

## **EFFECTS OF OZONE APPLICATION ON MICROBIAL LOAD OF BLACK PEPPER**

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Spices are the more consumed food additives in the World. However, if the microbial load or mycotoxin content of spices is above the legal limit, consumption of it becomes inconvenient. There are many studies to reduce the microbial load of spices. Different drying techniques, radiation and ozone applications are the examples of used methods. The purpose of this research is to apply ozone both in gaseous and aqueous form for microbial decontamination of black pepper corns. For this aim, black pepper corns were exposed to 15 and 20 ppm gaseous ozone up to 60 min, while it was applied 10 and 15 ppm ozonized water up to 10min. Total aerobic mesophilic bacteria, *Enterobacteriaceae*, Mold and yeast and aerobic spore forming bacteria counts were examined in both control and treated samples. It was found that gaseous ozone application reduced the total aerobic mesophilic bacteria counts of black peppers by 0.80-2.0 log where as it reduced yeast and mold counts by 0.36- 0.90 log. In ozonized water applications black peppers were immersed ozonized water and sparged with ozonized air up to 10min. These treatments reduced the total aerobic mesophilic bacteria counts by 0.80-1.14 log whereas only 0.20 log decrease was observed in yeast and mold counts at the concentration of 15 ppm at 10min. No significant reductions were observed in aerobic spore forming bacteria counts in all applications.

Keywords: Black pepper, ozone, microbial load

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