

Effect Of Sea Water Salinity And Salicylic Acid Treatment On The Growth Of Tissue-Grown Short-Stem Banana Plant Under Greenhouse Conditions

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Abstract:

The current study was conducted at the Agricultural Research and Experiment Station / College of Agriculture / University of Basra for the period from 2/1/2018 to 30/6/2018, the tissue-propagated Indian short-stem banana plants M.Caredishii were used in the tissue culture laboratory of the Palm Research Center Adapted at six months old, and it was grown in a greenhouse equipped with a desert cooling system, the banana plants were irrigated with five concentrations of sea water (0, 5, 10, 15, 20) and two concentrations of SA acid are (0, 5) mg L⁻¹, sea water was brought From the deep port at the head of the Arabian Gulf, the results obtained are summarized as the concentration of 5% sea water showed a significant increase in the studied traits (average plant height of 12.33 cm and in leaf area it was 150.50 cm 2 and the lowest amount of proline accumulated 4.18 μ g g⁻¹ dry weight and gave the highest value of total chlorophyll where it reached 1.88 mg g^{-1} fresh weight He accumulated the highest amount of k, which amounted to 3.17 mg g⁻¹ dry weight, and the ratio of K:Na in it was 1.74, compared to the other studied concentrations of 10%, 15% and 20%. The results showed that SA acid had an effect on improving the studied traits of banana plant, and the concentration of 5 mg L⁻¹ significantly exceeded the concentration 0 mg L⁻¹ of it in (the average plant height, which reached 11.40 cm and in the foliar reinforcement, which amounted to 142.40 cm 2 and led to a decrease in the amount of proline In leaves to 4.48 µg g⁻¹ dry weight and total soluble carbohydrates to 19.69 mg g⁻¹ fresh weight, which led to an increase in the concentrations of total chlorophyll and K ion in leaves to 151 mg g⁻¹ fresh weight and 3.01 mg g^{-1} dry weight, respectively, and led to a reduction in Ionic Na and CI to 2.02 and 1.78 mg g^{-1} dry weight, respectively. The results of the study showed that the interaction of SA with salt concentrations of sea water improved the studied characteristics, and the interaction of the concentration of 5 mg L⁻¹ SA with the salt concentration of 5% of sea water improved significantly in improving the studied characteristics.