

THE EFFECT OF OZONE ON MICROBIAL LOAD OF BLACK PEPPER CORN

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Non thermal processing technologies, including ozone, have implications in food industry for the inactivation of bacteria while maintaining the sensory qualities of food products. Gamma radiation is now internationally recognized as the decontamination method for spices in more than 21 states, however at the same time some countries prohibit the application of irradiation in food preservation. In this study, the efficacy of ozone, instead of gamma radiation was studied on microbial load of black pepper corn which has the microbial flora of spore forming bacteria. 0.2; 0.3; 0.4; 5.5; 6.5; 8.0; 9.0; 10.0; 12.0 and 15.0 mg/L ozonized air were applied to black pepper corns for 5, 10, 15, 30 and 60 minutes. These applications were performed on black pepper corns under 3 different conditions, such as dry, water immersed, peptone water immersed. Total Aerobic Mesophilic Bacteria (TAMB) and Total Aerobic Mesophilic Spore (TAMS) were counted and compared with the control. It was observed that none of the ozonized samples showed difference from the control. It can be concluded that these proportions of ozonized air are not enough to disinfect neither TAMB nor spore forming bacteria, so it cannot be used instead of gamma radiation on black pepper corn decontamination.

Keywords: Ozone, microbial load, pepper corn

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