International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

Nutritional Value of *Mahaprasada*: A Ritual Offering of Lord Jagannath in Odisha, India

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Abstract: ***Traditional Indian foods have been prepared for many years which has hidden within itself many nutritional values which is benefits for human health. In other sense we can say that these traditional food are associated with the name of Ritual food by which it can convey the message of good nutrition which is very essential for a healthy life for all categories of human life irrespective of gender, caste and any social barriers. It often is a lesson for generations for the health diet disease free life style. It can guide us by delivering numerous biological functions through dietary components in the human body. Indian traditional foods have presence of functional components such as body-healing chemicals, antioxidants, dietary fibers, and probiotics. These functional molecules help in weight management and blood sugar level balance and support immunity of the body.***

Keywords: Nutrition, health, diet, vitamin, minerals, food

1. Introduction

Traditional Indian foods have been prepared for many years though it varies at its preparation process across the country. This traditional system is a lesson for generations for the health diet disease free life style. It can guide us by delivering numerous biological functions through dietary components in the human body. Indian traditional foods have presence of functional components such as body-healing chemicals, antioxidants, dietary fibers, and probiotics. These functional molecules help in weight management and blood sugar level balance and support immunity of the body (Hotz, 2007). Due to the functional behavior traditional foods are considered as functional food.

Mahaprasad is the term applied to the 56 food (Chhapan Bhog) items offered to Lord Jagannath in the holy Temple of Puri, located in Odisha, India. The Bhog/Naivedya offered to him and later to MaaBimala in the Grand Temple and remains of that Nivedana is known as '*Mahaprasad*'. This chhapanbhog can be broadly divided into following 5 categories which have high nutritional value.

1) Rice Item
2) Sweet Item (Made of Wheat, Ghee, Sugar)
3) Milk Item (Made of Wheat, Milk, Ghee Sugar)
4) *Dal* Item and other (Made of lentils and vegetables)
5) *Saaga*
   - Soar item/ *Khata* (Soar side dish)
   - *Raita* (Yogurt dish with Kukumbar and curd)
   - *Pita* (Fried flower of Neem)

1) Rice

Rice is an excellent food source, low in fat and high in starchy carbohydrate. Rice is full of vitamins &minerals and provided an excellent source of vitamin E, B Vitamins (Thiamin, niacin) & potassium. So far the traditional food items are considered, rice and other cereals are mainly used for preparation of traditional fermented dishes.

Being an integral part of cultural heritage in world in general and in Indian particular, Rice fermented food and beverages has also a great continuing traditional food item in Odisha. These rice-based fermented foods is found with different tastes and textures and mostly prepared by rural women following village art techniques.

The different way of ingredients of rice and different type of methods followed for preparation is only for various taste and flovours. But the nutritional value remains almost same in fermentation process of rice. Fermentation process enriches the rice, supplements it with different essential amino acids, vitamins, minerals, prebiotics, probiotic organisms, and degrades ant nutrients (phytic acid, tannins, and polyphenols). Thus, its nutrition, energy contents, and therapeutic potentialities are increased [Mohan et. al, 2014].

In Odisha specially two type of rice fermentation is found which is used in different rituals specially is offered to Lord Jagannath:

- Water Rice (cooked rice is soaked in water overnight)
- Pitha (cakes prepared from Batter or thick semisolid paste)

1.1. Water Rice/ *Pakhala*

Pakhaḷa is an Odia cuisine, which includes cooked rice washed or gently fermented in water. The liquid a part of the dish is called Toraṇi. It is famous within side the state of Odisha. 'PakhalaBhata' is famous most of the Odia's due to the standard weather of Odisha. Its use brings a few comforts from the generally warm weather within side the summer time season. This fermented rice the lactic acid microorganism breaks down the anti-dietary elements in rice, ensuing in a stepped forward bio-availability of micro-vitamins and minerals including iron, potassium and calcium. Consumption of *Pakhala* is generally averted in intense bloodless climates, in particular within side the winter.

