

**Title** Neutral and acidic electrolyzed water as emergent sanitizers for fresh-cut mizuna baby leaves  
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### Abstract

The effects of 40, 70 or 100 mg L<sup>-1</sup> free chlorine neutral and acidic electrolyzed water (NEW and AEW) during the washing and disinfection step, on quality attribute changes during shelf life of fresh-cut mizuna baby leaves, were studied. Physiological, nutritional, enzymatic, sensory, and microbial changes throughout 11 days at 5 °C were monitored. Results were compared to those reached with a conventional industrial treatment of 100 mg L<sup>-1</sup> NaClO at pH 6.5 and with a control washing with deionised water. Both NEW and AEW showed an inhibitory effect on natural microflora growth and retained the main quality attributes. Total chlorophyll content was preserved after shelf life. Initial total phenolic contents ranged between 1868 and 2518 mg CAE kg<sup>-1</sup> fw for AEW 40 and AEW 100 treatments respectively and slightly increased throughout shelf life. In contrast, after shelf life the total antioxidant activity recorded on the processing day decreased around 35%. Throughout shelf life EW induced an increase in catalase activity while superoxide dismutase activity decreased. Scanning electron microscopy of the leaves showed that neither NEW nor AEW affected their surface structure. To the best of our knowledge, the effects of NEW and AEW on bioactive quality parameters, as well as on antioxidant enzyme activities for fresh-cut baby leaves are first reported here. EW provides an alternative sanitizing technique to NaClO for maintaining the quality of fresh-cut mizuna baby leaves up to 11 days at 5 °C.