

## Response of *Calendula Officinalis* L. which grown in saline soil to Plant Growth Promoters and Some Organic Substances

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**Abstract:** Two factorial experiments in split plot design were carried out during the two successive growing seasons of 2011/2012 and 2012/2013 at the farm of Soils, Water and Environ. Res. Inst., Agric., Res. Center in Sahl El-Hossynia, EL-Sharkia Governorate; Egypt to investigate effects of some salinity tolerant, [*Azotobacter chroococcum*, *Azopirillum lipoferum*, *Bacillus polymyxa*, *Bacillus subtilis*, *Klebsiella pneumoniae*, *Pseudomonas fluorescens* and the white rot fungus (*Pleurotus columbines*)] as well as plant growth promoters (PGP) alone or with different organic treatments as Cattle manure (CM) at 20m<sup>3</sup>/fed., ascorbic acid (ASC) at 100 ppm, Humic acid (HA) at 100 ppm as foliar spray and their interactions under saline sodic soil conditions on Marigold (*Calendula officinalis* L.) vegetative growth, flowering growth, chemical analysis and chemical properties of soil.

Gradual and significant increases in plant height (cm), number of branches, leaves and inflorescences /plant, leaf area of medium leaf of main stem and fresh and dry weights of shoots, roots and inflorescences per plant (g), diameter of inflorescences (cm) and chemical analysis as, chlorophyll (A&B), total carotenoids in leaves and ray flowers, total carbohydrates and N,P,K percentage in leaves were recorded increasing with the tested treatments especially CM+ ASC+HA with (PGP) followed by that the treatment CM+HA with (PGP) and CM+ASC with (PGP) respectively. While these treatments decrease the proline content in fresh leaves, Ph and EC of the soil, Nitrogenase and dehydrogenase in soil were enhanced by all tested treatments specially in case of organic matter treatments with PGP which reflected on the quality and quantity of marigold plants.

**Keywords:** Marigold, *Calendula officinalis*, PGP, ascorbic acid, Himic acid, saline soil.

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