

Ozone effect on some fruits and vegetables microbial contamination

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The use of ozone as a disinfectant agent has a potential application in the food industry, due to its powerful oxidizing capacity. In 1997, ozone was decreed a Generally Recognised as Safe (GRAS) substance for use as a food and food processing disinfectant or sanitizer, as long as good manufacturing practices were provided.

Fruits and vegetables are perishable foods and can be important sources of foodborne diseases, since they are consumed uncooked or unprocessed. Preservation of their quality and safety usually involves technologies that prevent microbial growth.

The objective of this work was to study the effect of ozone in aqueous solution on the safety of red bell peppers, strawberries and watercress, evaluated, respectively, by *Listeria innocua*, total mesophiles and total coliforms enumeration.

A pilot plant ozone generator was used in experimental assays. Products were cut in small pieces and were emerged in ozonated water for 1, 2 and 3 minutes. Two different ozone concentrations were considered (0.25 and 2.00 ppm). Water washings for the same periods of time were carried out as control of the ozone treatments.

Results showed that microbial reductions were similar to the ones obtained by water-washings. The ozone concentration effect was not significant as well as the time of treatment considered for the microorganisms/products studied.

An exception was observed for mesophiles/strawberries for a 3 minutes ozone process. In this case, the ozone effect was evident.