

Color stability of peeled 'Sariaslama' chestnuts

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Abstract

The potential use of citric acid, ascorbic acid and Na-metabisulphite for the control of browning of peeled 'Sariaslama' chestnut was investigated. 'Sariaslama' chestnuts were dipped into solutions of 0, 1, 2 and 4 mM citric acid, ascorbic acid and Na-metabisulphite, placed in trays over-wrapped with plastic film and stored at 4°C for 10 d. Color values and polyphenol oxidase (PPO) activity of the treated chestnuts were determined at 0, 3, 6 and 10 d during storage. Each of the chemicals tested significantly inhibited PPO activity. This inhibition was found to be maximal at day 6 for most of the tested inhibitors with the 2 mM citric acid and 4 mM Na-metabisulphite solutions producing the greatest effect. However, the average PPO inhibition over the entire 10 d storage period was greatest with 4 mM ascorbate and 2 mM Na-metabisulphite. Color *L* (lightness) values for all the chestnut samples decreased during storage. Among the chemical treatments tested, 4 mM citric acid and 4 mM Na-metabisulphite were the best inhibitors followed by ascorbic acid for preventing darkening during storage. In conclusion, our results suggest that Na-metabisulphite and citric acid (2 mM/4 mM) may be useful for reducing surface browning and extending the shelf life of peeled chestnuts for 10 d.