216/B

Aporosa lindleyana Baill. (Kebella) tea: an alternative to Green tea

S. Kathirgamanathar,[1*] W.P.K.M. Abeysekera,[1]D.M.K.P. Weerasinghe,[2] P.Ranasinghe,[1]
A.M.C.U. Binduhewa,[1] and M.D.P.M.Peiris[1]

[1]*Industrial Technology Institute (ITI), 363, Bauddhaloka Mawatha, Colombo 07, Sri Lanka.*
[2]*Department of Export Agriculture, Faculty of Agricultural Sciences, University of Sabaragamuwa, Sri Lanka*

Camellia sinensis, known as tea, is the most consumed beverage worldwide, and is reported to have numerous health benefits. Compared to *Camellia sinensis* other herbal teas are less investigated for their health benefits to date. *Aporosa lindleyana* Baill. known as kebella in Sinhalese is used as a leafy vegetable in Sri Lanka. The root and bark of this plant is reported to have many bioactivities. However, the leaves of this plant have scarcely been investigated for pharmacological activities, except the antioxidant activity by DPPH mechanism, and anti-inflammatory activity. Therefore, the present study evaluated the antioxidant activity by multiple mechanisms, the sensory properties of the tea brew, and quantifiedthe phytochemicals and proximate composition of the leaves of *A. lindleyana*.

Fresh *A. lindleyana* leaves were collected from a Maharagama home garden, Western Province in Sri Lanka, cleaned, oven dried at 50°C for 6 h, powdered and sieved to obtain 0.8 mm size particles to prepare kebella tea. The tea brew of kebella (2 g in 100 mL of boiled water for 10 minutes) was used to evaluate the antioxidants in terms of total polyphenolic content (TPC, n=6), total flavonoid content (TFC, n=6), and antioxidant properties via the Ferric reducing antioxidant power (FRAP, n=6), 1,1-diphenyl-2-picrylhydrazyl (DPPH, n=4), and 2,2'-azinobis-(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS, n=4) antioxidant bio assays *in vitro.*The sensory evaluation (appearance, colour, mouthfeel, aroma, flavour and overall acceptability) of *A. lindleyana* tea was carried out using a trained panel with comparison to green tea.

The mean TPC and TFC of tea brew of kebella were 875.3 ±42.0mg Gallic acid equivalents/L and7.85±0.27 mg Quercetin equivalents/L respectively. The antioxidant activities for FRAP, DPPH and ABTS of tea brew were 1151.5 ± 27.7, 899.1 ±74.7,and 1520.3 ± 95.5mg Trolox Equivalents/L respectively. The leaves contain alkaloids (1.4%), saponins (0.79%), steroids (0.54%), terpenoids, tannins and flavonoids. The proximate composition: moisture, carbohydrate, protein, fat, crude fibre and ash were12.2%, 49.4%, 13.2%, 1.1%, 16.0%, and 8.1% respectively. Sensory evaluation showed that green tea and kebella tea were not significantly different in terms of mouthfeel, aroma, flavour and overall acceptability. In conclusion, the tea brew of leaves of *A. lindleyana* is highly nutritious and possesses marked antioxidant activities. The kebella tea can compete with green tea in terms of major sensory parameters and it can be used as a potential nutraceutical.

Keywords: *Aporosa lindleyana,* antioxidants, sensory evaluation, proximate analysis

selvaluxmy@iti.lk Tel: +94112797323