

# Nutrient evaluation of traditional foods prepared during Makara Sankranti festival of North Karnataka, India.

Tejashwini Padakatti<sup>1</sup> & Renuka Meti<sup>2\*</sup>

<sup>1</sup>Research Scholar, Department of Food Processing & Nutrition, Karnataka State Akkamahadevi Women's University, Vijayapura 586108, Karnataka, India.

<sup>2</sup>Associate Professor, Department of Food Processing & Nutrition, Karnataka State Akkamahadevi Women's University, Vijayapura 586108, Karnataka, India.

**Abstract**-Festival celebration is an inseparable event from the lifestyle of Indians. An investigation was undertaken to document the different traditional foods prepared during Makar Sankranti festival of North Karnataka. The data was collected through survey. There are 30 districts, the study covered North Karnataka districts, like Belagavi, Bagalkote, Bidar, Ballari, Kalburgi, Raichur, Gadag, Dharawad, Hubli, Haveri, Koppal, and Vijayapura. The investigator visited each family after taking consent from the family in each talukas, interrogated especially old ladies of the age above 60yrs. The study revealed that there are more than fifteen recipes of main & side dishes including chutney powder were prepared during Makar Sankranti. All the major & micronutrients composition of these foods have good amount of protein, calcium, iron, fat, energy, fibre, vitamin-C & carotene. The foods consumed during Makar Sankranti are nutrient dense foods with high protein, iron, calcium, antioxidants and fibre. Thus the traditional foods of North Karnataka prepared during this season have good source of protein, calcium, iron and antioxidants, which strengthen our body's immune system. No wonder our ancestral food practices are commendable and have to be practiced with utmost care and devotion there by maintaining one's own health.

**Key words:** Makara Sankranti Festival, Micronutrients, North Karnataka, Traditional foods.

## I. INTRODUCTION

Traditional foods are foods and dishes that are passed on through generations(10) or which have been consumed for many generations.(11) Traditional foods and dishes are traditional in nature, and may have a historic precedent in a national dish, regional cuisine<sup>[1]</sup> or local cuisine. India's diversity is not only evident in its multi-religious, multi-lingual people but also the vast variety of cuisines that Indians relish.

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 stabilize communities and enable a cultural continuity through conserving their histories(4). Traditional foods are the foods based on sound foundation of culture, custom, natural environment and consumed by people over long time. Traditional foods are developed through ages invented, modified, utilized and evolved to overcome the monotony in the diet. The traditional foods are carefully held and not quickly changed (5). India has a rich treasure of traditional foods specifically for festivals.

Each state has its own unique traditional foods which have been known since generation to generation. Hemanta Ritu means early winter season .It consists of two months Margashirsha and Pausha. Margashirsha is from Mid November to Mid December and Pausha is from Mid December to Mid January (1).One such festival which falls in *Hemanta Ritu is Makara Sankranti* during the month of January there will be the cold breeze where winter is at peak.

This is the only festival which falls on the same day every year and in North Karnataka it is known as “Makara Sankranti”. It is celebrated on January 15, Shukla Paksha in the month of Pausha. Makara literally means “Capricorn” and “Sankranti” is the day when the sun passes from one sign of the zodiac to the next. Although geographically on this day Sun passes from the Tropic of Cancer to the Tropic of Capricorn. That is the Sun enters the constellation of Makara (Crocodile) and begins to move towards the north. This day has a very special significance because the day and the night of Makara Sankranti are of equal hours. The sowing seeds which are inactive are given heat for sprout forth. Therefore, it is respected as a harvest festival (3). On the feast of Makara Sankranti *Till* (*Sesamum Orientale* Linn.) eating is considered as auspicious. The *Till laddoo* which is prepared has a nutritive and medicinal properties. Women celebrate this day by applying Haldi (turmeric) - Kumkum on each other’s forehead. Children make this day even more colorful by flying kites.

However there are very few studies during different festivals and nutrient computation of these traditional foods hence the present study is an attempt to document the different traditional foods that are prepared and to compute the major nutrients, as north Karnataka grows unique type of cereals, millets, oilseeds and these ingredients are used in different foods preparations that are prepared during Makara Sankranti festival of North Karnataka.

## II. METHODOLOGY

The present study was carried out in the Department of Food Processing and Nutrition, Karnataka State Akkamahadevi Women’s University, Vijayapura, Karnataka, on the Documentation of Traditional Foods Prepared during Sankranti (Sankramana) Festival & to compute their Nutrient Composition.

