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Research Note

Control of Browning in Fresh-Cut Eggplant (*Solanum melongena* L.) Using Different Anti-Browning Agents

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The effectiveness of using various browning inhibitors commonly used in the local markets and commercially available sulfite substitutes on fresh-cut eggplant stored at ambient temperature was determined. Use of sodium metabisulfite (SMS) solution effectively delayed browning of eggplant slices. Optimization studies showed that SMS at 0.09% concentration is the most effective. Alternative agents generally regarded as safe (GRAS) such as ascorbic acid, citric acid, calcium chloride and oxalic acid were also tested. Individual applications of ascorbic acid (1%, 1.5% and 2%) and citric acid (1%) were not effective in delaying browning of fresh-cut eggplant. A combination of ascorbic acid (0.5%) with citric acid (0.5%) was not effective either, but higher concentrations can be used for further study. Oxalic acid at 0.5% and 1% concentrations resulted in peel color degradation and poor visual appearance of eggplant slices. Among the solutions tested, combination of ascorbic acid and calcium chloride (0.5%) showed potential as browning inhibitor but was still a bit less effective than SMS. Considering health concerns and safety of the traders and consumers, this would be a better option. Higher concentrations might be needed for individual or combined application, or using other combinations at different concentrations can be subjected to further study.

Keywords: anti-browning agents, fresh-cut eggplant, fresh-cuts, sodium metabisulfite, sulfite substitutes