

**Title** Effect of gaseous ozone and hot water on microbial and sensory quality of cantaloupe and potential transference of *Escherichia coli* O157:H7 during cutting

**Author** María V. Selma, Ana M. Ibáñez, Ana Allende, Marita Cantwell and Trevor Suslow

**Citation** Food Microbiology, Volume 25, Issue 1, February 2008, Pages 162-168

**Keywords** Sanitizing; Food-borne pathogens; Melon; Ozone; *Escherichia coli* O157:H7

#### **Abstract**

The effect of gaseous ozone and hot water, alone or in combination, on the sensory and microbial quality of cantaloupe melon was investigated. *Escherichia coli* O157:H7 transmission from the rind to edible melon flesh during cutting practices was also investigated. Four different treatments consisting of hot water (75 °C, 1 min), gaseous ozone (10,000 ppm, 30 min), gaseous ozone supplied by carbon monoxide gas and the combination of hot water and gaseous ozone were evaluated. Sensory quality and growth evolution of aerobic mesophilic and psychrotrophic bacteria, coliforms and molds were studied. In general, hot water, gaseous ozone, and the combination of hot water and gaseous ozone were effective in reducing total microbial population. The combination of hot water and gaseous ozone was the most effective treatment to control microbial growth achieving 3.8, 5.1, 2.2 and 2.3 log reductions for mesophilic and psychrotrophic bacteria, molds and coliforms, respectively. However no significant differences were observed between gaseous ozone and gaseous ozone supplied by with carbon monoxide gas. There was no evidence of damage in melons treated with hot water, ozone or their combination and they maintained initial texture and aroma. Therefore, the combination of hot water and gaseous ozone may be an efficient and promising treatment for controlling microbial growth and maintaining sensory quality of melons.