Study Area: The study was carried out in the North Karnataka; Karnataka is a state in the south western region of India. The state covers an area of 191,976 square kilometers (74,122 sq mi), or 5.83 percent of the total geographical area of India. There are 30 districts, the study covered North Karnataka districts, like *Belagavi*, *Bagalkote*, *Bidar*, *Ballari*, *Kalburgi*, *Raichur*, *Gadag*, *Dharawad*, *Hubli*, *Haveri*, *Koppal*, and *Vijayapura*. For study purpose two *talukas* was selected from these districts randomly, again from these two talukas, vertically two villages were selected.

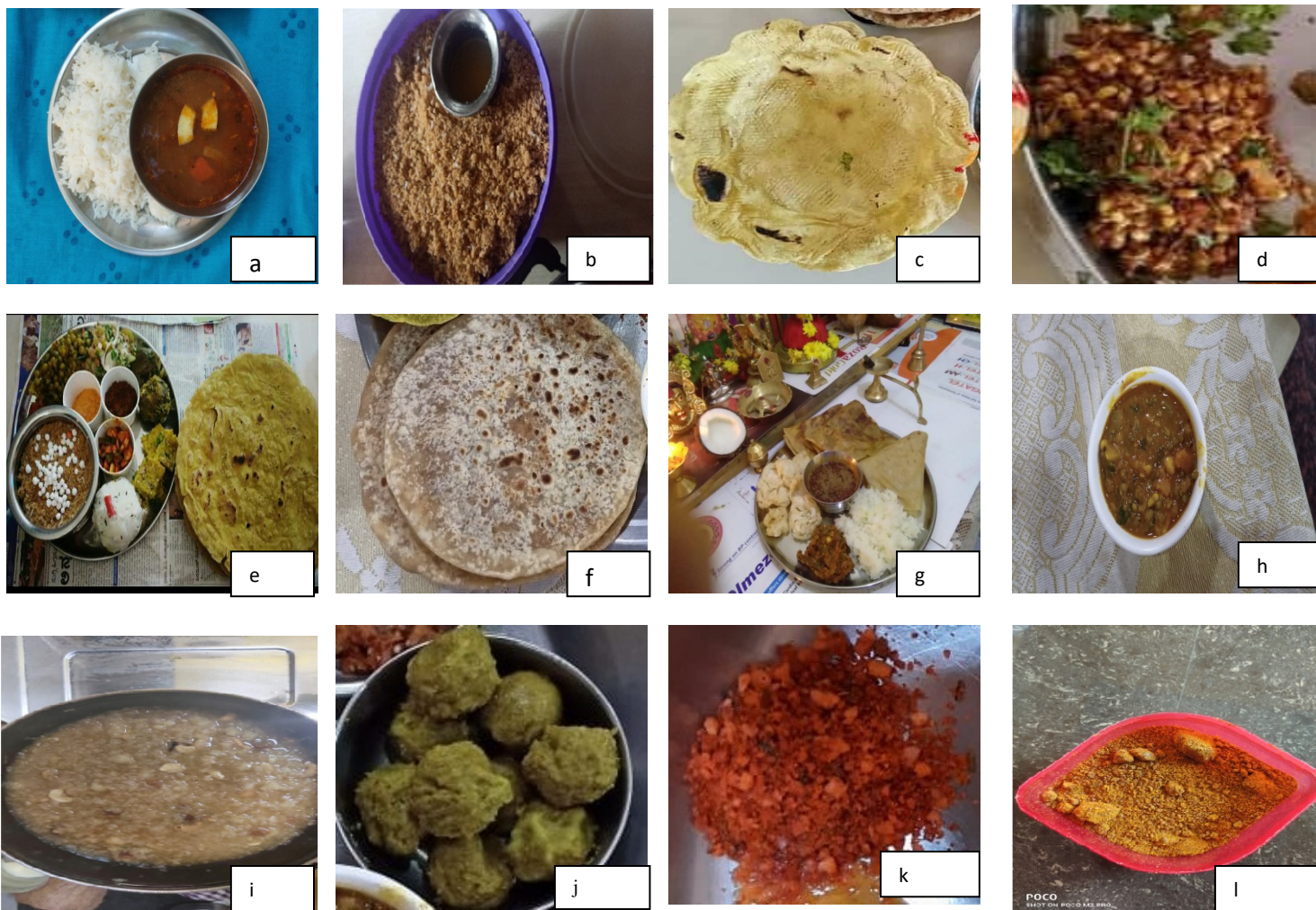


## III. MATERIAL & METHODS

The information was collected by adopting different study tools like interview methods, observation methods with the use of pre-tested questionnaire. The pre tested questionnaire was used to elicit the information regarding the family, socio-economic status, the traditional foods prepared by the families during festivals and other rituals, different ingredients used in it & methods of preparation. The investigator visited each family after taking consent from the family in each talukas with the help of