1.2. Pithas

Pithas are prepared by different way of preparation like steaming, frying, baking. To give it different flavour. But the main ingredients used remains fermented raw rice. There are two methods of using fermented rice for pithas.

1) Made of mixed batter of soaked rice and black gram.

Step 1: Soaking**:** It improves fortification, energy density, dephytinization:

Step 2: Fermentation: Fermentation process enriches the rice, supplements it with different essential amino acids, vitamins, minerals, prebiotics, probiotic organisms, and degrades anti-nutrients (phytic acid, tannins, and polyphenols). Thus, its nutrition, energy contents, and therapeutic potentialities are increased [2].

Step 3: Mixed with black gram**:** It improve the amino acid and mineral profiles, therapeutic potentialities.

Step 4: Grinding, or boiling/steaming/frying
1. Made of Flour of soaked rice
Step 1: Soaking
Step 2: Fermentation:

Rice-based fermentation involves either acidic or alcoholic fermentation or both consecutively. The above whole process generally relaxes the compact structure of starch and simultaneously dilutes the contents of ant nutrient components (Charalampopoulos. et. al.2002; Ghosh. et. al., 2015)

1.2.1. Chakulipitha (mixed with black gram): The fermentation increases amount of total acids, total volume, total solid, non-protein nitrogen, free amino acid, Vitamin B1, B2, folic acid, amino nitrogen, increased bio accessibility of Zinc & iron (Gupta &Tiwari, 2014). *This* is considered benefits for (Gupta &Tiwari, 2014; Ray & Swain 2013) for individuals with wheat allergies or gluten intolerance and it offers adequate energy for prolonged physical endurance. Low glycemic load and glycemic index of *chakuli* help to fight against pre-diabetic and post-diabetic conditions. It is also believed that *chakuli* has medicinal properties and can be used to increase fertility, weight of fetus, and breast milk. It is also considered as a remedy for rheumatism and neural disorders.

1.2.2. Chitaupitha/Dosa: Conventionally, parboiled rice and *urad* dal paste are mixed to prepare the batter which is fermented overnight. The fermented batter is next mixed with sugar, grated coconut, or other seasonings. The final mixture is poured into an earthen mold, covered, and fried in low heat to obtain traditional *chitou* and *appam* (Ray & Swain 2013; Roy. et. al 2007). It consists of low calories and fat, Sodium potassium, Carbohydrate, Dietary fiber, Protein, Vitamin A, B. This is a healthy and easy digestible, nutritionally enriched food [Blandino, 2003]. In *this type pitha* during fermentation, the volume of the batter doubles and as fermentation time increases, the protein content of batter increases [Son et. al 1985]. It is more digestible and nutritionally dense, and hence is recommended to elderly people and children younger than 10 years.

1.2.3 Podopitha*:* It is an energy rich cake containing abundant carbohydrates and free sugars, and fibers (Roy et. al, 2007)

1.2.4. Idli: *Idli* is a fermented product prepared from rice and black gram batter by steam cooking. Use of rice along with pulses is necessary as a source of mixed natural microflora needed for efficient fermentation (Achaya, 1994). Black gram (Phaseolusmungo. L.) is the primary ingredient having natural fermentation microflora and acts as the substrate for the fermentation of batter (Radhalrishnamurty, 1961). The acidity of the batter is regulated by homofermentative lactic acid bacterium Streptococcus faecalis (Mukherjee et. al, 1965). In addition to these, probiotic microorganisms such as Lactobacillus plantarum and Lactobacillus lactis are also present in idli batter. Fermentation of idli batter improves the nutritional and protein efficiency value (Radhalrishnamurty, 1961). Leavening is the primary objective of fermentation in idli preparation. The major microorganisms involved in the leavening process are hetero-fermentative lactic acid bacterium, Lactobacillus mesenteroides. The acidity of the batter is regulated by homofermentative lactic acid bacterium Streptococcus faecalis (Mukherjee et. al, 1965). In addition to these, probiotic microorganisms such as Lactobacillus plantarum and Lactobacillus lactis are also present in idli batter. These microorganisms can produce vitamin B12 and bgalactosidase enzyme, which enhances the probiotic activity and promotes health (Iyer, 2013). Due to the fermentation process, idli is more digestible and is recommended to all age groups.

