

Title The influence of elevated EC-levels in the nutrient solution on post harvest quality of tomatoes
Authors S. Krauss, J. Graßmann, M. Voitke, W.H. Schnitzler
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Abstract

The quality of flavouring and health-promoting compounds in hydroponically produced tomatoes improves with increasing electrical conductivity in the nutrient solution. But it is not yet well understood to what extent these growing conditions influence the storability of the fruit. In this experimental set up, twelve days stored tomato fruit grown under four different EC-levels (EC 3, 6.5, 10 and 13.5) were evaluated. The progression of quality existing at time of harvest and tomato fruit attributes after storage was investigated. The examined parameters sugar (°brix) and organic acids but also health promoting compounds like lycopene, β -carotene, phenols, Vitamins C and E were significantly enhanced at time of harvest when the plants were grown under higher EC-levels compared to the control (EC 3). The antioxidative capacity of both, the phenol rich and carotenoids rich extracts was likewise higher. After storage, sugar content and Vitamin E were enhanced under the EC10 and EC13.5 treatments compared to the values at the time of harvest. The phenol content decreased up to 9 % in the higher EC variables compared to the control. The β -carotene was already reduced at EC 6.5. The concentration of lycopene remained constant in the fruit grown under salt stress. The decrease of organic acids was not higher in the salt stressed fruit as in the control. Fruit firmness after storage was higher for all elevated EC treatments up to EC 10. No constant trend was found for the progression of Vitamin C. The storage had no significant influence on the antioxidative capacity of phenol rich and carotenoids rich extracts.