

**Title** Post-harvest application of electrolyzed water  
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### **Abstract**

Electrolyzed water is produced by electrolyzing tap water with the addition of a small quantity of NaCl. Acidity electrolyzed water (AcEW) created at the anode has been observed to have sterilization effects on microorganisms, and alkaline electrolyzed water (AIEW) created at the cathode has been observed to have a rinsing effect on organic compounds. In this paper, we try to develop the application method using AcEW and AIEW for post-harvest processing. We try to control microorganisms, and also examine food quality change during the treatment. We carried out several tests to clarify the sterilization effects on the fresh vegetable surface, and to check the quality of rice during the pre-treatment and to confirm the sterilization effect on rice processing. The combination of electrolyzed water (AIEW and AcEW) has high reduction of the microorganisms of the fresh vegetable surface compared with the results of AcEW treatment. Both of AcEW and AIEW changed the color and pH of rice rapidly. But, when it was treated with the combination of AIEW and AcEW, no difference of rice color and pH occurred and the strong effect on the microorganism control was found. We set the method of combination of electrolyzed water as following. To remove rice bran powders and other foreign materials, we washed rice with AIEW for 5 min and soaked with AcEW to sterilize microorganism for 30 min. And then, to remove the odor of chlorine and to revert the pH level we re-soaked with distilled water for 30 min. In this experiment we can confirm the effect of the combination electrolyzed water on microorganism. These suggest that the combination of the electrolyzed water can be used to control of the microorganism in the food process.