

Title Effects of alternative current heating treatment on *Aspergillus niger*, pectin methylesterase and pectin content in tomato

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Abstract

The main purpose of using alternative current (AC) heating treatment is to inactivate enzymes and microorganisms. The inactivation of pectin methylesterase (PME) and *Aspergillus niger*, and the changes in total pectin content by AC heating with different electric field strengths in the range of 36–108 V/cm for different treatment times in tomato fruit were investigated.

PME activity decreased with an increase in treatment time at 108 V/cm. However PME activity increased by AC treatment at 48 V/cm for 5 s and at 36 V/cm for 5, 10, 15, and 30 s. compared to untreated control. The highest amount of total pectin was determined as 3.56% at 89 °C by AC treatment at 36 V/cm for 80 s. The *A. niger* inactivation was increased with increase in electric field strength and increased temperature. The concentration of *A. niger* (cfu/g) was determined to be <10 at 108, 68, 48, and 36 V/cm electric field strengths for the treatment times of 6, 12, 20 and 30 s, respectively.