
ABSTRACT

Among different fish slices used for sashimi preparation, tuna is the most popular and preferable fish type for Taiwanese people. To improve the hygienic quality of fish slices, electrolyzed (EO) water containing 10, 50, and 100 mg/L chlorine, was used in combination with CO gas treatment. Effect of different treatment on aerobic plate count (APC), volatile basic nitrogen (VBN), K value, and Hunter L*, a*, b* values of yellow-fin tuna steak during storage (4 °C and −20 °C) were evaluated. It was found that APC, VBN, and K values increased with storage time for all treatment. Except for K value, APC and VBN of tuna steak treated with the combination of more than 50 mg/L chlorine EO water and CO gas had the lowest value after 8 d of refrigerated storage. Hunter a* value of tuna steak treated with only CO gas was the highest, followed by those treated with EO water and CO gas. These results demonstrated that EO water containing 50 mg/L chlorine combined with CO gas treatment in tuna fish steak would be an effective method for enhancing the hygienic quality and freshness for tuna meat and extending refrigerated storage time. Tuna treated with EO water containing 100 mg/L chlorine and CO gas combination had the lowest APC immediately after treatment and reduced further to below detection limit after 1 mo frozen storage at −20 °C.