

Note on the oil and carbohydrate contents of varieties of cashewnut (*Anacardium occidentale* L.)

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There is a lack of information about the chemical composition of various varieties of cashewnut grown under different regions of the country, except that of the protein content of kernel (Woodroof, 1970). The present study was undertaken to get information on the chemical composition (oil and carbohydrate fractions) of different varieties of cashewnut kernel.

Fully tree-ripe cashewnuts were collected during the harvesting season (March-May) in 1970. The kernel was separated and a thin testa covering the kernel removed. Kernel and shell were crushed separately and the oil content was determined by the method described by Ruck (1963). Reducing, non-reducing and total sugars and starch in the kernel were analysed according to the methods of

Table 1. Percentage of oil and carbohydrate contents in cashewnut varieties (mean of 3 replicates)

No.	Origin	Oil content of shell	Oil content	Kernel			
				Carbohydrate content			
				Reducing sugar	Non-reducing sugar	Total sugar	Starch
1	Kenya	20.028	42.480	2.997	4.418	7.648	9.999
2	Ex-Tanganika	28.831	42.280	2.427	3.560	6.175	9.533
3	Singapore	24.161	34.800	2.857	3.829	6.888	10.418
4	Chirala	24.633	43.400	1.666	1.702	3.458	5.513
5	Rangium	28.448	42.680	1.230	3.477	4.890	5.382
6	Kattupalli	23.421	41.280	1.315	3.993	5.555	6.696
7	Gangadevankuppam	21.942	39.800	1.219	4.970	6.451	7.429
8	Peppariyankuppam	20.246	37.000	1.515	2.360	4.000	5.137
9	Edayanchavadi	20.577	40.000	3.151	2.924	6.229	11.222
10	Chinglepet	21.736	36.680	1.080	1.966	3.159	4.999
11	South Arcot	31.101	36.000	2.883	5.545	8.720	10.513
12	Ramapuram	26.601	34.480	2.590	3.872	6.666	8.892
13	Ramapuram (irrigated)	19.241	42.160	2.551	3.085	5.799	9.513
14	Vazhisodanaipalayam	17.423	40.280	1.026	5.773	7.103	8.610
15	Badiyadka	16.594	38.080	1.471	3.999	5.681	6.676
16	Vittal	18.863	40.880	2.215	4.341	6.732	9.656
17	Belthangady	24.336	40.800	1.562	3.172	4.901	8.287
18	Agumbe	19.241	40.880	1.083	1.287	2.438	5.798
19	Tirthahalli	32.940	38.760	1.666	3.724	5.586	7.269
20	Bhatkal	23.466	40.680	1.315	2.550	4.000	10.921
21	Kumta	25.156	46.760	1.775	1.651	3.724	5.067
22	Mapusa	30.328	43.600	2.282	3.685	6.161	9.036
23	Pillerna	25.251	43.800	0.909	3.914	5.120	4.806
24	Vengurla	29.145	41.160	1.515	2.158	3.787	4.658

1-3, Exotic varieties collected from Cashew Research Station, Vriddhachalam, Tamil Nadu; 4, Andhra Pradesh; 5-14, Tamil Nadu; 15, Kerala; 16-21, Mysore State; 22-23, Goa; and 24, Maharashtra.

and Murneek (1940) and AOAC varieties analysed, their origin, oil and carbohydrate content are given in Table 1. The oil content in the indigenous varieties ranged from 34.480 per cent (Ramato) to 46.760 per cent (Kumta). The indigenous varieties, 8 consist of 40.000 per cent oil and 13 when compared with 34.800-42.480 per cent of oil in exotics. The shell oil in indigenous varieties ranged from 16.594 (Badiyadka) to 32.940 per cent (all) when compared with 20.028 (Kenya) and 28.831 per cent (exotic). In general, the oil content in the kernel was higher than in the shell. Free sugars in indigenous cultivated varieties ranged from 0.909 per cent (Pillerna) to 2.997 per cent (Edayanchavadi) when compared with varieties 2.427 to 2.997 per cent (Kenya, ex-Tanganika and ex-Singapore). Non-reducing sugar in indigenous cultivars varied widely, and was 1.287 per cent (Agumbe) and 5.773 per cent in Vazhisodanai palayam (5.773 per cent) when compared with exotics ex-Singapore (3.560 per cent) and Kenya (2.438 per cent). Total sugar varied from 2.438 per cent (Agumbe) to 10.418 per cent (South Arcot) in the

indigenous and from 6.175 per cent (ex-Tanganika) to 7.648 per cent (Kenya) in exotics.

Starch content of the indigenous varieties ranged from 4.658 per cent (Vengurla) to 11.222 per cent (Edayanchavadi). Among the 3 exotic varieties, the starch content varied from 9.533 per cent (ex-Tanganika) to 10.418 per cent (Singapore).

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REFERENCES

- AOAC. 1960. *Official Methods of Analysis of the Association of Official Agricultural Chemists*, 9th edn, p. 209. Association of Official Agricultural Chemists, Washington DC.
- HEINZE, P. H. and MURNEEK, A. E. 1940. Comparative accuracy and efficiency in determination of carbohydrates in plant material. *Bull.* 314, *Univ. Mo. Sci. Ser.*, pp. 9-10.
- RUCK, J. A. 1963. Chemical methods for analysis of fruit and vegetable products. *Publs 1154, Dep. Agric., Res. Br. Canada, Summerland*, pp. 42-3.
- WOODROOF, J. G. 1970. Tree nuts. *Indian Cashew J.* 6: 7-11.