

**EFFECT OF CHITOSAN ON INHIBITION OF ENZYMATIC  
BROWNING IN CLOUDY APPLE JUICE AND COMPARE  
WITH SELECTED ANTIBROWNING AGENTS**

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Browning in apple juice during processing and storage decreases the commercial value of product. Polyphenoloxidase (PPO) causes browning by catalysing the oxidation of monophenolic compounds to o-diphenols and o-dihydroxy compounds to o-kinons. Commonly used methods for inhibiting enzymatic browning are heat treatment and using anti-browning agents. However, heat treatment can adversely affect not only sensory characteristics, such as flavor and taste, but also the nutritive values of foods. Although the use of sulfite-containing agent is one of the most effective and economical methods for inhibiting browning, their usage has been limited due to their harmful health effects. Therefore, the demand for natural, non-toxic compounds to inhibit PPO activity has been increasing. Chitosan is a promising and gaining importance due to the properties of biodegradable, nontoxic nature and antimicrobial effect. Purpose of this study is to investigate the possibilities of the utilization of chitosan as an antibrowning agent and compare with antibrowning agents such as: ascorbic acid, L-cysteine and benzoic acid. Color measurements and polyphenol oxidase (PPO) activity were used to compare the effectiveness of a series of compounds for inhibition of browning in the apple juice. For shorter storage times, chitosan prevents enzymatic browning that it is especially important in the application of non-thermal processes for the production of fruit juices in terms of delay of the enzymatic browning in the process before enzyme inactivation.

Keywords: Apple juice, chitosan, inhibition, enzymatic browning

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