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رقم البحث: الرابع

عنوان البحث باللغة الإنجليزية:

Improvement of Selected Morphological, Physiological, and Biochemical Parameters of Roselle (*Hibiscus sabdariffa* L.) Grown under Different Salinity Levels Using Potassium Silicate and Aloe Saponaria Extract.

الباحثون المشاركون:

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ملخص البحث باللغه الانجليزية:

Two successive field trials were carried out at the experimental farm of the Agriculture Department of Fayoum University, Fayoum, Egypt, to investigate the sole or dual interaction effect of applying a foliar spray of Aloe saponaria extract (Ae) or potassium silicate (KSi) on reducing the stressful salinity impacts on the development, yield, and features of roselle (Hibiscus sabdariffa L.) plants. Both Ae or KSi were used at three rates: 0% (0 cm3 L?1), 0.5% (5 cm3 L?1), and 1% (10 cm3 L?1) and 0, 30, and 60 g L?1,respectively. Three rates of salinity, measured by the electrical conductivity of a saturated soil extract (ECe), were also used: normal soil (ECe < 4 dS/m) (S1); moderately-saline soil (ECe: 4–8 dS/m) (S2); and highly-saline soil (ECe: 8–16 dS/m) (S3). The lowest level of salinity yielded the highest levels of all traits except for pH, chloride, and sodium. Ae at 0.5% increased the values of total soluble sugars, total free amino acids, potassium, anthocyanin, a single-photon avalanche diode, stem diameter, fruit number, and fresh weight, whereas 1% of Ae resulted in the highest plant height, chlorophyll fluorescence (Fv/Fm), performance index, relative water content, membrane stability index, proline, total soluble sugars, and acidity. KSi either at 30 or 60 g L?1 greatly increased these abovementioned attributes. Fruit number and fruit fresh weight per plant also increased significantly with the combination of Ae at 1% and KSi at 30 g L?1 under normal soil conditions.