1.2.5. Enduripitha: Enduripitha is a flavoured cake, native to Odisha state, prepared during the prathamastami festival. It is the steamed flavor cake which is prepared from rice and black gram dhal. For this preparation, fermented batter of black gram and rice flour are filled in to folded leaves of turmeric (Curcuma longa L.) and then cooked over steam. (Ray & Swain, 2013)]. This helps in strengthening the immune system and in fighting against worms, and different infections which are common in the winter season. Black gram proteins present in it are deficient in methionine and cysteine amino acid, this lowers the biological value of proteins and fermentation seems to enhance the nutritional quality of the blend of black gram and rice (Padhya, 1979). Other ingredients such as coconut, curd, and sugars are added. It is recommended to all age groups. The extracts of turmeric leaves through this traditional food in winter season increase the immune system of the body (Roy et. al, 2007).

2. Sweet Item made of wheat

There are around 10 items made of wheat are offered to Lord Jagannath as a sweet dish. Enriched wheat flour may be a good source of iron, thiamine, niacin, calcium, and vitamin B6, in addition to the above nutrients. Whole wheat may be a decent source of several vitamins and minerals, including selenium, manganese, phosphorus, copper, and foliate.

3. Milk

Apart from wheat a number of sweet dishes are offered to Lord Jagannath as a part Mahaprasad which are made out of milk. According to the Ayurveda, milk has unique nutrition that cannot be provided by any other foods. Milk and milk products have a good balance of protein, fat and carbohydrate and very important source of essential

nutrients including calcium, phosphorous, Vitamin A and B 12, potassium, magnesium and zinc.

3.1. Rabdi: Rabdi is a famous dairy preparation in the north-west part of India. It is a lactic acid-fermented milk product with pearl millet. As compared to other cereals, pearl millet has lower glycemic index, which is helpful in managing noninsulin dependent diabetes mellitus, where primary cause is associated with interruption in carbohydrate metabolism [Mani. Et. Al 1993].

4. Dalma

It is prepared out of healthy ingredients toor (arhar) /chana/moong dal and an assortment of vegetables typically raw banana, eggplant, green papaya & pumpkins simmered in a special blend. It is relatively made with less oil and less spice.

- Dalma is packed with proteins from dal and other essential minerals & vitamins from other vegetables.
- It contains good amount of enzymes & minerals good for digestive tract.
- It helps to burn extra calories and it is excellent in fiber content.
- Being less oily and spicy, it is good for diabetic patients and weight catchers.

4.1. Dal: Toor dal or Arhar Dal is main ingredients to be used for the preparation of Dalma. It is a rich source of protein, carbohydrates and fiber. The humble pulse facilities to meet the daily demands of iron and calcium. Besides these, toor dal is an incredible source of folic acids which is essential for fetal growth and prevents the birth defects of the new born.

4.2. Banana: Banana is a delicious fruit used in India mostly as *prasada* (spiritual food). The different parts of banana plant used are fruit, flower, and stem. Ripe banana fruit is used for treating gastric problem, since it is alkaline in nature, neutralizes the acid conditions and helps in formation of thick protective mucus layer (Rajaiah, 2010). Banana fruits are rich in iron, hence it can be recommended to women who are suffering from anemia (Mohapatra, 2010).

4.3. Papaya: Papaya (Carica papaya) is well known for its nutra-ceutical values and it is used in traditional medicine system. All the parts of the tree are used in treating one or more diseases. Latex papaya tree is used to relieve dyspepsia, ripe fruits are used in treating chronic diarrhea, unripen fruits are diuretic in nature. Papaya seed juices are used in treatment of bleeding piles and enlarged liver, and young leaf paste is used to treat jaundice (Kirtikar&Basu 1918).

