Aloe vera gel coating delays post-cut surface browning and maintains quality of cold stored lotus (*Nelumbo nucifera* Gaertn.) root slices

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Abstract

Post-cut surface browning is the leading constraint in shelf life extension and marketing of fresh-cut slices of lotus roots. In the current work, efficacy of *Aloe vera* gel (AVG) coating on quality and post-cut surface discoloration of lotus root slices was investigated. The slices were coated with 0, 25 and 50% AVG concentrations and kept at 5 ± 1 °C for 8 days. The slices coated with 50% AVG concentration showed substantially higher overall visual quality with markedly lower weight loss, browning degree, total aerobic bacteria and activities of polyphenol oxidase and peroxidase enzymes. Relative electrolyte leakage, hydrogen peroxide, superoxide anion and malondialdehyde content were also significantly lower in 50% AVG gel coated slices. Similarly, 50% AVG treatment had substantially higher total phenolic content and superoxide dismutase, ascorbate peroxidase and catalase enzymes activities. So, 50% AVG concentration is suitable to reduce enzymatic browning and to conserve overall quality of lotus root slices.