

## ***Evaluation of Functional Properties and Sensory Attributes of Selected Curry Leaf (*Bergera Koenigii*) Ecotypes Thriving across Sri Lanka***

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Different ecotypes of curry leaves (*Bergera koenigii*) are thriving across all agroecological zones of Sri Lanka. The current study aimed to find the differences in functional properties and sensory attributes among ecotypes collected from selected localities in wet, dry and intermediate zones. Samples were collected from natural populations in Kurunegala, Kegalle, Rikillagaskada, Ritigala, Mahailuppallama, Dambulla and Mahiyanganaya areas. Physical properties such as moisture content, bulk density, water holding capacity, water solubility, swelling power of curry leaf powder and functional properties including DPPH radical scavenging activity and total phenolic content which affects the antioxidant capacity of curry leaf as well as sensory attributes including color, aroma, taste, aftertaste, astringency, and overall preference of the aqueous extract of curry leaf powder were evaluated and compared among all the selected ecotypes. When considering the physical properties, the highest water holding capacity, water solubility, and swelling power were observed in the Kurunegala sample, which were recorded as  $3.72\pm 0.02\%$ ,  $19.56\pm 0.21\%$ , and  $8.21\pm 0.13\%$ , respectively ( $p < 0.05$ ), followed by the Rikillagaskada sample, which had the water holding capacity of  $3.63\pm 0.09\%$  and the swelling power of  $7.76\pm 0.24\%$  ( $p < 0.05$ ). The Rikillagaskada sample exhibited the greatest total phenolic content at  $44.12\pm 4.06$  mg GAE/g ( $p < 0.05$ ). The highest antioxidant capacity in terms of DPPH radical scavenging activity was recorded from the Ritigala ecotype at  $64.83\pm 0.09$  mg GAE/g, followed by the Rikillagaskada ecotype at  $64.26\pm 0.89$  mg AAE/g ( $p < 0.05$ ). In terms of sensory attributes, tea extracts of the Rikillagaskada and Kurunegala ecotypes exhibited the highest scores for overall preference ( $p < 0.05$ ). In conclusion, the Rikillagaskada and Kurunegala ecotypes exhibited promising qualities in terms of total phenolic content, sensory attributes and physical characteristics. These findings manifest the potential of utilizing different ecotypes of curry leaves with enhanced functional and sensory profiles for various applications in culinary and medicinal contexts.

**Keywords:** Curry Leaves, Ecotype, Functional Properties, Phenolic Content, Antioxidant Activity, Sensory Attributes

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