talukas administration, interrogated especially old ladies of the age 60yrs and above and requested them to demonstrate the traditional foods that they prepare during festival.

Computation of Nutrients: All the major & micronutrients composition of the one meal size portion like protein, fat, CHO, energy, fibre, calcium, iron, vitamin-C & carotene were calculated. Nutrient computation was carried out for all the seventeen recipes of main & side dishes including chutney power were calculated. The nutrient content was calculated for one portion size meal following the standard protocol of Gopalan 2018.



(a) Plain Rice & Katina Saru (b) Madeli & Ghee (c) Bajara Roti (d) Usali (e) Makar Sankranti thali Curd Rice with Badanekayi bharta (f) Sheagon Holige (g) Bele holige & chapatti (h) Gajabeji Palay (i) Godhi Huggi (j) Zunaka Balls (k) Sheagon Hindi (l) Agase Hindi



#### IV. RESULTS & DISCUSSION

Majority of the North Karnataka population celebrates this festival with lots of enthusiasm and devotion. The various foods prepared are given in the Table 1. These foods are prepared by all the people irrespective of their caste as these foods are locally grown and are available easily to one and all. The nutritive values of the traditional food that are prepared during Makar Sankranti were calculated for every ingredient used in the preparation of food recipe. The nutritive value derived for one particular food item represents the sum of the nutrient content of all the ingredients which has gone in to the preparation of a food recipe.

During Makar Sankranti *Bajra* (*Pennisetum glaucum*) grows more which is hot in potency. On this day special meal is prepared i.e. a typical dry *Bajra and Jowar roti*. *Bajra roti* contained energy 147.89kcal/ per serving and good amount of carotene, calcium and protein i.e. 53.1µg, 18.3mg and 4.70gm respectively per serving. Bains et al. reported that the makki roti, a traditional Punjabi food was reported to contain iron (6.8 mg/ 100 g) and copper (0.81 mg/100 g) in fairly high amounts. Jowar dry roti is also one of typical traditional food that is prepared during Makar Sankranti which contained high amount of protein 4.16gm, good amount of energy with 139.6 kcal, carotene 18.8µg & calcium 10mg respectively per serving.

Main course *Sheagon Holige* (Prepared from roasted groundnuts with jaggery) which is nuts and oilseed based recipe has highest calories 258.8 kcal, protein 7.74gm & also fat content 8.32gm per serving. *Tilli ke laddu* which is also prepared during lohori in Punjab is calcium rich is observed by (Vartika Jain). Consuming oilseed & nuts based food products during winter season gives warmth to body. *Madeli* (Wheat Flour (coarse powder) with Jaggery and dry fruits) has high amount of calcium 73.7mg, rich in protein 4.31gm & good amount of energy i.e. 222.09kcal per serving.

*Kadale Bele Holige* (Bengal gram dal Holige) is another main sweet dish which has good amount of protein 6.66gm, fair amount of calcium & carotene i.e. 36.8mg & 31.6µg respectively & energy with 218.2kcal per servings. *Puranpoli* is a known as Holige in Karnataka which is legume based sweet product prepared from Bengal gram dal, Nitin G. Suradkar et al observed that 30.80% moisture content with 16.40% protein content, 27.17% fat content and 51.80% total sugar, and contain high amount of non-reducing sugar was about 49.90%. Puranpoli contain less or negligible amount of reducing sugar that is about 1.90%.

Jha et al found that fox nut used in Makhane ki kheer is rich in calcium, magnesium, phosphorus, and iron were *Godhi Huggi* (Wheat with Jaggery) which is sweet dish has fibre content more 1gm & has good source of protein 5.71gm & calcium 72.9mg. The *chapattis* prepared as main course dish has highest amount iron 7.96mg.

