

Phenolic Compounds and Antioxidant Capacity of Tuckeroo (*Cupaniopsis anacardioides*) Fruits

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Abstract : Tuckeroo (*Cupaniopsis anacardioides*) is an Australian native plant and is grown in the coastal regions in New South Wales, Queensland and Northern Australia. Its fruits have been eaten by birds; however there is no information on phytochemical and antioxidant capacity of these fruits. This study aimed to determine the phenolic compounds (TPC), flavonoids (TFC), proanthocyanidins (TPro) and antioxidant capacity in the whole or different parts of tuckeroo fruit including skin, flesh and seed. Whole and partly tuckeroo fruits were collected and immediately freeze dried to constant weight and then ground to small particle sizes (<1mm mesh). Samples were extracted in 50% methanol using an ultrasonic bath set at temperature 40 °C for 30 minutes. TPC, TFC, TPro and antioxidant capacity were measured by spectrophotometric analysis. The results showed that the whole fruits contained 106.23 mg GAE/g of TPC, 67.67 mg CAE/g of TFC and 56.74 mg CAE/g of TPro. These fruits also possessed high antioxidant capacity (DPPH: 263.78 mg TroE/g, ABTS: 346.98 mg TroE/g, CUPRAC: 370.12 mg TroE/g and FRAP: 176.30 mg TroE/g), revealing that these fruits are rich source of antioxidants. The results also showed that distribution of the antioxidants was varied in different parts of the fruits. Skin had the highest levels of TPC, TFC, and TPro as well as antioxidant properties, followed by the seed and flesh had the lowest levels of phenolic compounds and antioxidant capacity. Of note, levels of phenolic compounds and antioxidant capacity of the skin were significantly higher than those of the whole fruits. Therefore, the skin of tuckeroo fruits is recommended as a starting material for extraction and purification of phenolic compounds as potential antioxidants for further utilisation in the food and pharmaceutical industries.

Keywords : antioxidant capacity, *Cupaniopsis anacardioides*, phenolic compounds, tuckeroo fruit

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