

**SALT TOLERANCE IN SOME OLIVE CULTIVARS AS AFFECTED BY SPRAYING
 WITH SOME GROWTH REGULATORS
 II- EFFECT ON LEAF AND STEAM CHEMICAL CONSTITUENTS
 BY**

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ABSTRACT

The effect of some growth regulators on shoot (total sugars & total carbohydrates) and leaf free amino acids & proline content as well as leaf mineral contents of three olive cultivars transplants, irrigated with saline solution 6000 ppm, SAR6 with 2 levels of chloride (Cl:SO₄) ratio were studied. PP₃₃₃ at 500 ppm, BA at 20 ppm and CCC at 1000 ppm solely foliar spray were used in this study to give more explanation about the protect against salt injury during 2002 and 2003 seasons. Data obtained during both seasons revealed that both total carbohydrates and soluble sugars of olive shoots followed two conflicted trends regarding their response to olive cultivar or foliar sprayed growth regulators and chloride level. Herein, Coronaki olive transplants had statistically the richest shoot total carbohydrate content and the poorest shoot total soluble sugars, while the reverse was found with Aghizi transplants. Meanwhile, Manzanillo cv. was intermediate in this concern. However, both stem total carbohydrate and total sugars followed two conflicted trends in response to either salt concentration or chloride level (Cl:SO₄ ratio). Hence, rising salt concentration or Cl:SO₄ ratio resulted in increasing shoot total soluble sugars, while the reverse was true with total carbohydrate content. In addition, leaf total free amino acids, proline contents, leaf Ca & Na contents being progressively increased with salinity concentration or Cl:SO₄ ratio while leaf N, P, K, Mg, Fe, Mn & Zn contents took the other way around. Moreover, PP₃₃₃, BA & CCC foliar spray reflected two conflicted trends, where total carbohydrates was decreased but total sugars was increased.

Concerning leaf total amino acids and proline contents, Aghizi transplants had statistically the richest leaves, while the reverse was found with Coronaki cv. Meanwhile, PP₃₃₃ & BA as well as CCC foliar spray significantly decreased both amino acids and proline contents as compared with plants irrigated with saline solution. In addition, increased chloride level in irrigation water increased both leaf amino acids and proline contents during two seasons of study.

As for leaf mineral contents, data obtained revealed that Coronaki cv. had the richest leaves and exceeded statistically the two other cultivars regarding leaf N, P, K, Mg, Fe, Mn & Zn contents from one hand, but the poorest leaves regarding leaf Ca & Na content from the other. The reverse was true with Aghizi cultivar. Moreover, sprayed growth regulators (PP₃₃₃, BA & CCC) solely for salt stressed olive transplants statistically increased leaf N, P, K, Mg, Fe, Mn & Zn contents as compared with unsprayed salt stressed ones while the reverse was true with leaf Ca and Na contents. In addition, increasing chloride level in irrigation water significantly decreased leaf N, P, K, Mg, Fe, Mn & Zn contents but increased leaf Ca and Na of salt stressed olive transplants during the study.