

Title Processing line effects on storage attributes of fresh-cut spinach leaves.
Authors Hodges, D. M., Forney, C. F. and Wismer, W.
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Abstract

The purpose of this study was to examine the effects of different steps in a representative fresh-cut processing line on storage quality of spinach (*Spinach oleracea*). To this end, spinach leaves were removed at successive points on the line: (1) before entry into the line (control); (2) after a shaking procedure but before initial rinsing with 10 deg C water + 5 mg/litre chlorine dioxide; (3) after centrifugal drying; and (4) after commercial packaging. After removal from the different points in the line, the spinach samples were stored at 10 deg C for 16 days, during which time malondialdehyde (MDA) concentration (lipid peroxidation assay), electrolyte leakage (membrane leakiness), chlorophyll content (a, b, and total), and colour attributes (L, saturation, hue angle) were measured. Both lipid peroxidation and electrolyte leakage increased with time of storage and with stage of processing. Electrolyte leakage increased most in material removed after the shaking procedure, but prior to hydrocooling. Overall total chlorophyll loss during storage did not change with time of removal from the processing line, although overall chlorophyll b content decreased in stored material 8 days following centrifugal drying and packaging. A more rapid loss in chlorophyll a relative to chlorophyll b over the first 8 days of storage was reflected in hue angle measurements regardless of the point of removal. The processing line under study, thus had both beneficial and detrimental effects on storage quality of spinach.