



Quality attributes of traditional foods of central Kerala

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Abstract

Traditional cuisine is represented as a wide spectrum of food cultures with distinctive regional differences and preferences. Loss of traditional knowledge related to food production may lead to extinction of nutritional food products as well as skills gained through generations. Chemical composition of replicated traditional foods revealed that most of the traditional foods are rich in certain macro and micro nutrients. Protein content of the replicated foods varied from 0.56 to 18.97 per cent with the highest protein content in rankayyan and the lowest in karinellikka. Above 20 mg of calcium per 100 g was found in paniyaram (57.3mg), karinellikka (32.24 mg), madhura puttu (44.71 mg), muttayappam (44.01 mg) poruvelangai (38.9 mg), and rankayyan (56.4 mg). The iron content of 100 g of replicated foods varied from 0.36 mg to 2.86 mg with the highest and lowest contents in niracha pathiri and muttayappam respectively. The evaluation of nutrient content showed a variation in nutritional composition among the replicated traditional foods due to the variation in the ingredients used for the preparation. It is evident that the endangered traditional foods can be replicated under prevailing conditions preserving their quality attributes.

Key words: *Traditional foods, nutritional qualities, poruvelangai, manda, inderiyappam, kala kala*

I. Introduction

Food is a culture, emotion, hospitality, prestige and power and is closely knitted with tradition. Food culture arises out of the place of a people's origin, and so traditional local foods hold the potential to bind and stabilise communities and enable a cultural continuity through conserving their histories. Indian cuisine is represented as a wide spectrum of food cultures with distinctive regional differences and preferences [1]. Moreover, traditional food products are now facing a severe competition from commercially processed foods like fast foods and tin foods. The substitution of traditional foods not only led to a loss of production of traditionally and culturally appropriate food, but also in the loss of traditional knowledge related to food production. It created serious health and socio economic problems among community members [2]. Authentic information on methods of preparation and nutritional qualities of traditional recipes is lacking. Hence, the present study was conducted to replicate selected traditional foods and analyse their nutritional qualities.

II. Materials and Methods

Four districts of Central Kerala, namely Ernakulum, Thrissur, Palakkad and Malappuram were purposively selected for the study. Elderly persons above the age of 60 years with expertise in traditional food preparations were also selected randomly from each study locality. Information regarding various traditional foods and method of preparation were collected. Least used, nutritionally viable and organoleptically acceptable traditional foods were selected, replicated and quality evaluation was carried out under laboratory conditions.

III. RESULTS AND DISCUSSION

A. Nutritional composition of selected replicated traditional foods

Nutritional composition of replicated traditional foods revealed that most of the traditional foods are rich in certain macro and micro nutrients. The evaluation of nutrient content showed a variation in nutritional composition among the replicated traditional foods due to the variation in the ingredients used for the preparation. Studies [3] also indicated variation in the nutritional composition of traditional festive foods of Karnataka. The chemical composition of replicated traditional foods and beverages were evaluated for different constituents initially and the results are presented in Table 1. The moisture content of the traditional foods varied from 1.77 percent in *poruvelangai* to 62.95 per cent in *vishu katta*. *Kaliyadakka*, *paniyaram* and *kala kala* had very low moisture content of 2.1, 2.28 and 3.55 per cent respectively. The foods with high moisture content had a soft texture and were highly perishable.

Table 1 .Chemical composition of replicated traditional food products (per 100g FWB)

Sl .No	Name of foods	Moist ure (%)	Total carbohydrates (g)	Protei n (g)	Fat (g)	Fibre (g)	Calciu m (mg)	Iron (mg)	Sodiu m (mg)	Potass ium (mg)	Vitami n C (mg)
1	<i>Inderiyappam</i>	46.56	62.31	5.42	0.19	2.1	11	2.22	0.92	0.08	-
2	<i>Kala kala</i>	3.55	40.79	5.26	11.96	0	16.07	0.66	29.01	52.01	-
3	<i>Kaliyadakka</i>	2.1	34.27	1.94	2.45	0.6	22.43	1.22	0.016	0.182	-
4	<i>Karinellikka</i>	40.55	12.88	0.56	0	3.6	32.24	1.24	2.28	172.5	165.65
7	<i>Madhura puttu</i>	36.4	52.66	2.33	2.03	0.06	44.71	1.04	0.96	0	-
8	<i>Manda</i>	10.71	43.54	6.84	9.55	0.25	9.23	0.98	0.056	0.71	-
9	<i>Muttayappam</i>	55.17	48.92	11.62	9.88	0	44.01	0.36	22.25	32.71	-
10	<i>Niracha pathiri</i>	21.67	13.43	16.71	12.36	0.71	12.8	2.86	38.4	184.5	-
5	<i>Paniyaram</i>	2.28	74.22	13.71	9.07	0.86	57.03	2.01	9.49	386.4	-
6	<i>Poruvelangai</i>	1.77	68.06	7.29	2.1	1.2	38.9	2.26	33.06	566.71	-
11	<i>Rankayyan</i>	61.03	36.82	18.97	1.25	1.64	56.4	0.81	8.56	305.03	-
12	<i>Vishu katta</i>	62.95	70.19	7.42	1.38	0.01	11.11	1.58	0.94	0.02	-

