

# **EFFECT OF FOLIAR APPLICATIONS ON WHITE BASIL AND GERANIUM PLANTS UNDER SALT STRESS IN EGYPT AND MOROCCO**

By

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### ABSTRACT

Salinity that induces stress on plants limits crop metabolic activities hampers plant growth and synthesis of secondary metabolites and affects the osmotic potential in the root zone of plants. This study was carried out in the Technical of Guiding Towards Agricultural and Agricultural Research Centre (ARC), Dokki, Giza; during two successive seasons 2016 and 2017. It is aimed to study the effect of saline water, foliar application and their interaction on growth and productivity of essential oil of white basil and geranium. These experiments tested two factors; four levels of saline irrigation water (0.5, 3.125, 4.69 and 6.25 ds/m) and three materials as foliar applications by three concentrations moringa extract (2.5, 5 and 10 g/L), ascorbic acid (0.1, 0.2 and 0.3 g/L) and proline (25, 50 and 100 mg/L). The experimental design was split plot with three replicates in both white basil and geranium. The results showed that there were a significant increase in plant height, fresh and dry weights, essential oil %, chlorophyll (a&b), carotenoids, and oil yield per plant, compared with control treatment in two seasons under 0.5ds/m and third concentration of moringa extract (10 g/L). While the root length in basil gave the highest length with the third concentration of ascorbic acid (03 g/ l) with salinity 6.25ds/m in white sbasil and the length of root at salinity concentration (6.25 d/m) with the third concentration of moringa extract (10 g/L) in geranium in the same trend. On the other hand,the results showed that there was a significant increasing in essential oil percentage, oil yield per plant.In addition, the components of essential oil were affected by salinity irrigation water and foliar application treatments.The main compounds in basil oil is (1.8 cineol, linalool, camphor and methyl chavicol) and vehicles in the main essential oil of geranium (geraniol, eugenol, alpha pinene and linalool).

**KEY WORDS:** Basil, Geranium, Salinity irrigation water, Moringa extracts, Ascorbic acid concentration and Proline concentration

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