

Thesis Title	Inhibition of Browning Reaction on Tender Coconut's Shell by Sulphite Substituted Chemicals and Modified Atmosphere Packaging
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ABSTRACT

The aim of this study was to determine the effectiveness of chemical for inhibiting of browning in young coconut husk. These chemicals were 4-hexylresorcinol ascorbic acid, citric acid, sodium erythorbate and sodium metabisulfite. Modified atmosphere packages using stretched PVC film, polyethylene plastic film bags (0.033 and 0.067 mm thickness) were compared. Chemical composition and sensory quality of coconut flesh and juice were analysed. Factors involved in enzymatic browning were determined.

The effective chemicals found in the preliminary tested were 4% ascorbic acid, 2.5% ascorbic acid + 3.5% citric acid, 7% sodium erythorbate and 2.5% sodium metabisulfite. Those chemicals were tested with whole fruits and similar results were obtained. In the first 4 weeks storage the use of 2.5% ascorbic acid + 3.5% citric acid had the highest effective. The sodium metabisulfite at 2.5% showed the most significantly effect after 5 weeks storage. The total acidity in coconut juice decreased but increased in flesh. Free fatty acid increased remarkably in juice. Fruits stored for 4 weeks

showed no effect on overall sensory qualities but prolonged to 5 weeks flavor and taste were reduced.

In modified atmosphere storage, stretched PVC film showed significantly effect on browning inhibition. After storage total acidity in coconut juice from fruit wrapped with PVC film were increased but decreased in polyethylene plastic film bag. In coconut flesh total acidity were increased in both types of film. Vitamin C nearly disappeared in both types of film. It was found that thick polyethylene film caused remarkably changes in texture, taste and flavor. The CO₂ concentration in thick and thin polyethylene plastic film bag were 14 and 7% respectively. The total phenolic compound, polyphenoloxidase and peroxidase were detected in coconut husk.