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THE INFLUENCE OF OZONE FUMIGATION AND OZONATED WATER DIPPING ON MICROBIOLOGIC FLORA AND DEGRADATION OF AFLATOXIN B_1 IN DRIED FIGS

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In this study dried figs were treated by ozone fumigation and the ozonated water dipping method. The count of total aerobic mesophyllic microorganisms, *E. coli*, Coliform, yeast and molds on dried figs were determined before and after 7.5; 15 and 30 minutes of ozone treatments. The effects of gaseous ozone and ozonated water for 30, 60 and 180 minutes on aflatoxin B_1 content in dried figs were also investigated. Results showed that ozonated water dipping method was more efficient than ozone fumigation in decreasing the count of total aerobic mesophyllic microorganism on the samples. Reduction in counts of total aerobic mesophyllic microorganisms were 51.5 % by ozone fumigation and 87.7 % by the ozonated water dipping method. *E. coli* was completely inactivated in 7.5 minutes of ozonation with both of the two methods. Coliform bacteria were also completely inactivated by 7.5 minutes of water dipping. However, these bacteria were reduced only to 72.4 % by 30 minutes of ozone fumigation. All of the yeasts were destroyed by 15 minutes of ozonated water dipping. By 30 minutes of ozone fumigation only 87.5 % of yeasts were eliminated. All of the molds were destroyed by 15 minutes treatment of the two methods. In both two treatments, degradation of aflatoxin B_1 was increased due to increasing of ozonation time. Results indicated that gaseous ozone was more effective than ozonated water for reduction of aflatoxin B_1. A reduction of 95.2 % was observed at 180 min. in contaminated dried figs which were exposed to gaseous ozone.

Key words: Dried figs, ozone, microbial flora, Aflatoxin B_1