

## Evaluation of Antioxidant properties of *Cassia auriculata* L. Flower Extracts

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### ***Abstract***

*Cassia auriculata* L. (*Aavaaram* in Tamil) is a shrub widely grown in the Dry Zone of Sri Lanka. *C. auriculata* L. flower is a rich source of natural antioxidant with medicinal properties, however, it remains underutilized. The present study was aimed to investigate the effect of extraction solvent and duration on potential antioxidant properties of *C. auriculata* L. flower. Fresh and dried (sundried, oven dried, microwave dried) flowers of *C. auriculata* L. were treated under different extraction time period (2, 4 and 6 h) using two solvents [methanol (70%, v/v) and ethanol (70%, v/v)], separately. Sample was macerated with solvents (1:4) and shaken for 2, 4 and 6 h at 200 rpm at ambient temperature. The supernatants were collected and solvent was evaporated to get dry extract of antioxidants. The antioxidant properties such as total phenolic content (TPC), total flavonoid content (TFC), total antioxidant capacity and antioxidant activity were determined using standard methods. Significantly higher TPC was reported in fresh flower extracts than dried flower extracts and increased with increasing duration of extraction for both solvents. Among the dried flower extracts, significantly highest TPC was reported in extract of sun dried flowers followed by oven dried flower extracts, while the microwave dried flower extracts contained significantly lowest TPC. Methanolic extract of fresh flower showed significantly higher value than ethanolic extract of fresh flower and increased significantly with increase in duration of extraction, while, duration of extraction did not show any significant effect on TFC of dried flower and both solvents showed similar effect on the extraction of TFC. Higher antioxidant activity and total antioxidant capacity were observed in ethanolic extracts. Fresh flowers ethanolic extracts showed highest antioxidant properties with increased extraction duration. Thus, comparatively, ethanol found to be the most suitable solvent for extraction of antioxidant compounds from the *C. auriculata* L. flower and extraction could be increased by increasing the duration of extraction.

Keywords: *Cassia auriculata* L., ethanol, flavonoids, methanol, phenolics