4.4. Pumpkin: Pumpkin offers Vitamin C, E, iron and folate which strengthen the immune system. It is highly Nutrious and particularly rich in Vitamin A. It consists of high antioxidant content which may reduce the risk of chronic diseases. The contents of Vitamin A, Lutein and Zeaxanthin present in pumpkin may protect the eyesight. Also the nutrient density and low calorie count present in it may promote weight loss.

5. Saaga or Green leafy vegetables:

Saaga is a leaf-based dish prepared in the north east part of India. Green leafy vegetables such as spinach, basella, mustard leaf, or collard greens are used in the preparation of saaga Green leafy vegetable Green leafy vegetables are good sources of nutrients and falls in the category of natural ant aging wonders). Green leafy vegetables are rich source of vitamins and antioxidants, and many, such as curry leaves, fenugreek, and amaranthus, are used in Indian culinary preparations (Gupta & Prakash, 2009). Some of the health dishes used in northeast and south India is discussed below.

6. Soar Item

Dried Mango being a good source of B complex vitamins helps in boosting energy and reduces stress. The fiber in it improves digestion and overall heart health. Other health benefits offered by these dried fruits include a better skin appearance, increased circulation and weight loss.

7. Raita

Raita is prepared using curd and cucumber which is high in protein and low in unhealthy fats. It makes perfect aid for digestion and weight loss.

7.1. Dahi (Indian yoghurt): Traditionally, dahi is a naturally fermented milk product obtained from boiled cow or buffalo milk and soured using mixed lactic cultures. It is used in daily diet as a potential source of Bcomplex vitamins, folic acid, and riboflavin (Sharma &Lal 1979). Dahi is rich in lactic acid bacteria and demonstrates probiotic effect, which helps in intestinal health. A bacterial culture helps in controlling diarrhea in children (Agarwal, 2002). The bioactive compounds produced by actic acid bacteria such as diacetyl, hydrogen peroxide, and reuterin suppress the normal growth of undesirable flora, especially E. coli, Bacillus subtilis, and Staphylococcus aureus (Sarkar& Mishra, 2001). As storage time increases the sourness of dahi increases, mild heat treatment can be given to increase the shelf life.

7.2. Cucumber: It has a detoxifying and cleansing effect on the overall health. Its hydrating properties have zero fat and low calories which provide weight loss and other health related benefits.

8. *Pita* (Fried flower and leaves of Neem):

Neem leaves are extensively used in making Ayurvedic medicines because of their antibacterial, anti-inflammatory and anti-fungal properties. Neem leaves contains various biologically active compounds like nimbin, nimbolide, nimadical etc which helps in the treatment of skin of gum disease, detoxiflies blood and helps in skin toning, reducing acne, promote a healthy respiratory and digestive system and nourish hair. It also helps in reducing ulcers and a wide range of intestinal issues such as constipation, blotting and cramping if taken regularly. The flower is used for reducing bile treating intestinal worms. Constituents of neem leaves include protein (7.1%), carbohydrates (22.9%), minerals, calcium, phosphorus, Vitamin C, carotene etc. They also contain glutamic acid, tyrosine, aspartic acid, alanine, praline glutamine and cystin like amino acid and several fatty acids.

2. Conclusion

There is so much diversity in traditional health foods of India because the regional health foods have evolved according to the climate, culture, and cropping practices of a particular region. Moreover, certain foods have become more popular in certain region according to the health condition of a population such as lactose intolerance in Bengal leads to popularization of lactose-free dairy sweets. A national research project in India is recommended to scientifically document the health benefits of traditional and ayurvedic health foods across various regions so that a database can be created for preservation of knowledge on processing, preservation and dietary guidelines on traditional and ayurvedic foods for the benefit of both the Indian and international communities.

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