

Application of gaseous ozone to inactivate *Bacillus Cereus* in processed rice.

ABSTRACT

The effect of ozonation as a method to reduce *Bacillus cereus* count in processed rice was investigated. Hundred grams of processed rice was exposed to gaseous ozone in an inert glass condenser at $20 \pm 3^{\circ}\text{C}$ and 50% relative humidity. Ozone concentrations of 0.1, 0.2, 0.3 and 0.4 ppm up to 7 h were used. Enumerations of *B. cereus* were done before ozonation treatment to establish the initial counts of *B. cereus* in processed rice. The experiments were done in an air-conditioned room and samples were then kept at ambient temperature pre- and post-ozonation to emulate normal conditions in rice storage facilities. Within 24 h, the ozonated samples were then enumerated by surface spread plating technique. Significant trends were observed in comparison with the non-ozonated rice samples. Non-ozonated rice samples were found with an average of 5.50 ± 0.28 log count (cfu/g). Up to 1.63 log reductions of *B. cereus* counts were observed above 0.3 ppm ozone concentration at the end of 420 min of treatment. *B. cereus* counts were shown to decrease to 3.62 ± 0.38 log count (cfu/g) at 0.4 ppm ozone concentration for 420 min of ozone treatment.

Keyword: *Bacillus Cereus*.