The side dish known as *Gajabeji Palya* (which is mixed pulses of Green gram, Bengal gram, cowpeas with Spinach, Fenugreek leaves and vegetables like Carrot, Brinjal) has the good amount of protein with 4.18gm, Vit-C 4.9 mg and Carotene of about 515.55µg per serving. *Zunaka* and *zunakada wade* (Bengal gram flour curry) prepared during Makar Sankranti is found to have high amount of carotene 305.34µg & energy 156.43kcal, good amount of vit-c2.94mg. Vijayalakshmi Inamdar et al reported that Zunaka had high amount of proteins carbohydrates and sodium contents. *Madaki Kaalina Usali* (Moth bean sprouted curry) which is another side dish has high amount of calcium 22.2mg, & good amount of protein and energy i.e. 80.95 kcal.

During Makar Sankranti time many varieties of *Brinjal* (*Solanum melongena*) are grown more and easily available in the local markets. The side dish *badanekayi bharta* (which is prepared by grilling Brinjal), has good amount of carotene 8.15µg & calcium with 3.8mg and antioxidants. *Kosambari* (Tender Cucumber, Radish leaves, Carrot, Onion, Tomato and Curd) is also prepared and has good amount of carotene 668 µg & vit- c 7.8mg which will help in absorption of iron.

Both *Mosaranna & Plain rice* are main dishes; they provide energy to the body. *Mosaranna* (curd rice) has good amount of protein 1.59gm & Carotene 3.1 µg & plain rice has fair amount of calcium 2.5 mg per serving portion.

*Katina Saru* (Made up with boiled Bengal gram water and different varieties of spices) was a good source of vit-c 4.28mg, energy with 130.04kcal & carotene with 316.56 µg per serving portions

*Sheagon Hindi & Agase Hindi* are the side dishes prepared during Makar Sankranti has high amount of carotene i.e. 6.9 µg & 8.7 µg respectively apart from this groundnuts are very good source of protein, fats and antioxidants and flax seed chutney has good amount of Omega 3 fatty acids. Vijayalakshmi Inamdar et al also observed that groundnut chutney powder recorded high values for calories and zinc.

Table 1: Results

North Karnataka foods prepared during Makar Sankranti		Per Serving size		Protein (gm)	Fat (gm)	Fiber (gm)	CHO (gm)	Energy (kcal)	Calcium (mg)	Iron (mg)	Carotene (µg)	Vitamin-C(mg)
Local names	English names	No's/ Measurements	gm									
<i>Sajje roti (dry)</i>	Bajra Roti	2	40	4.70	2.05	0.50	27.69	147.89	18.3	3.87	53.1	-
<i>Jowar roti (dry)</i>	Jowar Roti	2	40	4.16	0.76	0.64	29.04	139.6	10	1.64	18.8	-
<i>Sheagon Holige</i>	Groundnut Holige	2	60	7.74	8.32	1	38.22	258.8	41	2.128	5.8	-
<i>Madeli</i>	Wheat Flour(chapatti) with Jaggery, dry fruits	1Katori	60	4.317	2.144	0.978	46.36	222.09	73.7	2.457	7.25	0.19
<i>Kadale Bele Holige</i>	Bengal gram dal Holige	2	60	6.66	1.48	0.62	44.84	219.2	36.8	2.568	31.6	0.2
<i>Godhi Huggi</i>	Wheat with Jaggery	1Katori	60	5.712	2.614	1.003	44.12	223.09	72.9	2.615	18.7	0.24
<i>Chapatti</i>	Wheat flour flat bread	2	40	4.84	0.68	0.76	27.76	136.4	9.2	7.96	11.6	-
<i>Gajabeji Palya</i>	Mixed Pluses Green gram, Bengal gram, cowpeas with Spinach, Fenugreek leaves, Carrot, Brinjal	1cup	40	4.81	0.57	0.87	12.66	74.95	52.1	1.23	515.55	4.9
<i>Zunaka</i>	Bengal gram flour curry	1tablespoon	20	2.72	2.70	0.308	7.928	156.86	27.8	0.707	305.34	2.94
<i>Madaki Kaalina Usali</i>	Moth Bean Sprouts curry	1tablespoon	20	2.45	5.115	0.48	6.19	80.95	22.2	1.01	1.65	1.2
<i>Badanekayi Bharta</i>	Brinjal Bharta	1teaspoon	15	0.23	0.305	0.16	1.03	5.35	3.8	0.098	8.15	2.2
<i>Kosambari</i>	Cucumber Radish leaves Carrot Onion Tomato Curd	1 katori	80	2.874	0.9	0.47	4.78	32.5	67.45	0.522	668	7.8
<i>Mosaranna</i>	Curd Rice	1cup	30	1.59	0.48	0.04	16.1	75.2	16.7	0.22	3.1	0.1
<i>Anna</i>	Plain Rice	1cup	30	1.92	0.12	0.06	23.7	103.8	2.7	0.3	-	-
<i>Katina</i>	Made up with	1cup	-	1.086	2.307	0.387	3.725	130.04	32.78	0.309	316.56	4.28

