

Title Effect of 1-methylcyclopropene (1-MCP) treatment on sweet basil leaf senescence and ethylene production during shelf-life

Author F.A.S. Hassan and S.A. Mahfouz

Citation Postharvest Biology and Technology, Volume 55, Issue 1, January 2010, Pages 61-65

Keywords Sweet basil; 1-MCP; Chlorophyll; Protein; Shelf-life

Abstract

The effect of 1-methylcyclopropene (1-MCP) on shelf-life and postharvest quality of sweet basil detached leaves was examined. Treatment with 0.2, 0.4 and 0.6 g m⁻³ 1-MCP for 8 h was conducted at 15 °C in the dark. After the treatment the leaves were packed in polyethylene bags then sealed and stored at 20 °C. All 1-MCP concentrations significantly increased the shelf-life of leaves compared to the untreated control, and leaf weight loss with 1-MCP treatment was minimal. 1-MCP treatment significantly retarded the degradation of chlorophyll and protein content of detached leaves during storage and decreased leaf ethylene production. 1-MCP treatment also significantly retarded the decrease of volatile oil percentage in detached leaves during storage compared to the control. Among 1-MCP concentrations, 0.4 g m⁻³ resulted in the maximum shelf-life as well as improved postharvest quality of the leaves. The results clearly indicate that a single treatment with 1-MCP may provide a feasible technique for extending the shelf-life and maintaining higher volatile oil percentage of sweet basil leaves.