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Evaluation of nutritional properties and antioxidant activity of two Sri Lankan green leafy vegetables: Kiri anguna and tikta anguna (*Wattakaka volubilis* Linn.)

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Both Kiri anguna (KA) and Tikta anguna (TA) are creepers come under one botanical name *Wattakaka volubilis* Linn. which belong to the family Asclapadaceae. These two creepers are morphologically different, though they come under one botanical name. People prepare dishes from the tender leaves of bothKA and TA by mixing with grated coconut and consume it with or without cooking as a traditional food in Asian countries. These palatable dishes are ideal for lactating mothers due to their galactagogue property. Though they are consumed regularly, no adequate scientific experiments have been carried out to investigate the nutritional properties including antioxidant activity of the leaves of KA and TA. Therefore, the present study was conducted to (a) compare the nutritional properties (in terms of protein, crude fat, carbohydrates, dietary fiber, magnesium, iron and calcium percentage by AOAC methods), (b) investigate the antioxidant activity (by DPPH assay and estimation of total polyphenolic and flavonoid contents) of tender leaves of KA and TA.

Results revealed the presence of protein (KA: 32.63%, TA: 35.13%), crude fat (KA: 3.26% TA: 2.07%), carbohydrates (KA: 17.77%, TA: 25.50%), dietary fiber (KA: 24.83%, TA: 13.83%), magnesium (KA: 0.49%, TA: 0.24%), iron (KA: 0.39%, TA: 0.02%) and calcium (KA: 1.03%, TA: 1.05%) in both plants (dry basis). Antioxidant potential of KA (IC_{50}: 7.06 ± 0.40 µg/mL) and TA (IC_{50}: 13.7 ± 0.12 µg/mL) were comparable to that of L -ascorbic acid (IC_{50}: 6.40 ± 0.21 µg/mL) and high content of phenolic compounds (KA: 75.8 ± 0.40 mg gallic acid/g of extract equivalents, TA: 62.8 ± 0.20 mg gallic acid/g of extract equivalents) and flavonoids (KA: 45.3 ± 0.2 mg quercetin/g of extract equivalents, TA:38.1 ± 0.10 mg quercetin acid equivalents) were present in both plants. In conclusion, this study reveals that both KA and TA creepers are a good source of essential nutrients and can be included in diets to supplement our daily nutrient needs.

Keywords: *Wattakaka volubilis*, nutritional values, antioxidant activity

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