<i>Saru</i>	boiled Bengal gram water and spices											
<i>Sheagon Hindi</i>	Groundnut Chutney	1teaspoon	10	2.014	2.514	0.806	2.83	42.2	8.42	0.256	6.9	1.26
<i>Agase Hindi</i>	Flaxseed Chutney	1teaspoon	8	1.662	0.868	0.908	2.966	39.62	7.2	0.232	8.7	1.26

Table 1: The Traditional foods prepared during Makara Sankranti festival & their nutritional composition per portion meal & in grams.

## V.CONCLUSION

North Karnataka is a rich in culture, despite south Karnataka, north Karnataka has unique pattern of many rituals during all the festivals. Makar Sankranti is one of the festivals that is celebrated during winter season which falls in mid-January. Varieties of cereals and millets based recipes are prepared during this festival. The nutritional evaluation reveals that these traditional recipes which are prepared as main & side dishes are good sources of balanced nutrition. Overall the traditional foods of North Karnataka prepared during this season have good source of protein, calcium, iron and antioxidants, which strengthen our body's immune system. No wonder our ancestral food practices are commendable and have to be practiced with utmost care and devotion there by maintaining one's own health.

## REFERENCES:

1. Manisha G Dughav, Scientific Approach to Celebrate Festivals in Maharashtra in India - A Conceptual Study, *International Journal of Ayurvedic Medicine*, 2015, 6 (2),83-99
  2. Vidyanath Ashtanga Hridaya A.H.Su 3/7 1ed, Varanasi Choukhamba Surbharati Prakashana, 2013, 46p.
  3. Dr. Ranjan Kumar Biswas, A study on celebration of festivals in India for the inculcation of moral education, *International Journal of Advanced Educational Research*, Volume 3; Issue 2; March 2018; Page No. 309-314
  4. E.R.Aneena., P.S.Lakshmi., C.L .Sharon., and Seeja Thomachan Panjikkaran, Quality attributes of traditional foods of central Kerala, *International Journal of Applied And Pure Science and Agriculture*,2015 ISSN: 2394-5532
  5. Vijayalakshmi Inamdar, Bharati V. Chimmad and Rama Naik, Nutrient Composition of Traditional Festival Foods of North Karnataka, *J. Hum. Ecol.*, 18(1): 43-48 (2005).
  6. C.Gopalan, B.V. Rama Sastri & S. C. Balasubramanian, Nutritive value of Indian foods, 2010.
  7. Vartika Jain, Sweets as traditional medicine in winter season: An ethnobotanical study in Udaipur city, India, *Ethnobotany Research & Applications*, 20:31 (2020).
  8. Nitin G. Suradkar<sup>1</sup>, Deepika Kamble<sup>3</sup> and Varsha Fulpagar<sup>2</sup>, Nutritional characterization of Indian traditional Puranpoli, *International Journal of Engineering Research and General Science* Volume 2, Issue 6, October-November, 2014 ISSN 2091-2730
  9. Bains, K., Kawatra, B.L. and Kaur M..Nutritional evaluation of traditional food combination of Punjab. Scientific Proceedings and Abstracts of 31st Annual Meeting of Nutrition Society of India, 26-28th November, Hyderabad (1998).
  10. Kristbergsson, K.; Oliveira, J. (2016). Traditional Foods: General and Consumer Aspects. Integrating Food Science and Engineering Knowledge into the Food Chain. Springer US. pp. 85–86. ISBN 978-1-4899-7648-2.
- Saunders, Raine (October 28, 2010). "What Are Traditional Foods?" Agriculture Society. Retrieved 8 April 2015.