

Title Study of high concentration ozonated water for fresh-cut cauliflower preservation
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Abstract

Introduction: In this study, the effects of high concentration ozonated water on the surface microorganism count, protein and Vitamin C changes, rate of weight loss, respiration intensity, and surface quality of the fresh-cut cauliflower were investigated. The effects of high concentration ozonated water under refrigeration with two processing methods, which include the different concentration and soaking time, on the surface microorganism count are investigated to determine the relation between ozonated water concentration and surface microorganism count, and on protein and Vitamin C changes, rate of weight loss, respiration intensity, and surface quality of the fresh-cut cauliflower. **Materials and Methods:** Ozone Generator and prepare high concentration of the ozonated water (with up to 8.12 ppm, 9.16 ppm, 9.72 ppm of dissolved ozone). Choose cauliflower, which is non-pollution, the same maturity and sizes, as experimental material. These cauliflower cut into parts of 20-30 g. High concentration ozonated water treatment with the different concentration and soaking time. All the fresh-cut cauliflower are throwed off the surface water and packaged with Polyethylene plastic wrap. Finally, preservation under temperature ($4\pm 1^{\circ}\text{C}$) for twenty days and investigate the quality every four days. **Results and Discussion:** The results indicated that high concentration of the ozonated water (with up to 8.12 ppm, 9.16 ppm, 9.72 ppm of dissolved ozone) has the prominent effect of eliminating surface microorganism of the fresh-cut cauliflower. The higher the concentration of ozonated water, the more effective in the surface microorganism elimination. The presence of ozone seems also delayed the metabolism of the fresh-cut cauliflower, therefore, reduced the protein, Vitamin C losses/changes, respiration intensity, and weight loss rate. The visual evaluation and the sensory quality of ozonated water treated group were also superior as compared to the control-group. However, when the concentration of ozonated water was too high (over 9.72 ppm of dissolved ozone), the nutrients loss would double also, therefore, the prolongation of soaking time at intermediate level of dissolved ozone concentration (9.16 ppm of dissolved ozone) is a better method.