration, composition of salts dissolved therein, and upon the degree to which plants are salt tolerance. Since, the olive cultivars plantation may be located principally in the new reclaimed lands (arid and simi-arid zones), this will arise some problems with salinity of soil or the source of irrigation. Salinity affects plant growth differentially.

The need for overcoming the adverse effects of salinity on plants had lead several investigators to test some growth substances. On American and European grape seedlings Sharf *et al.*, (1985) mentioned that both BA and CCC significant decrease stem length of the two grape varities and increased leaves, stem and total plant dry weight over plants irrigated with saline solutions. On tomato, Knavel, (1969) reported that CCC and BA treated plants were more drought resistant and tended to decrease the water loss or increase the efficiency of water movement through leaf tissues.

The present study was carried out to investigate the effect of one concentration (6000 ppm with SAR6 and 2 levels of Cl:SO₄ ratio) in the irrigated water on growth, leaf