

## **Antioxidant Activity and Phenol Content of Commonly Consumed Cowpea Varieties in Sri Lanka**

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Diet related diseases are on the increase in Sri Lanka at present and account for more than 20% of total deaths. Thus, the potential dietary intervention is necessary to control these diseases by promoting suitable dietary sources. It has been shown that regular consumption of pulses can contribute to the reduced risk of heart diseases, obesity and diabetes.

The cowpea (*Vigna unguiculata* L.walp) is considered a grain legume or pulse. It is believed to have originated in Africa and Asia, and is widely cultivated in the tropics. The nutrient content of cowpea varies mainly because of genetic background as well as climate. Cowpeas are a rich source of proteins, dietary fibre, micronutrients and bioactive phytochemicals. Antioxidant compounds in food play an important role as a health-protecting factor. Scientific evidence suggests that antioxidants reduce the risk of chronic diseases including heart diseases and cancers.

In this study, four different varieties of commonly consumed cowpeas Waruni (red colour), Bombay (black colour), Dawala (black and cream colour), MI35 (cream colour) in Sri Lanka were screened for antioxidant activity and total phenolic content. The raw, dried, powdered samples were extracted with methanol. Antioxidant activity was analysed by DPPH free radical scavenging assay and phenol content was analysed by Folin-Ciocalteu colorimetry method. Antioxidant activity of extracts was expressed as IC<sub>50</sub> values ( $\mu\text{g/ml}$ ) and the total phenol content was expressed as mg/g. IC<sub>50</sub> values for Waruni, Bombay, Dawala and MI 35 were 350,560 ,815and 1200  $\mu\text{g/ml}$ , respectively against the corresponding standard butylated hydroxytoluene (BHT) (12.5  $\mu\text{g/ml}$ ). While the phenol content of Waruni, Bombay, Dawala and MI 35 was 11.74, 9.9, 7.2, and 6.0 mg/g, respectively. Cowpeas varied largely in their antioxidant activity and phenol content with the variety. Waruni and Bombay varieties showed a higher antioxidant activity and phenolic content while MI 35 (cream colour) variety showed the lowest. Positive correlation ( $r(2) > 0.97$ ) was observed between antioxidant activity and phenolic content in four cowpea varieties. This indicated that phenolic compounds were the main contributor of antioxidant activity in cowpeas.