

### **Abstract**

Cabbage shreds dipped in acidic electrolyzed water (AEW) mixed with or without sucrose fatty acid esters (SE; Mitsubishi-Kagaku Foods Corp.) and stored in MA package at 10°C to determine the microbicidal effect of treatment with the combination of AEW and SE on stored cabbage shreds. Strong AEW (pH 3, 20 ppm available chlorine; Hoshizaki Electric Corp.) and weak AEW (pH 6, 17 ppm available chlorine; Morinaga Milk Industry Corp.) were generated by electrolysis of NaCl solution and HCl, respectively, using electrolyzed water generators.

Available chlorine concentrations were reduced by 25 % in strong AEW and 40 % in weak AEW due to mixture with SE for 10 min. When cabbage shreds with and without SE were dipped in AEW, the addition of SE did not affect the reduction of available chlorine in either strong nor weak AEW. Initial counts of total bacteria were 0.2 to 0.4 logs lower in the cabbage shreds treated with strong and weak AEW with SE than with tap water (control). However, the residual effects on reducing mesophilic aerobic bacteria and coliform group were not observed with stored cabbage shreds for 5 days of storage at 10°C. The ultrasonic treatment combined with dipping in the weak AEW with SE reduced total bacterial count on shreds by about 2 logs during the first 3 days of storage and coliform bacterial count on shreds by 2 to 3 logs throughout the storage period, relative to control samples. The ultrasonic treatment with weak AEW with or without SE did not affect the respiration rate nor ethylene production of cabbage shreds stored in MA package at 10°C.