

Effect of Stage of Maturity on Physicochemical Properties of Jackfruit (*Artocarpus heterophyllus* Lam.) Flesh

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The objective of this study was to investigate the physicochemical changes in different maturity stages of jackfruit (*Artocarpus heterophyllus* Lam.) flesh. Four maturity stages including immature stage 1 and 2, mature stage and fully ripen stage were selected from several jackfruit trees in Western Province, and tested for color (L^* , a^* , b^* , c^* and h° values), hardness, moisture content, total soluble solids, pH, titratable acidity, and vitamin C content. Spectrophotometric methods were used to analyze the total starch content and total sugar content (Anthrone method). The results showed that the color parameters varied significantly with maturity and the hardness decreased. The moisture content ranged between 70.94 ± 2.09 - $89.21 \pm 2.29\%$. Total soluble solids increased with maturity, from $3.4 \pm 0.7\%$ to $19.6 \pm 1.1\%$, corresponding to the increase of total sugar content from $3.055 \pm 0.967\%$ to $25.498 \pm 0.495\%$. pH increased from the immature stage 1 (5.27 ± 0.15) to the mature stage (6.25 ± 0.06), then decreased during ripening up to 5.76 ± 0.03 . The variation of titratable acidity showed the opposite pattern of pH, with a range of 0.17 ± 0.07 - $0.29 \pm 0.06\%$. The vitamin C content increased with maturity, ranging between 2.18 ± 0.34 - 8.17 ± 0.39 mg $100g^{-1}$. The total starch content increased with maturity from $1.597 \pm 0.295\%$ to $19.533 \pm 0.354\%$, but then decreased with ripening up to $6.237 \pm 1.285\%$. The study concludes that there is a significant difference ($p < 0.05$) in physicochemical traits at different maturity stages of jackfruit flesh.

Keywords: *Artocarpus heterophyllus*, Physico-chemical properties