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Effect of Salt Water Irrigation and Amino Acid (Proline and Arginine) on Some Chemical Components of Potato (Solanum tuberosum L.) Leaves

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Abstract:

This study was conducted in the province of Diyala during autumn season of 2014-2015. The aim of the experiment was to study the effect of different levels of water salinity (2, 3.6 and 5.1 D.S .m-1) and two amino acid (Proline and Arginine) in two levels (0 and 200 Mm.l-1) in two ways to add a splash on the shoot or with irrigation water in the concentration of some chemical components of potato Riviera c.v Elite. Split Plot Design was used with three replicates. Results can be summarized as follow, increase proline and arginine amount and concentration of sodium and chloride when increasing the level of irrigation water salinity from 2 to 5.1 D.S.m-1 in the leaves value as 3.34mM.g-1 , 4.67mM.g-1 , 5.02% and 3.43% respectively. The effect of sprayed arginine significantly increase the amount of arginine in the leaves compared to the treatment of non-spray, as 2.95 mM.g-1 and the resulting spray proline to increase proline, nitrogen and phosphorus in the leaves 4.67mM. g -1 , 1.80% and 0.74% respectively, but the sodium and chloride concentration excel treatment comparison were 4.82% and 3.41%. The interference effect has beat the treatment of interference between the level of water salinity 5.1 D.S.L-¹ and sprayed arginine and proline in increasing the proportion of arginine to 3.74 m.M.g-1 and a proline 4.88 mM.g-1 , while beat the treatment of irrigation water with a salinity level 2 D.S.L-¹ proline and sprayed caused increase the nitrogen, phosphorus and potassium ratio while caused reduced ratio of sodium and chloride in the leaves. Keywords: Solanum tuberosum L., salt stress, elements, amino acids.