

The Effect Of Ethylene In Maintaining Quality Of Tomato Slices

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Abstract

Processes such as slicing tomato fruits disrupt the plant tissue so the products become more perishable compared with the intact fruit. Ethylene production is stimulated during the slicing of fresh cut tomato slices. Experiments were conducted to investigate if ethylene absorbent and exogenous ethylene influences the quality of tomato slices cv. 'Revolution' during storage at 5°C. In the experiment of ethylene absorbent, experiment was laid out in a completely randomised design. The treatments were plus 10 g and minus ethylene absorbent (KMnO₄; Purafil?; 5°C for 12 d). In the experiment of ethylene concentrations, experiment was laid out in a completely randomised design. The treatments were exogenous ethylene concentrations of 0 (control), 0.1, 1 or 10 µL L⁻¹ respectively (5°C for 6 h). In both experiments, the treatments were replicated 5 fold. Results showed that ethylene absorbent resulted in reduced ethylene accumulation, and CO₂ accumulation in enclosed containers, and firmer slices. Ethylene applied 2 days after slicing stimulated the rate of ethylene production, CO₂ production, and produced softer slices during storage. Changes in soluble solids concentration and titratable acidity development were independent of ethylene effects. These experiments showed that ethylene produced by slicing or introduced exogenously had an undesirable effect of accelerating softening of tomato slices.

Key words: *sliced tomato, ethylene*