

EFFECT OF ELECTRICAL CONDUCTIVITY OF THE NUTRIENT SOLUTION ON THE GROWTH AND YIELD OF THREE NATIVE TOMATO GENOTYPES (*LYCOPERSICON ESCULENTUM* VAR. *CERASIFORME*)

Authors: P. Juárez-López, E. Cruz-Crespo, R. Bugarín-Montoya, J.D. García-Paredes, L. Martínez-Cárdenas, D. Reed, M. Kent, P. Ramírez-Vallejo

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Abstract:

Mexico is considered the domestication center of the tomato (*Lycopersicon esculentum* Mill.). However, in Mexico, research studies regarding the mineral nutrition of native tomato genotypes are scarce. Some tomato genotypes may have the potential to compete with commercial hybrids in terms of yield and quality, and can be cultivated in the greenhouse using drip irrigation system with a low input of fertilizer. The objective of this study was to assess the effect of Steiner nutrient solution at three levels of electrical conductivity (1.0, 1.5 and 2.0 dS m⁻¹) on growth and yield of three native tomato genotypes (JCPRV-05, JCPRV-09 and JCPRV-10) from Guerrero, Mexico, and to compare them to a commercial hybrid cherry tomato (Super Sweet 100®). Leaf area, biomass dry weight, fruit number and yield, and leaf macronutrient concentration were evaluated. In leaf area and dry matter, a direct relationship was found as a result of the applied nutrient solution electrical conductivities, and JCPRV-05 had the highest leaf area (12,563 cm²) and the greater total shoot dry matter (195.6 g), outperforming the control. The applied nutrient solution electrical conductivities did not affect the number of fruits or the yield in six racemes, while the control had the greatest number of fruits per plant (79.2) and the greatest yield (24.06 t ha⁻¹). Foliar concentrations of N, P, K, Ca, and Mg, were not affected by the levels of electrical conductivity of the nutrient solution applied, and nutritional deficiencies were not observed during the cultivation cycle.

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