

**INFLUENCE OF ORGANIC MANURE COMPOST ON SOIL
PROPERTIES AND PERFORMANCE OF ROSELLE
(*Hibiscus sabdariffa*, L.)
IRRIGATED WITH DIFFERENT LEVELS OF SALINE WATER**

H.M. El-Kouny, R.I. Fayed and A.M. Daoud

Soil Salinity Res. Lab., Alex.; Soil, water and Enviro. Res. Institute; Agric.
Res. Center, Egypt.

(Received: Mar. 9, 2010)

ABSTRACT: *A greenhouse pot experiments were conducted in 2008 and 2009 seasons to investigate the combination effects of saline irrigation water and organic compost on the performance, yield and quality of Roselle plants in addition to the nutritional status and some chemical properties of the experimental soil. Roselle seeds, c.v Sabahia 17 were sown on clay soil packed in plastic pots. Tap water (control), and diluted sea water of 2000, 4000 and 8000 mg/L salinity were used as source of irrigation till harvesting with an extra 30% over the soil field capacity to avoid salt accumulation. The soil pots were primarily mixed with organic compost at rates 0 (control), 8, 12 and 16 m³/fed. The results revealed that increasing rates of compost at any given level of irrigation water salinity imposed considerable reduction in soil pH, EC and SAR. In contrary, soil available N, P, and K as well as sepals weight were progressively increased with increasing application rates of compost across salinity treatments. The highest increase in these traits were performed with the saline water level of 2000 mg/L along all compost treatments. Number of branches though showed insignificant increase with the interactive effect of compost and salinity, has shown to maximize upon adding compost rate of 16 m³/fed along with 4000 mg/L salinity. The seed yield, however, showed inconsistent trend, but was increased by 60% over control in soil received 16 m³/fed of compost at the 2000 mg/L salinity. The Anthocyanine pigment (being reflect the quality of Roselle) was gradually increased with increasing compost rates and optimized with saline water treatment of 2000 mg/L along with 12 m³/fed of compost, and decreased as the salinity raised to 8000 mg/L.*

Key words: *Salinity, organic compost, Roselle plant, available nutrients, Anthocyanine pigment.*