

EVALUATION OF THE DRYING CHARACTERISTICS OF *GOTUKOLA* (*Centella asiatica*) AND *KATURUMURUNGA* (*Sesbania grandiflora*)

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Green leaves such as *Gotukola* (*Centella asiatica*) and *Katurumurunga* (*Sesbania grandiflora*) gain global demand due to their exceptional nutritional, medicinal properties, and significant export potential. The study aimed to evaluate the optimum drying conditions of hot air, heat pump, and vacuum drying for drying *Gotukola* and *Katurumurunga* leaves. The fresh leaves were washed and then the leaves were dried under different drying conditions: hot air drying (55°C, 60°C, 65°C), heat pump drying (50°C, 55°C, 60°C), and vacuum drying (65°C, 70°C, 75°C). Dried leaves were analyzed for physical quality parameters, moisture content, color, and rehydration ratio. Total Phenolic Content (TPC) and flavonoids were analyzed as chemical parameters. Drying curves were obtained by analyzing the moisture content in predetermined time intervals. The results revealed that the drying curves indicate a falling rate and a higher temperature led to a higher drying rate. The highest rehydration ratios were indicated by 60°C heat pump drying for *Gotukola* (9.28 ± 0.34) and 55°C hot air drying for the *Katurumurunga* (5.85 ± 0.78). The color of the leaves was degraded with time in each drying method. The minimum ΔE values for hot air, heat pump, and vacuum drying of *Gotukola* were 8.12 at 60°C, 6.29 at 55°C, and 2.88 at 75°C, respectively. The respective values for *Katurumurunga* were 6.61 at 60°C, 5.29 at 50°C, and 3.85 at 70°C. The highest TPC and flavonoids were reported from vacuum drying. This study concludes that vacuum drying is the most effective method of drying for *Gotukola* and *Katurumurunga* compared to hot air and heat pump drying.

Keywords: *Gotukola*, Heat pump drying, Hot air drying, *Katurumurunga*, Vacuum drying