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The nutritional health factors of Cashewnut (Anacardium *occident ale*, L.)

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Abstract

Cashew is a bean shaped nut that grows on a tropical evergreen tree. In recent years, the importance of cashew in terms of human health is gaining momentum. The nuts (kernels) of 75 promising cashew germplasms were taken from different soils of India, into consideration for chemical quantification. The study reveals that nutritional content per 100 gm): Iron-0.08, Calcium-0.96, magnesium-0.75, potassium-2.18, sodium-0.22, phosphorus-1.21, neutrallipid-98.54, phospholipid-3.12, protein-49.63, starch-33.5, amino acid–53.37, phenol-53.4, total sugar-21.27. Cashew nuts contain ample amounts of lipids that promote cardiovascular health. Often high triglyceride levels are associated with an increased risk for heart disorders and mono unsaturated fats reduce triglyceride levels. The cashew nuts high magnesium content also takes the credit for its healthy heart quality & so daily recommended for the heart healthy mineral. It also protects against high blood pressure, muscle spasms, migraine headaches, tension, soreness and fatigue.

Keywords: Anacardium *occident ale,* Cashewnut, nutritional value, triglyceride levels.

Introduction

Cashew (*Anacardium occident ale*, L.) Family – Anacardiaceae is a native of Brazil & it was introduced in India in the early 16th century. Portuguese discovered cashew in Brazil & spread in India considering its medicinal value to the human beings. In the present context, attempt has been made for the selection of superior germplasms in terms of the evaluation of quality characters (physic – chemical characters) of cashew kernel.

Material & Methods

The nuts of cashew germplasms were sundried immediately after harvest and stored at ambient temperature. After 75 days, the nuts were shelled and kernels were dried at room temperature for 2-3 hours. With the help of mortar & pestle, the kernels were powdered. Extractions were made with the help of chloroform & methanol (2: 1 v/v) over a period of 50 hours. Now this lipid free kernel flour were used for the quantification (extraction & estimation) of different following physico chemical traits :–

Mineral content

Prepared lipid free cashew kernel powder (5 gm) was digested first with nitrate acid (5 ml) followed by perchloric acid (5 ml) and the

digest was used for the estimation of iron and magnesium by following Colorimetric Method (AOA, 1980, Nagaraja, 1987). Estimation of calcium was done by following Spectrophotometry Method (AOAC, 1980, Nagaraja, 1987). Quantification of sodium, potassium and phosphorus was done by following the procedure proposed by Flame photometry method (AOAC, 1980, Nagaraja, 1987) and Micro – colorimetric method (Taussky et al., 1953) respectively.

Lipid content

The prepared kernel flour powder were extracted in a soxhlet apparatus with a mixture of chloroform and methanol (2:1 v/v). After concentration under vacuum, there lipid extract was differentiated into neutral lipid phospho-lipid, Glyco-lipid by following Silicic Acid Chromatography (Nagaraja, 1987; AOAC,1980; Sadasivam, and Manickam, 1991; Taussky, and Shrove, 1953; Maya, and Brown, 1975; Ito, and Fujinoy, 1972).

The prepared LFKF was used for quantification of N_2 by following Micro-kjeldahl's method (Nagaraja, 1987; AOAC, 1980) for quantification of starch by following Anthrone Reagent method (Nagaraja,1987; AOAC, 1980) for quantification of starch by following Phenol Sulphuric acid method (AOAC, 1980) for quantification of Amino acid by following Ninhydrin method (Yemm, and Cocking, 1955; AOAC, 1980) for quantification of phenol by following Folin-Ciocalteau Reagent method (Mallick, 1980) for quantification of reducing sugar by following Alkaline Copper Tartarate Arceno- molybdate reagent method (Nagaraja,1987; AOAC, 1980).

Observations

The chemical compositions of kernel were in the following range. The kernel of cashew plants contain iron (0.01-0.02%), magnesium (0.35-0.62%), calcium (0.07-0.17%), potassium (1.20-1.51%), sodium (0.13-0.21%) and phosphorus (0.35-1.05%).

Table 1. shows the Biochemical compounds of Cashew Kernel.

Traits	Name of Germplasm				
	MMA	H 2/12	BLA 273/1	Br 2/18	M 76/1
Iron	0.01	0.02	0.02	0.01	0.02
Calcium	0.11	0.07	0.16	0.11	0.17
Magnesium	0.47	0.35	0.44	0.53	0.62
Potassium	1.49	1.38	1.20	1.45	1.51
Sodium	0.19	0.13	0.15	0.21	0.13
Phosphorus	0.97	01.05	0.35	0.72	1.01
Starch	17.53	16.57	16.10	21.43	19.83
Phenol	31.47	45.13	31.60	46.53	38.93
Protein	37.47	35.77	30.10	32.27	30.83
Amino acid	42.67	40.37	33.87	42.50	34.03
Total Sugar	9.50	12.55	10.40	09.93	15.77
Reducing Sugar	0.12	0.15	0.11	0.20	0.15
Neutral lipid	95.15	95.53	94.13	95.84	95.45
Glyco-lipid	1.61	1.51	1.76	1.67	1.45
Phospho-lipid	2.17	2.33	1.05	1.37	1.15

Out of 6 analysed minerals, potassium content is maximum and highest in the plants of M -76/1(1.51%) and lowest amount was recorded in BLA-273/1 (1.20%).

Protein content seed kernel was on the average amount (30.10–37.47%). Starch, amino acid and phenol content were recorded at the range of 16.10–21.43%, 33.87 – 42.67% and 31.47–46.53% respectively. Reducing and total sugar of kernel were in the amount of 0.11–0.20% and 9.50 – 15.77% respectively.

Neutral lipid was in variable amount (94.13 – 95.84%). Glycolipid content was noticed in an average range (1.45–1.76%). The amount of phospholipids content was in the range of 1.05–2.17%. Neutral lipid was accounted for about 90–98% of the total lipid. It was maximum and highest in the kernels of the plants of 94.13 – 95.84%. The kernels of the plants of BLA- 273/1 shows highest amount of glycolipid (1.76%) and lowest amount was recorded in M - 76/1(1.15%). Out of the 5 varieties analysed, phospholipid was highest in the plants of MMA (2.17%) and lowest in BLA- 273/1(1.05%).

Discussion

Cashew nuts contain ample amounts of lipids that promote cardiovascular health. Often high triglyceride levels are associated with an increased risk for heart disorders and mono unsaturated fats reduce triglyceride levels. The cashew nuts high magnesium content also takes the credit for its healthy heart quality & so daily recommended for the heart healthy mineral. It also protects against high blood pressure, muscle spasms, migraine headaches, tension, soreness and fatigue.

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