

Title Effect of anti-browning treatments on physico-chemical characteristics and sensory acceptance of green roselle (*Hibiscus sabdariffa* Var. UKMR-3) pickle

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Abstract

The inhibition of enzymatic browning catalyzed by the enzyme polyphenol oxidase is still one of the main challenges in postharvest treatment of agricultural products. This study was aimed to evaluate the effect of several anti-browning treatments on physico-chemical characteristics and sensory acceptance of pickle produced from green roselle (*Hibiscus sabdariffa* L. var. UKMR-3). Two types of physical treatment (hot-water blanching and steam blanching) and three types of chemical treatment (0.15 M citric acid, 0.15 M ascorbic acid, and 0.15 M calcium chloride) were applied to fresh roselle calyces in a Completely Randomised Design. Analyses were carried out on samples for their physical characteristics, chemical characteristics, and sensory acceptance. Those treatments were found to significantly affect ($p < 0.05$) the samples physical characteristics (total soluble solid, yellowness, pH, titratable acidity, and firmness), chemical characteristics (proximate composition and vitamin C content), and sensory acceptance (color, texture, and overall acceptance). Anti-browning treatment with 0.15M calcium chloride was found to produce green roselle pickle with the highest firmness and greenness level, a desirable sensory acceptance, as well as comparatively high vitamin C content. This study has shown that with proper postharvest treatment applied, green roselle has potentials to be processed into food products such as pickle.