

Title Pre-storage UV-C illumination reduces decays and maintains quality of tomatoes harvested at red maturity stage

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Abstract

In this study, the effects of UV-C (ultraviolet-C) irradiation treatments on fruit quality and the storage of tomatoes harvested at red maturity stage. Astona F1 tomato cultivar grown in Antalya region, was investigated. According to maturity stages of tomatoes were divided into 3 groups. The first group of fruits exposed to UV-C irradiation (1.3 kJ.m^{-2}), the second group of fruits were treated with UV-C irradiation (2.4 kJ.m^{-2}) and the last group of fruits were used as control. After these treatments, fruits stored at 10°C temperature with 90-95% relative humidity. During the storage period, various chemical and physical analyses were performed by taking samples at 15 days intervals. Weight loss, titratable acidity, soluble solids contents, fruit firmness were performed. Furthermore, fungal and physiological disorders during the storage period were recorded. In conclusion, the research indicates that the Astona F1 tomato cultivar grown in Antalya region can be stored successfully for 30 days at 10°C and 90-95% RH if they are exposed to different UV-C irradiation before storage.