

COMPARATIVE ASSESSMENT OF FRUIT QUALITY PARAMETERS OF IMPROVED COCONUT (*Cocos nucifera* L.) CULTIVARS IN SRI LANKA

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The Coconut Research Institute of Sri Lanka has developed seven improved coconut cultivars with enhanced yield, quality, and adaptability. However, further comparative evaluation is required to assess the key fruit components of industrial importance. To address this, a comparative analysis of the fruit components of improved coconut cultivars; CRIC60, CRIC65, CRISL98, *Kapruwana*, *Kapsuwaya*, *Kapsetha*, and CRISL2020 was performed, focusing on their industrial applications. Six palms of the same age from each cultivar were randomly selected from the IL1a agro-climatic zone, and six mature fruits were collected from each palm, for a total of 252 samples. Key fruit parameters; nut water volume, brix value, the weight of fresh nut, dehusked nut, split nut, fresh kernel, shell, and husk, along with milk yield were assessed. The proximate composition of coconut milk and kernel was analyzed. Data were analyzed using one-way ANOVA, with treatment means compared by Tukey's test at a 0.05 significance level in Minitab 17. CRISL98 showed superior performance in certain key parameters; fresh nut, dehusked nut, split nut, fresh kernel, shell, husk weight, and water volume. Additionally, CRISL98 produced higher coconut milk volume, weight, and solid per nut than other varieties. *Kapsuwaya* exhibited a higher brix value, indicating greater sugar content in its water. CRIC60 had the highest coconut husk-to-fresh nut weight (FNW) ratio. *Kapruwana* and *Kapsetha* exhibited a higher coconut kernel-to-FNW ratio while *Kapsetha* and CRISL2020 showed a higher coconut water-to-FNW ratio. There were no significant differences in the kernel to Copra Conversion Factor (CCF), dry weight, or the dehusked nut weight to CCF ratio and crude fat, indicating consistency across the improved cultivars. Findings confirmed that all improved cultivars have strong potential for diverse industrial applications. Further research on the nutritional composition and oil quality of these cultivars is suggested.

Keywords: Coconut water, Industrial applications, Proximate composition