

Title 1-Methyl cyclopropene extends postharvest life of spinach leaves

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Citation LWT - Food Science and Technology, Volume 43, Issue 1, January 2010, Pages 1-11

Keywords 1-MCP; Ammonium; Ascorbic acid; Ethylene; Glutathione; Protein degradation; Senescence; Spinach

Abstract

Senescence of detached spinach leaves either untreated or treated with 0.1 or 1.0 $\mu\text{L L}^{-1}$ 1-MCP has been investigated. 1-MCP treated leaves had higher chlorophyll content and photosystem II potential quantum yield (Fv/Fm) and lower solute leakage than untreated leaves after storage in darkness at 23 °C for 6 d, indicating a delay of senescence. Ethylene production was increased in spinach supplemented with 1-MCP after 3 d storage and then declined to the rates of untreated leaves. 1-MCP treated spinach had higher ascorbic acid and glutathione concentrations, and a low oxidised/reduced ratio for both antioxidants. Accumulations of ammonium and protein degradation were reduced by 1-MCP. The results presented here indicate that inhibition of ethylene sensitivity can be successfully used to extend the postharvest life of spinach leaves.