

Abstract

Daily eating fruit and vegetables can help improve healthy, physical activity and youthfulness. wastewater-irrigated vegetables, they may be contaminated by different microorganisms and infectious agents and cause several infectious and digestive disorders. Also the fumigation and sterilization of them must be done according to safe recipes. A preliminary study conducted in order to evaluate the effects of Acetic Acid Glacial, Lactic Acid and Citric Acid (of 2% density) solutions with and along with Sodium Chloride (at two levels of 0 and 7%) as well as Hydrogen Peroxide (at three levels of 0, 1 and 2) at a temperature of 40 °C and an immersion time of 30 seconds. At first, the leaves of basil were inoculated with 10^6 cfu/g *Escherichia coli* (IBRC-M-10708) bacteria and kept for 24 hours at 4°C. Then the contaminated basil leaves were disinfected and kept at 5 °C. Sampling was done at 24, 48 and 72 hours in order to *Escherichia coli* bacteria (IBRC-M-10708) counting, Ascorbic Acid, the total flavonoid compounds and antioxidant as well as sensory activities assay along increasing the maintenance time. The results were analyzed according to the factorial and complete randomized design and the comparison of the data average using Dunken and Tukey tests at a possibility level of 5% and finally compared with the control sample in order to determine the most suitable washing treatment to maintain the quality and increase the shelf life. The results showed that the samples with Lactic Acid had the most effect on deactivation of *Escherichia coli* (IBRC-M-10708) and saving phenolic compounds and Vitamin C amounts. In addition, the samples with Citric Acid showed better results in maintaining the Antioxidant activity of basil than the other acids. In all the samples increasing the shelf life decreased the antioxidant activities, phenolic compounds and Vitamin C but this decrease was far smaller than that of the control sample (washed with water). It should be said that in the sensory test of basil, the samples with Citric Acid gained a higher score than the other samples of the panelist.

Keywords: *Escherichia coli*, basil, organic acids, washing



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**Effects of Antibacterial household washing
treatments for the control of *Escherichia
coli* (IBRC-M-10708) on Basil**

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