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Yield of elite tomato lines in a hydroponic system in Manaus, Amazonas

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Abstract: New tomato lines adapted to Amazonian conditions have been developed by the National Institute for Amazonian Research, but have not yet been evaluated for hydroponic cultivation. The aim of this study was to evaluate the production of these lines in a hydroponic system in the municipality of Manaus-AM. The experiment was carried out at Hidroponia Green Health (02°58'26.35“ S and 60°04'39.94” W), in a greenhouse, using the NFT (Nutrient Film Technique) system during the rainy season (January to April). A PLANTPAR nutrient solution were used for the vegetative phase and another for the productive phase, adjusting the pH (5.5-6.5) and electrical conductivity (1.3-1.5 dS m-1) daily and replacing the nutrient solution every 15 days. A completely randomized block design was adopted, with 10 treatments [8 lines + 2 controls (Yoshimatsu and Santa Cruz Kada), 3 replications and 5 plants per plot, with a spacing of 0.60 × 0.50 m between lines and plants respectively, and conducted with a single stem. Cultivation and pest and disease were control with the application of acaricide, insecticide and fungicide. The results showed that the lines varied from 3 to 30 t/ha, Yoshimatsu 17 t/ha and Santa Cruz Kada 10 t/ha. The lines P28-4-4-8 (30 t/ha) and P28-8-40-7 (27 t/ha) produced significantly more than the controls according to Duncan's test ($P<0.05$). This indicates that these strains could be launched as cultivars for hydroponic cultivation.

Keywords: Tomato breeding, Nutrient Film Technique, Amazon.

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