

Title Isolation and gene expression analysis of postharvest senescence marker in baby spinach leaves

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Abstract

Spinach leafy vegetables during postharvest stage undergo several mechanical processes that may induce tissue damage and quality losses. The membrane degradation may activate several postharvest problems with involvement of ascorbic acid production. Ascorbic acid is highly perishable and can be an indicator of leaf senescence. However, through bioinformatics investigation were identified putative senescence postharvest markers. These genes were isolated using degenerate primers and cloned. Spinach leaves were harvested at commercial stage. Leaves were cut in four pieces and control was composed by whole leaves. The ascorbic metabolism was studied in spinach leaves kept at 8°C or 20°C in plastic bags. The ascorbic acid was measured in spinach leaves stored in both temperatures. Gene expression analysis of a putative cysteine proteases (SoCP) was determined in different sampling points. Results observed showed an increase of ascorbic acid immediately after wounding. However, the ascorbic acid content declined during storage. The gene expression analysis showed an enhancement of transcript in wounded tissues.