

Proximate analysis and determination of mineral, starch, ascorbic acid and cyanide contents in *Manihot esculenta* (CARI 555) grown in Sri Lanka

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Cassava, a popular local yam consumed in Sri Lanka, is an important source of energy and is a raw material for foods. A survey on cassava cultivation revealed that the most common cassava variety among local cassava cultivators is CARI 555 which is popularly known as “Alu Peradeniya”.

This study was performed to determine the proximate composition, cyanide, mineral (K, Ca, Na and Fe), starch and ascorbic acid contents of the CARI 555 variety collected from local farmers in different areas of Sri Lanka. All proximate parameters and ascorbic acid content were determined according to AOAC standard methods. The cyanide content of starchy flesh was determined by a simple picrate paper kit method. Starch was extracted using the wet method.

Moisture content of cassava samples ranged from 59.9- 66.7% on wet basis. Ranges of protein, total fat, ash, fibre and carbohydrate contents were 2.0- 2.7%, 0.4- 0.6%, 1.7- 2.3%, 4.0- 5.0% and 23.4- 28.8% on dry basis, respectively. Concentrations of Na and K in the starchy flesh of CARI 555 were both significantly higher than that of outer and inner peel. The Na content ranged from 158.98 - 110.88 mg/kg and K content ranged from 55.90 - 40.32 mg/kg. Starchy flesh had a higher concentration of Fe when compared with the inner and outer peel (5.78 - 4.00 mg/kg). The starchy flesh of cassava tubers had the highest Ca concentration while inner and outer peel had lower values which ranged from 76.79 - 47.68 mg/kg. Results revealed that there was a significant variation in the mineral content of cassava depending on the region of cultivation. The starch content of the tuber ranged from 20.01- 22.40% while the ascorbic acid content ranged from 21.61 - 24.66 mg per 100 g of fresh tuber. The cyanide content of tubers ranged from 24.17 - 31.20 mg/kg while the lethal dose of cyanide is 0.5 -3.5 mg/kg of body weight. Therefore, it can be concluded that this variety of cassava is a good source of nutrition and its consumption should be promoted in Sri Lanka.

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