The highest total carbohydrate content was observed in *paniyaram* (74.22%) followed by *vishu katta* (70.19%) and *poruvelangai* (68.06%). *Karinellikka* had the lowest total carbohydrate content of 12.88 per cent. Traditional foods like *paniyaram*, *poruvelangai* and *vishu katta* which were prepared using different grains and pulses were found to be rich in total carbohydrates. High carbohydrate content in traditional foods of Kerala which varied from 24 to 79 per cent was reported [8]. A study [5] indicated 40 per cent carbohydrate in *Halu bayi*, a Karnataka traditional food based on peanut and ground coconut. Protein content of the replicated foods varied from 0.56 to 18.97 per cent with the highest protein content in *rankayyan* and the lowest in *karinellikka*. More than 10 per

cent protein content was observed in *niracha pathiri* (16.71%), *paniyaram* (13.71%) and *muttayappam* (11.62%). Protein content of *poruvelangai*, *manda*, *inderiyappam*, *kala kala* and *vishu katta* varied from 5.26 to 7.42 per cent. The highest protein content was observed in *rankayyan*. This might be because of the use of green gram as the basic ingredient in the preparation. High protein content of 30 per cent was noticed in *Halu bayi* [5]. *Putharo*, a traditional rice based snack of Khasi tribes of Meghalaya had a protein content of 3.9 to 9.1 per cent [6]. The author also indicated that *dosa* and *idli*, the South Indian traditional foods had 7.4 and 4.2 per cent of protein respectively. A study [8] indicated protein content in the range of 2.36 to 9.41 per cent in traditional Kerala foods.

Among the traditional foods analysed for fat content *niracha pathiri* had the highest fat content of 12.36 per cent followed by *kala kala* (11.96 %), *muttayappam* (9.88%), *manda* (9.55%) and *paniyaram* (9.07%). Less than 3 per cent fat was observed in *inderiyappam* (0.19%), *kaliyadakka* (2.45%), *karinellikka* (0), *madhura puttu* (2.03%), *poruvelangai* (2.1%), *rankayyan* (1.25%) and *vishu katta* (1.38%). The crude fibre content of traditional foods varied from 0 to 3.6 per cent with the highest fibre content in *karinellikka* followed by *inderiyappam* (2.1 %) and *poruvelangai* (1.2 %). The fibre content of *kala kala* and *muttayappam* was found to be 0 per cent. *Karinellikka* showed maximum crude fibre content of 3.6 per cent in which amla was used as the basic ingredient. A study reported a fibre content of 3.10 per cent in fresh amla products [7].

The calcium content varied from 9.23 to 57.03 mg 100 g⁻¹ with the highest content in *paniyaram* and lowest in *manda*. Above 20 mg of calcium per 100 g was found in *karinellikka* (32.24 mg), *madhura puttu* (44.71 mg), *muttayappam* (44.01 mg) *poruvelangai* (38.9 mg), and *rankayyan* (56.4 mg). *Kala kala*, *kaliyadakka*, *karinellikka*, *manda*, *madhura puttu*, *muttayappam*, *rankayyan*, and *vishu katta* had less than 2 mg of iron per 100 g of food. The iron content of 100 g of replicated foods varied from 0.36 mg to 2.86 mg with the highest and lowest contents in *niracha pathiri* and *muttayappam* respectively. Highest sodium content was found in *niracha pathiri* (38.4 mg 100 g⁻¹) followed by *poruvelangai* (33.06 mg 100 g⁻¹), *kala kala* (29.01 mg 100 g⁻¹) and *muttayappam* (22.25 mg 100 g⁻¹). The sodium content of other traditional foods varied from 0.016 to 9.49 mg per 100 g. The potassium content of traditional foods varied from 0 to 566.71 mg 100g⁻¹. Highest potassium content was found in *poruvelangai* followed by *paniyaram* (386.4 mg 100 g⁻¹), *rankayyan* (305.03 mg 100 g⁻¹), *niracha pathiri* (184.5 mg 100 g⁻¹), *karinellikka* (172.5 mg 100 g⁻¹) and *muttayappam* (32.71 mg 100 g⁻¹). All the other traditional foods had a potassium content of less than 1 mg 100 g⁻¹. The Vitamin C content of *karinellikka* was found to be 166.65 mg 100 g⁻¹. *Karinellikka*, an amla based product with considerable amount of vitamin C, retained much of the vitamin C even after prolonged heat processing. Several studies [3, 9] observed retention of much of the vitamin C in different amla based products. The retention of vitamin C in amla based products might be due to the polyphenolic substances present in amla. Some of the traditional foods were found to be rich in minerals also.

IV. Conclusion

Majority of the traditional foods are rich in many macro and micro nutrients. It can be concluded that even though there is a rich treasure of diversified traditional foods in central Kerala, many of them are facing extinction and are undergoing several changes. From the present study, it is evident that the endangered traditional foods can be replicated under prevailing conditions preserving their quality attributes. Knowledge on nutritional qualities of various traditional foods creates interest among young generation and thereby it helps to protect these items from getting endangered.

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