

EFFECT OF ELECTRICAL CONDUCTIVITY IN THE FERTIGATION SOLUTION ON GROWTH PARAMETERS OF EXOTIC VEGETABLES IN PROTECTED CROPPING

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Protected agriculture including greenhouses and polytunnels optimizes the crop production of exotic vegetables. Fertigation, the application of fertilizers through irrigation systems is a common practice in protected farming. A critical parameter for fertigation solutions is the electrical conductivity (EC), which measures the dissolved salt concentration and indicates the overall nutrient content. This study aimed to evaluate the impact of different EC levels in fertigation solutions on growth parameters of capsicum, bell pepper, cucumber and tomato using different nutrient concentrations of KodiMix fertilizer. The tested EC values were 1 mS cm⁻¹, 1.5 mS cm⁻¹, 2 mS cm⁻¹, 2.5 mS cm⁻¹ and 3 mS cm⁻¹. Results indicated that plant height, number of fruits per plant and final yield of all four crops were not significantly different ($p>0.05$) across the tested EC values. However, Capsicum showed a significantly higher number of flower droppings at 1 mS cm⁻¹, while cucumber showed significantly higher flower dropping ($p>0.05$) at 3 mS cm⁻¹. SPAD values of capsicum and bell pepper were significantly higher ($p<0.05$) at 3 mS cm⁻¹, but the SPAD values for cucumber and tomato were not significantly affected by the EC levels. Significantly higher ($p<0.05$) brix values were observed in cucumber at 3 mS cm⁻¹ and in tomato at 1.5 mS cm⁻¹. Hence, it can be concluded that the tested EC levels of fertigation solutions did not adversely affect the growth and yield parameters of capsicum, bell pepper, cucumber and tomato.

Keywords: Electrical conductivity, Fertigation, Greenhouse vegetables, Plant nutrients, SPAD value